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INN WATER

Promoting social innovation to renew
multi-level and cross sector water governance

Deliverable 5.2

Final Pilot Sites Implementation Guidelines

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Related deliverables

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| D5.1 | Preliminary Pilot Sites Implementation Guidelines | Previous interim version |
| D5.3 | Pilot Site Implementation Progress Report | Document Pilot Site activities |
| D2.1 | Enhanced Water Governance Assessment Tool | To be used in pilot site communities |
| D3.2 | Citizen Engagement Methodology - Guidelines | To be followed in pilot site communities |
| D3.3 | Methodology for Creation of River Basin Water Forum | To be trialled in pilot site communities |
| D4.1 | Water Governance Diagnostic Tool | To be trialled in pilot site communities |
| D4.2 | Modelling cross-sector interactions | Tested in one or two communities |
| D4.3 | Social-Economic model water demand management | Trialled initially in La Reunion |

EXECUTIVE SUMMARY

The final pilot site implementation guidelines are designed to be a working document that introduces the need for Pilot Site Communities including some of the issues with building representation based on the influence and interest of stakeholders. The final guide also details the nature of each Pilot Site Community both in terms of geographical information but also in terms of current status and challenges with water governance in each area. They also highlight the composition of each Pilot Site Community. Lastly, the aim of the final guide is to show how and when the 30 Pilot Site Community webinars and the three European level Transversal webinars envisaged over the project period have been used and will be used to explore both the local challenges, but also project-wide challenges as framed in each Work Package. This live document was updated throughout the project as more detail emerges from each Work Package and Pilot Site. This report D5.3 is the final report, but it is still a living document to guide partners.

Stakeholder engagement is crucial for the success of the InnWater project. However, effective stakeholder engagement can be challenging and requires careful consideration of various factors. One major challenge in stakeholder engagement is identifying and prioritizing relevant stakeholders. Complex projects or organizations can have numerous individuals or groups with diverse interests, making it difficult to determine who should be included in the engagement process. Moreover, stakeholders may have differing influence and interest levels, further complicating the prioritization process. Therefore, the project needs to pay attention to: A) the selection of the Pilot Site Community; B) the facilitation of the Pilot Site Community, C) the scheduling Pilot Site Community events, D) the resourcing Pilot Site Community events.

The five Pilot sites are spread across Europe and its overseas territories, and include a range of spatial areas and topography including:

- **La Reunion** (Overseas department of France) (2,500km² with a height range of 3,031m);
- **Middle Brenta** (1,700km² with a height range of 2,115m);
- **Figueres** (1,150km² with a height range of 1,208m).
- **Westcountry** (21,000km² with a height range of 621m); and
- **Tisza** (5,500km² with a height range of 27m).

The selection contrasts the different water governance areas and scales from large coastal regions to small islands and from river basin to land locked lowland areas. The diversity will be used to deliver elements of the other main Work Packages such as Water governance for sustainability and resilience (WP2), Citizen Engagement (WP3) and Water governance Diagnostic tools, Micro-Simulation economic models and the creation of an InnWater platform (WP4). Alongside, WP6 coordinates Transversal webinars that involve all pilot sites communities.

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ACRONYMS

| | |
|-----------|----------------------|
| CA | Consortium agreement |
| EC | European Commission |
| GA | General Assembly |
| PS | Pilot sites |
| SC | Steering Committee |
| WP | Work Package |

INTRODUCTION

InnWater is a three-year European project that has started in March 2023. It brings together 13 partners with different expertise and stakeholders from 6 countries, to promote social innovation to renew multi-level and cross sector water governance.

The InnWater pilot site implementation guidelines are designed to be a working document that introduces the need for Pilot Site Communities including some of the issues with building representation based on the influence and interest of stakeholders. The guide also details the nature of each Pilot Site Community both in terms of geographical information but also in terms of current status and challenges with water governance in each area. They also highlight the composition of each Pilot Site Community.

Finally, the aim of the guide is to show how and when the 30 Pilot Site Community webinars and the three European level Transversal webinars envisaged over the project period will be used to explore both the local challenges but also project wide challenges as framed in each Work Package. This live document was created in the continuity of D5.1 (Preliminary pilot sites implementation guidelines) and updated throughout the project as more detail came out of each Work Package and Pilot Site.



1 PILOT SITE COMMUNITY INTRODUCTION

The InnWater project is a broad consortium of partners covering both thematic and geographic areas of expertise. The Pilot Site Committee pulls together the partners with geographic expertise of the five pilot sites in order to standardize and harmonize activities across the area and allow for replication into other areas. It builds on several initiatives, such as the Catchment Based Approach¹ and Local Water Forums², where community members and stakeholders are brought together to discuss and manage water-related issues at a local community scale. This set of guidelines is designed as a working document for all partners to ensure all activities with stakeholders are planned and delivered effectively and efficiently.

1.1 Governance

Internal governance of how stakeholders are approached is managed through the Pilot Site Committee, which consists of representatives of each Pilot Site and the WP6 Communications lead, and are the access points for any communication activities within each area. Therefore, it is vital that all work package activities are listed in the Work Package requirements section of this document, with as much notice as possible, so any interactions can be scheduled and managed through a minimum of six local workshops/webinars for each of the five pilot sites spread throughout the project life span and run in the local language. Alongside local workshops there are three project level international stakeholder webinars that will be run at a European level for both pilot site communities but also replicator communities in English as a default but with translation where required.

The above InnWater Pilot Site Community logo has been designed to be used with both individual Pilot Site community groups but also wider European webinars.

1.2 Stakeholder engagement challenges

Stakeholder engagement is crucial for the success of the InnWater project, however, effective stakeholder engagement can be challenging and requires careful consideration of various

¹ Collins, C *et al.* (2000) « Collaborative water management across England – An overview of the Catchment Based Approach » Environmental Science & Policy, Volume 112, 2020, Pages 117-125.

² Fiware4Water Consortium (2022) « Technological and non-technological dimensions of Digital water » https://www.oieau.fr/pub/F4W-Digital-Water_non-Expert/

factors³. One major challenge in stakeholder engagement is identifying and prioritizing relevant stakeholders. With complex projects or organizations, there can be numerous individuals or groups with diverse interests, making it difficult to determine who should be included in the engagement process. Moreover, stakeholders may have differing levels of influence and interest, which further complicates the prioritization process therefore attention needs to be paid to the:

A) Selection of the Pilot Site stakeholders

One of the challenges lies in managing conflicting interests and expectations. Stakeholders often have different perspectives, goals, and priorities, leading to potential conflicts. Balancing these conflicting interests while ensuring a fair and inclusive engagement process can be demanding. Effective communication and negotiation skills are essential to address these conflicts and find mutually agreeable solutions.

B) Facilitating of the Pilot Site Community

Maintaining ongoing engagement and participation is yet another challenge. Stakeholder engagement is not a one-time event but a continuous process. Sustaining stakeholder interest and involvement throughout the project lifecycle requires sustained effort and proactive communication. It may be challenging to keep stakeholders engaged, especially when there are competing priorities or limited resources available.

C) Resourcing Pilot Site Community events

Additionally, stakeholder engagement challenges can arise from inadequate resources, such as time, budget, or expertise. Insufficient resources can hinder effective engagement efforts, limiting the ability to gather feedback, provide timely information, or address stakeholder concerns adequately.

In conclusion, stakeholder engagement poses several challenges that organizations and projects must overcome. By identifying and prioritizing stakeholders, managing conflicting interests, maintaining ongoing participation, and allocating sufficient resources, organizations can navigate these challenges and foster meaningful engagement that contributes to their success.

1.3 Stakeholders: Interest versus influence

Effective, efficient and inclusive water governance, as defined in Work Package 2, seeks to enhance water security and ensure access to safe drinking water and sanitation for all, while responding to environmental, economic and social objectives. This ambition requires the building of robust and representative stakeholder groups in order to successfully identify gaps and priorities, needs and responses within water management, with the ultimate goal of delivering better water decisions for better lives. To properly understand the stakeholders required to build a robust and representative voice analysis needs to be done of their influence and interest. The InnWater partnership undertook a water sector stakeholder assessment (see Figure 1) in order to identify the key groups and their roles and responsibilities. This assessment identified where stakeholders had influence over water management decisions, where there was interest in water

³ Kujala, J., Sachs, S., Leinonen, H., Heikkinen, A., & Laude, D. (2022). Stakeholder Engagement: Past, Present, and Future. *Business & Society*, 61(5), 1136-1196. <https://doi.org/10.1177/00076503211066595>

management decisions and how, when plotted on a chart, pulled our key groups that needed either close management, consulting, engaging or monitoring and influencing.



Figure 1: Stakeholder Analysis based on their Interest and Influence in water governance

The roles and responsibilities of the different stakeholders are summarized below and are detailed further in the individual pilot site sections as some areas engage the stakeholders directly (e.g. La Reunion) and some are communities of catchment facilitators (e.g. West Country).

Manage Closely – These groups are very important and likely to be already involved but care is needed to ensure prioritizing them does not alienate others.

- Water Agency – Key government regulatory groups and policy
- Basin Authorities – Key government partnerships pulling together action plans
- Private water investors – Investors in water management or other (e.g. carbon)
- Energy Companies – High water users for hydro or cooling
- Grant Funders – Funders in water management or other (e.g. carbon)
- Agricultural producers – High water users food production
- Large farm owners – High water users for irrigation or dairy cattle drinking

Consult – These groups have the power to derail activities so they must be aware of the work

- Local Elected Officials – Can be heavily influenced by the public both for and against
- Large water users – As above but their water use may not be obvious
- Media – Can be influenced by public opinion both for and against
- Land Owners – Can derail activities if they do not want water solutions on their land
- Tourism – Can put collective pressure on other major water users
- National Politicians – Can sway local elected officials and national policy
- Forestry – Can have a large influence on catchment management

Engage – The groups are interested but have less influence, so they need to unite their voice to increase their collective impact on the influential but not interested groups.

- Local State Representatives – Similar to elected officials but more interested locally
- Waste Water Sector – Distally connected to water quantity but impacts on quality
- Water Utilities – Depending on a link to wholesale water treatment and management
- Customer Associations – Local groups and interests
- Environmental Groups – Can provide a passionate narrative for biodiversity loss
- Public local water technicians – Varying levels of interest and connectivity
- Natural Parks – Can provide a passionate narrative for biodiversity loss
- Academia – Important and variable level of interest depending on academic study
- Hunting/Fishing Associations – Provides local voices for narrow but related activities
- Citizen associations – Provides local voices for specific but related activities
- Water industry – Wider voices than just water resources/quality (e.g. carbon)

Monitor and Influence – This group provides more representation to any grouping, community and partnership but it is challenging to properly engage.

- Parents/teachers
- Youth leaders
- Marginalized groups

1.4 Pilot Site Overview

In order for the InnWater project to test concepts surrounding innovative water governance, five Pilot Sites were selected, covering a range of spatial areas and topography including:



La Reunion (2,500km² with a height range of 3,031m); **Middle Brenta** (1,700km² with a height range of 2,115m); **Figueres** (1,150km² with a height range of 1,208m). **Westcountry** (21,000km² with a height range of 621m); and **Tisza** (5,500km² with a height range of 27m). These contrasting areas cover large coastal zones and islands with varying ranges in altitude and climate to land-locked lowland areas. This allows the InnWater consortium a variety of different solutions and scenarios.

Figure 2: Pilot Site overarching map

2 PILOT SITE COMMUNITY INFORMATION PACK

Communication support is needed by Pilot Site leads to inform stakeholders of the ambitions and objectives of the project. It takes the form of three types of resources to provide different materials accessible to different audiences (power points, project leaflets and pilot site leaflets). This is summarised in D6.1 InnWater Multi-level Communication and Dissemination Strategy and Plan.

2.1 PowerPoint presentation on the SharePoint site

Presentation of InnWater, definitions, main objective, method, expected results, Pilot Sites roles and planning for actions.

Why is water governance important?

To face CHALLENGES

"Water crises are often primarily governance crises" OECD (2011)

- **Multi-dimensions** challenges such as:
 - climate change impact
 - population growth at the global scale
 - safe water access and uses at the local scale
- **Water, Energy, Food, Ecosystem and Health are linked.** This needs to be valued to embrace all the water uses in a sustainable way.

To tackle NEEDS

Innovative and cross sector water governance


- Improve efficiency, effectiveness, trust and engagement
- Provide cross sector approaches to set sustainable management and uses
- Support decisions
- Develop policy recommendations





Figure 3: Why is governance important?


Pilot Sites role



To test and co-develop
in the 5 Pilot Sites
the **tools and methods**

Analysis and feedbacks will then lead to:

- the identification of the **policy and regulatory recommendations** at the **local, European and international scales**
- the **replication** of InnWater solutions.






Figure 4: Presentation of the pilot sites role

2.2 Leaflets on the SharePoint site

A 2-page leaflet presenting the project in English, available in high resolution on Sharepoint.



Figure 5: InnWater leaflet

2.3 A leaflet for each of the 5 Pilot Sites on the SharePoint site

A leaflet for each of the 5 Pilot Sites, with specific information on the local stakeholders, challenges, ambition of the project. Made in English, to be translated in local language.

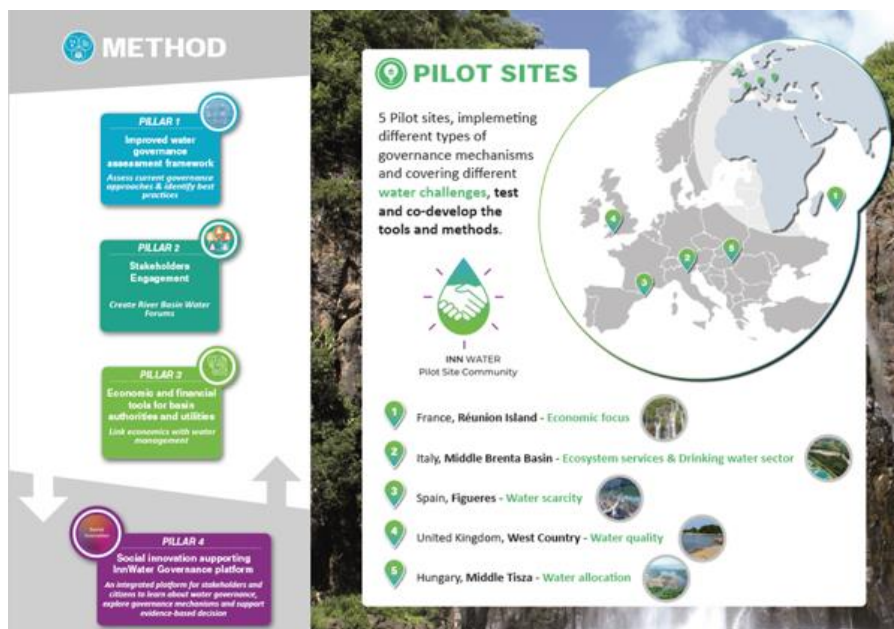


Figure 6: Pilot sites leaflet

3 PILOT SITE 1 - LA REUNION (FRANCE)

Each Pilot Site has been mapped to show key elements such as rivers, geology, soils and land use.

3.1 Pilot Site 1 La Reunion maps



Figure 7: Pilot site 1: La Reunion map - Roads and Cities



Figure 8: Pilot sites 1: La Reunion map - Rivers

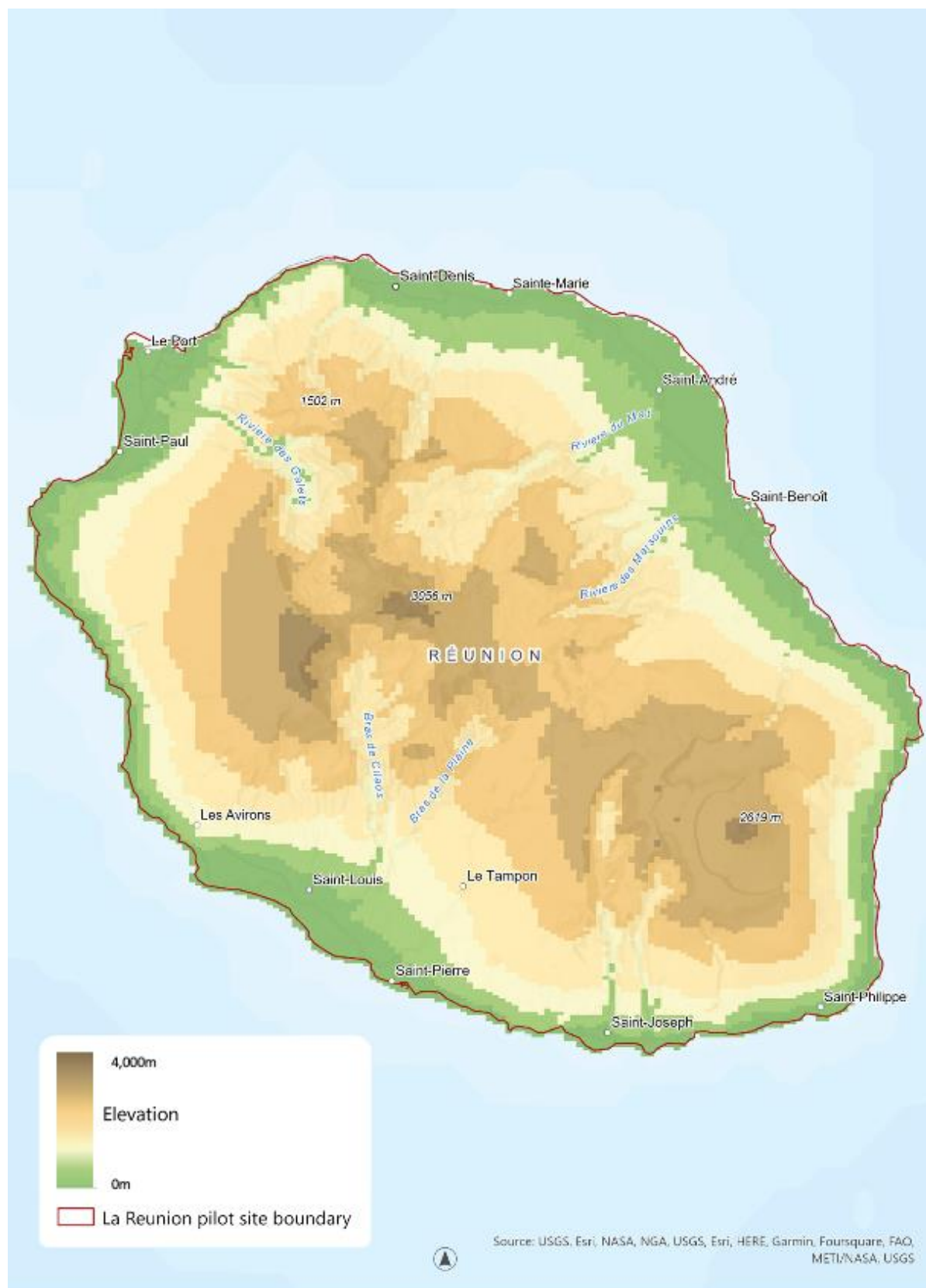


Figure 9: Pilot sites 1: La Reunion map - Elevation

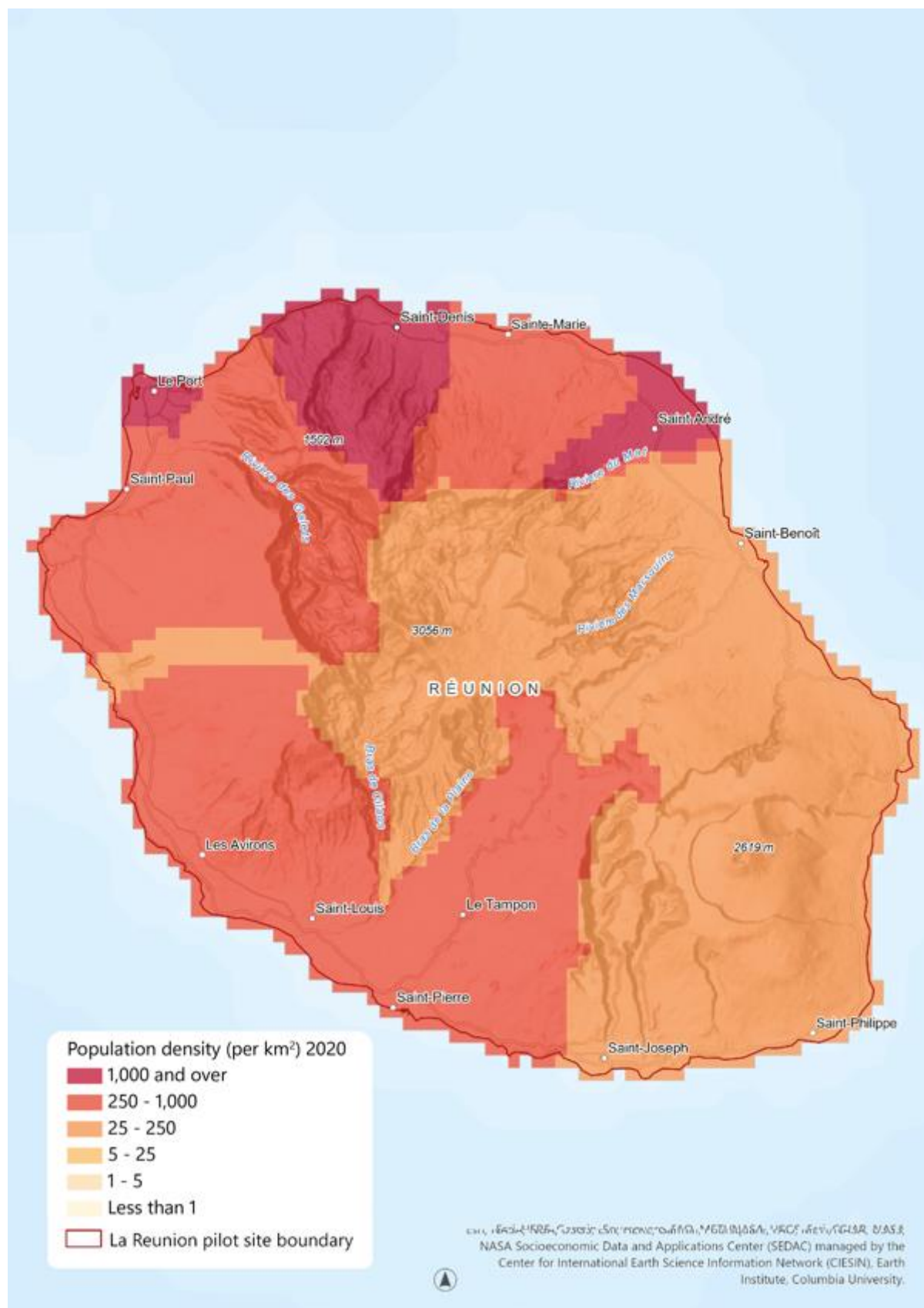


Figure 10: Pilot sites 1: La Reunion map - Population



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Figure 11: Pilot sites 1: La Reunion map - Geology



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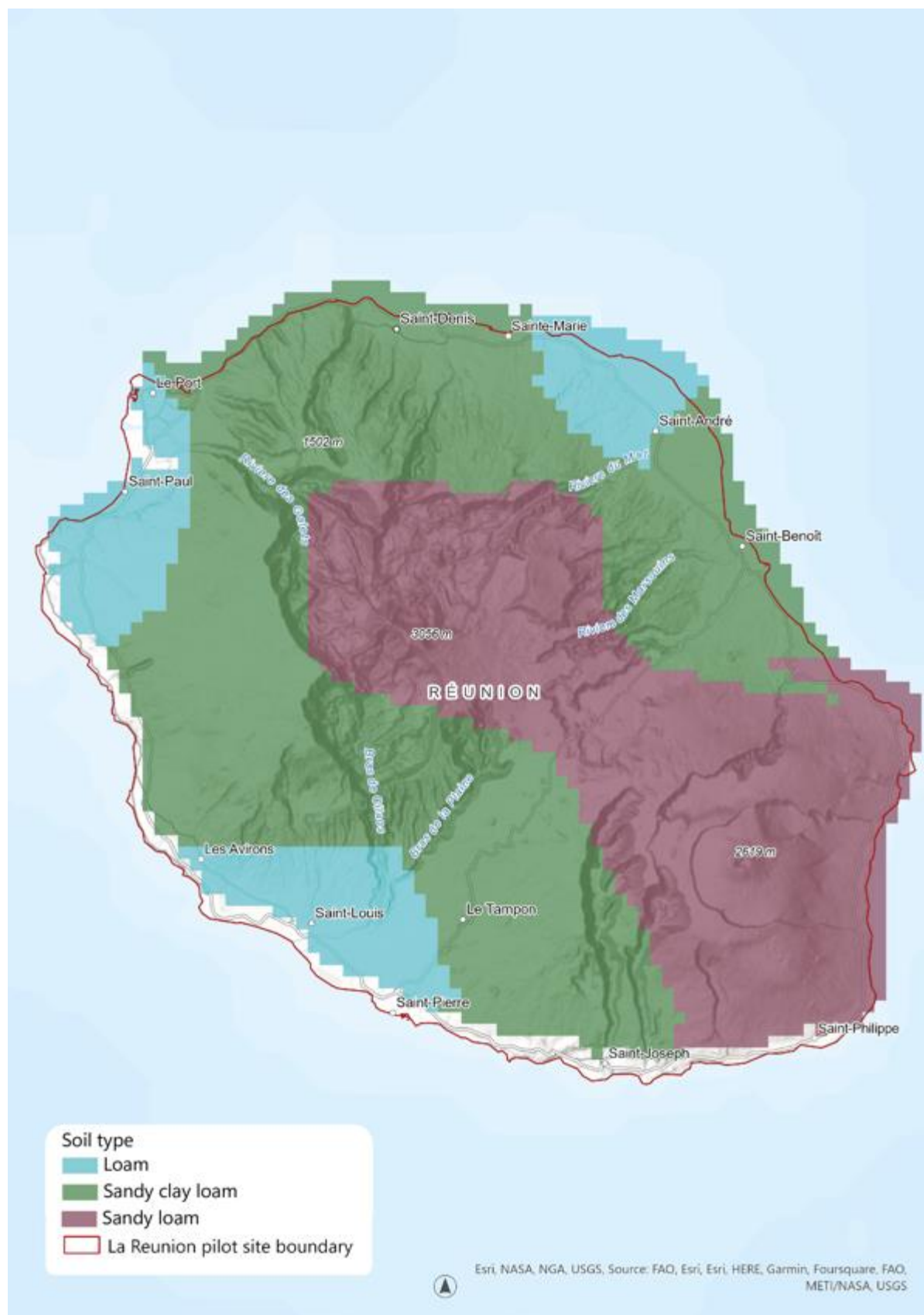


Figure 12: Pilot sites 1: La Reunion map - Soils



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Figure 13: Pilot sites 1: La Reunion map - Land Cover



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3.2 Description of the area

Reunion Island is a French volcanic island located near Madagascar, in the western Indian Ocean (Southern Hemisphere). Covering an area of 2,500 km², it has a steep relief with a narrow coastal strip (from 0 to 5 kilometers, 210 kilometers long) where a large part of the population is concentrated (75%).

Reunion Island is subject to a humid oceanic tropical climate. It benefits from significant rainfall but unevenly distributed over time, with a dry season running from May to November, and in space with the southwestern area that receives 500 ml of rain annually (on average). A related difficulty is that it is in this area that a significant part of the economic activity is concentrated (due to the presence of port and tourist infrastructures).

Reunion Island also faces the risk of cyclones (on average, a dozen cyclones are recorded per year in the southern area of the Indian Ocean), with several events (10) of varying intensity that have affected the island since the beginning of the 2000s.

Socio-demographic data (main):

- 860,000 inhabitants, increasing at the rate of 0.5% per year,
- GDP is 19.7 billion euros with a growth rate of 2.2% (in volume) and a GDP per capita of 18'300 €,
- Active population: 560,000 people, including 265,000 employees, with an unemployment rate of 21% and an employment rate of 46%,
- Poverty rate: 38% (+14 percentage points compared to mainland France) with a median standard of living at 1'250 euros per month (-28% compared to mainland France) and a standard of living for the first decile at 670 euros (930 euros in mainland France).
- High cost of living: +37% for the food basket (compared to mainland France).

Coastal and continental waters:

- 24 water bodies for rivers, 3 for ponds, 27 for groundwater and 12 for coastal waters (including 4 reefs).
- Precipitation: 7.6 billion cubic meters per year, which breaks down into 2.9 for evapotranspiration, 1.6 for runoff and 3.1 for infiltration (on average).
- 24 species of fish (identified), including 9 endemics.

The drinking water and sanitation sector - Water withdrawals:

- A little more than 200 million cubic meters, of which 140 are for drinking water supply, 50 for agricultural irrigation and 10 for industry (including hydroelectricity).
- Drinking water supply withdrawals are 47% from groundwater (89 catchment points) and 53% from surface water (126 catchment points). Agricultural and industrial uses mainly draw from surface water (90%).
- Low storage capacity (400,000 m³ spread over 382 structures) because of the nature of the soil that does not allow for the construction of dams.

The drinking water and sanitation sector - Drinking water network:

- 25 water treatment plants, 5,900 kilometers of distribution network with an average efficiency of 62%, well below the national average (80.4%).

- 380,000 subscribers for an average consumption (per subscriber) of 194 m³ per year, much higher than the national average (118 cubic meters).
- The withdrawals for drinking water supply amount to 387 cubic meters per year and per subscriber (year 2016).

Sanitation network:

- 16 wastewater treatment plants with 200,000 households connected to the collective sewerage network (52%) and 180,000 non-collective sanitation installations (48%),
- 37 million cubic meters of wastewater collected and treated,
- 9'558 tons of dry matter per year (from plant sludge)

Drinking Water and Sanitation Tariffs:

- Social incentive progressive pricing (Increasing Block Tariff, IBT), with consumptions in the first blocks subsidized by part of the consumptions in the upper blocks (cross-subsidy system).
- Average unit consumption cost: 1.26€ (including VAT) for drinking water, 2.46€ (including VAT) for drinking water and sanitation with a great diversity (from simple to double) depending on the water utility. To be compared with the average price (for an average consumption of 120 m³) for France as a whole: 4.19€ (including VAT) of which 2.08 for drinking water and 2.11 for sanitation.
- Average annual bill: 225€ for drinking water, 430€ for drinking water and sanitation (against 500€ for an average consumption of 120 m³ for France as a whole). The weight of the bill in the household budget is much higher than the national average for more than half of the population living in collective sanitation areas.

3.3 Local challenges

The main local challenges relating to the water Pricing Policy, for domestic uses, are the following four items:

- 1 Stakeholders (public decision-makers in particular) do not have a clear picture** of the full array of the socio-economic consequences and performance of the various pricing policies that are implemented. Note that this matter is not specific to Reunion Island. However, it is reinforced by the fact that all the local water utilities apply Increasing Block Tariffs, the proper calibration of which is complex.
- 2 Need to invest in infrastructures with** (1) the improvement of the efficiency of the water supply networks and (2) the management of climatic risks. The financing of these investments and the maintenance of the related infrastructures (that have an impact on the cost of the service) require a sound revision of the tariff scales to secure a sustainable recovery of costs.
 - a. On network quality** - The performance of Drinking Water networks is poor: the average rate of return is 62% and varies from 23.3% to 81.3% depending on the city. According to experts, the main causes of this poor performance are the aging of the pipes (a third of the networks are over 30 years old), poor pressure

management and the rugged terrain of the Island which making it difficult to locate leaks and implement interventions. Efforts aimed at improving the performance of the Drinking Water distribution network have been made over the past ten years, with an environmental gain of around 20 m³ per year and per subscriber. These efforts are set to continue. Public sewerage systems are recent and up to date. However, there are concerns about the quality of individual sewerage systems (according to operators, the stock is old with 70% of installations not up to standard). This raises the question of whether the island's treatment capacity should be developed further, particularly with the extension of networks now taking place in scattered housing areas.

- b. On the impact of climate change** Models simulating the effects of climate change conclude that winter droughts will become more severe, with a reduction in available resources of up to -50% in certain regions of the island. There are also fears of reduced aquifer recharge due to the northward shift of cyclone tracks (which would be more intense but less frequent). Since most of the groundwater (which is currently exploited) is located on the coast, maintaining the current level of abstraction risks salinization of this water mass (saline intrusion phenomena have already been observed for about ten years in the western and southern sectors of the Island).

- 3 French "Notre" law until 2020**, the management of drinking water and sanitation services was the responsibility of the cities. From 1 January 2020, it is the inter-municipalities responsibility, with 5 authorities organizing the service (compared to 24 previously). One difficulty is that tariff equalization will have to be implemented in the coming years, for all the member towns of the same intermunicipal authority, with some municipal networks that are of very different quality. It follows some induced monetary transfers within the inter-municipal unit that will have to be measured.
- 4 High domestic water consumption levels** with probably significant overconsumption, in a context where the price of water is low, the poverty rate is high and the willingness to pay for water and (especially) sanitation seems to be low (for a large part of the population). These high consumptions fuel a risk of chronic deficit in the West and South regions of the Island (which is set to become more acute with the expected effects of climate change). The low willingness to pay for water jeopardizes the financial sustainability of the system (significant burden of unpaid bills).

Note: According to some local stakeholders, part of the population does not understand why they must pay for water and, above all, for collective sanitation, the development of which has led to a near doubling of the water bill. This reluctance would be due to (i) a poor perception of the benefits of the drinking water service, reinforced by the tropical nature of the natural environment ("water is everywhere"); (ii) almost free local public services (canteen, transport, education, etc.) from which a large part of the population benefits, in this particular case poor households which represent 40% of the population, and who therefore do not understand why the same does not apply for drinking water and sanitation services; (iii) the legal context which

prohibits water cuts and flow restrictions; (iv) the poor quality of the service in some areas with (frequent) disruptions (cuts, water unfit for consumption). A significant proportion of unpaid bills may also be recorded, in some specific areas, which can jeopardize the financing of the service.

Besides, Reunion Island is also concerned with an Ecological risk (directly linked to anthropogenic pressures) and some pollution problems linked to the various uses (domestic, agricultural and industrial) of water resources. In particular:

- During low water periods, surface catchments may not respect instream flows, which disrupts the proper functioning of ecosystems (mainly in the west and south of the island).
- These excess withdrawals can also lead to saline intrusions in coastal aquifers, most of the groundwater that is accessible today is on the coast (saline intrusion phenomena are mainly observed in the western and southern sectors). This salinization leads not only to environmental degradation but also to a risk to the sustainability of abstraction capacities.
- According to regulatory monitoring, the quality of surface water is degraded with just over 40% of the stations being in poor chemical condition and 20% having a high threshold of matter in suspension. Besides, 30% of groundwater stations are classified as being in poor condition. The latter are mainly located in the western region of the island.

As stated by the local water agency, the sustainable development of Reunion (with the funding of actions required to protect water resources and eco-systems) questions the pricing of public water and sanitation services. It is noticed: 800 M€ of needs over the next ten years; €400 million in programming capacity for operators over a 6-year cycle, including €160 million in solidarity funding, €45 million in pooled funding in the basin, €196 million in self-financing to be mobilized.

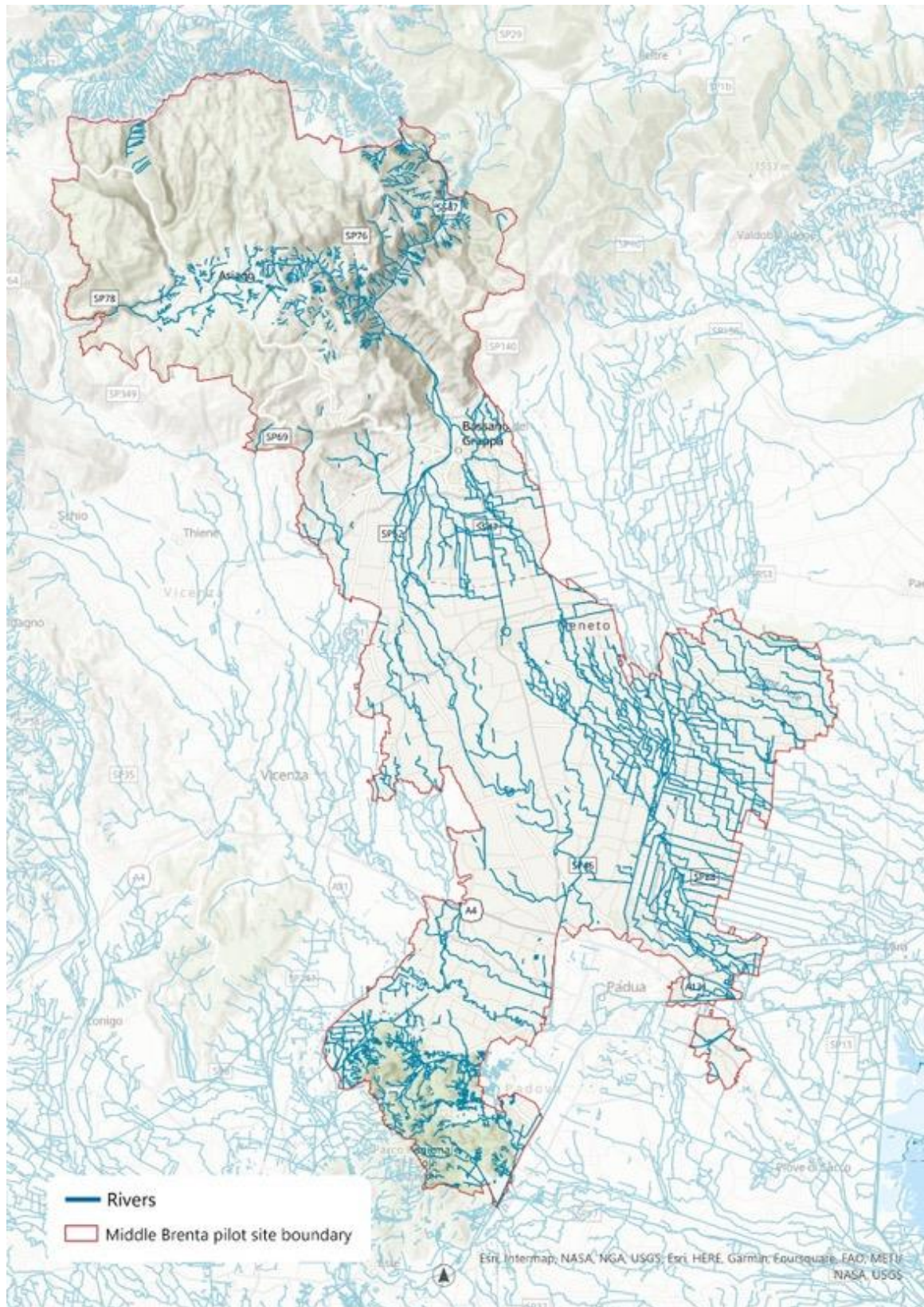


Figure 15: Pilot sites 2: Brenta map - Rivers

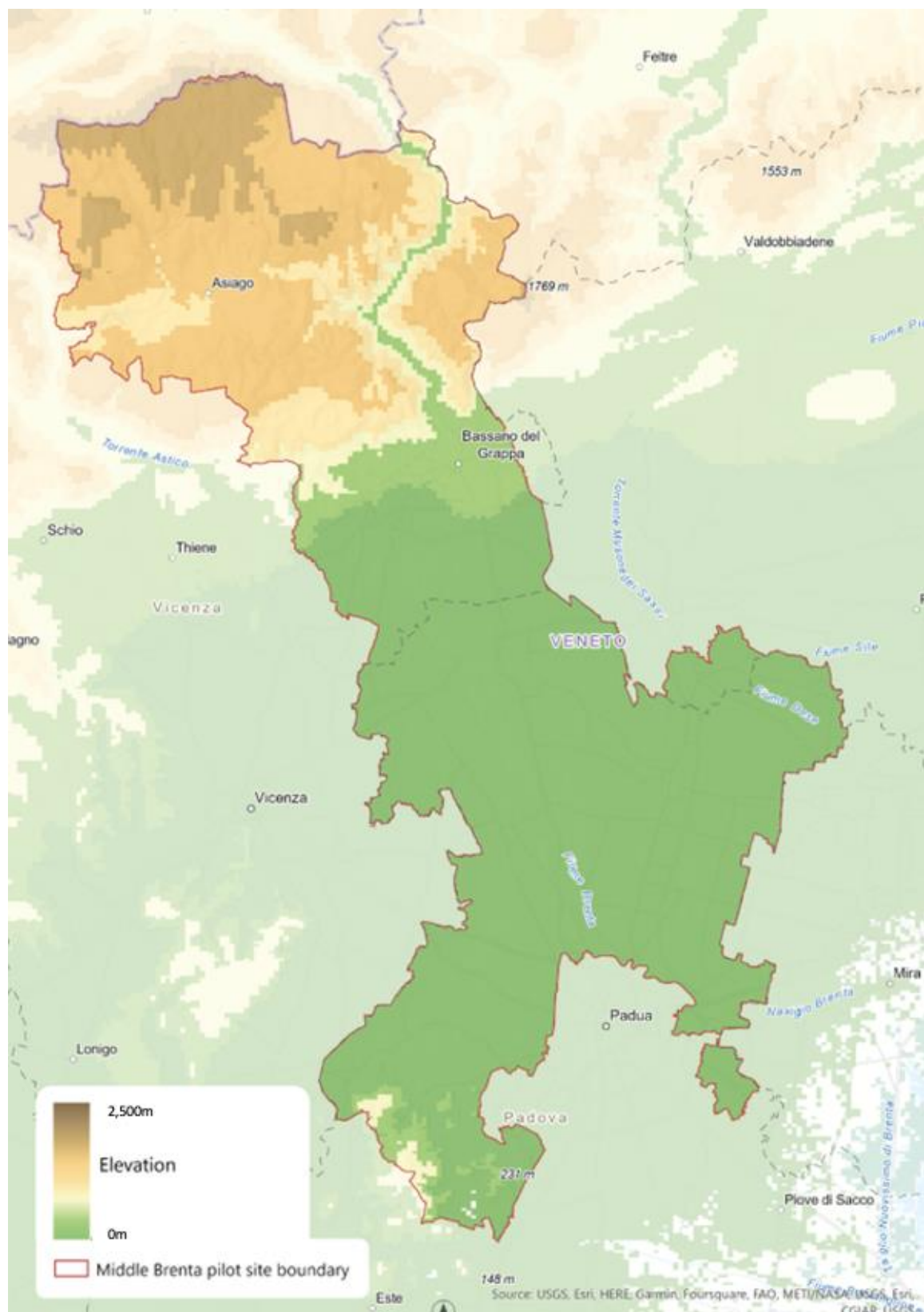


Figure 16: Pilot sites 2: Brenta map - Elevation

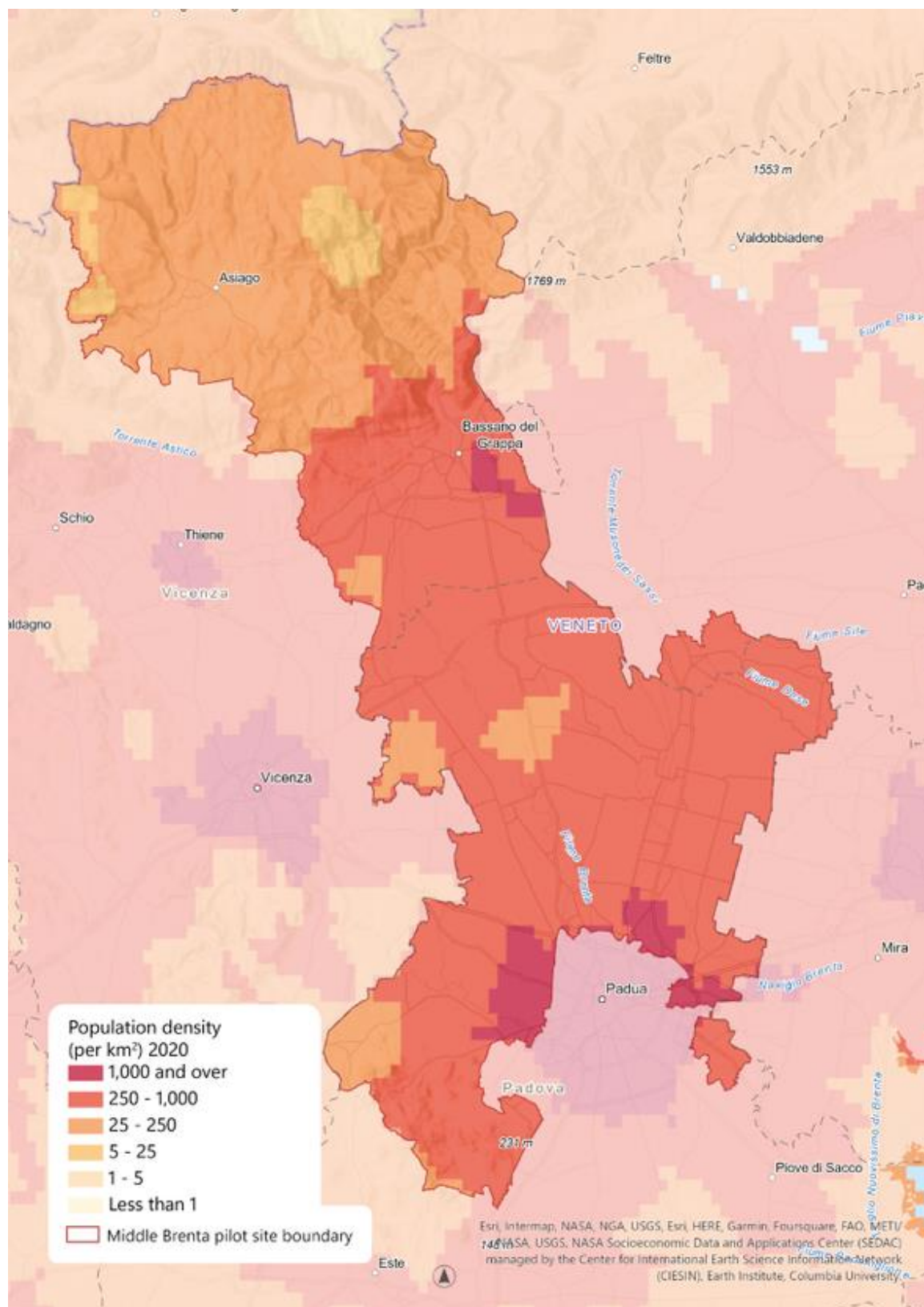


Figure 17: Pilot sites 2: Brenta map - Population

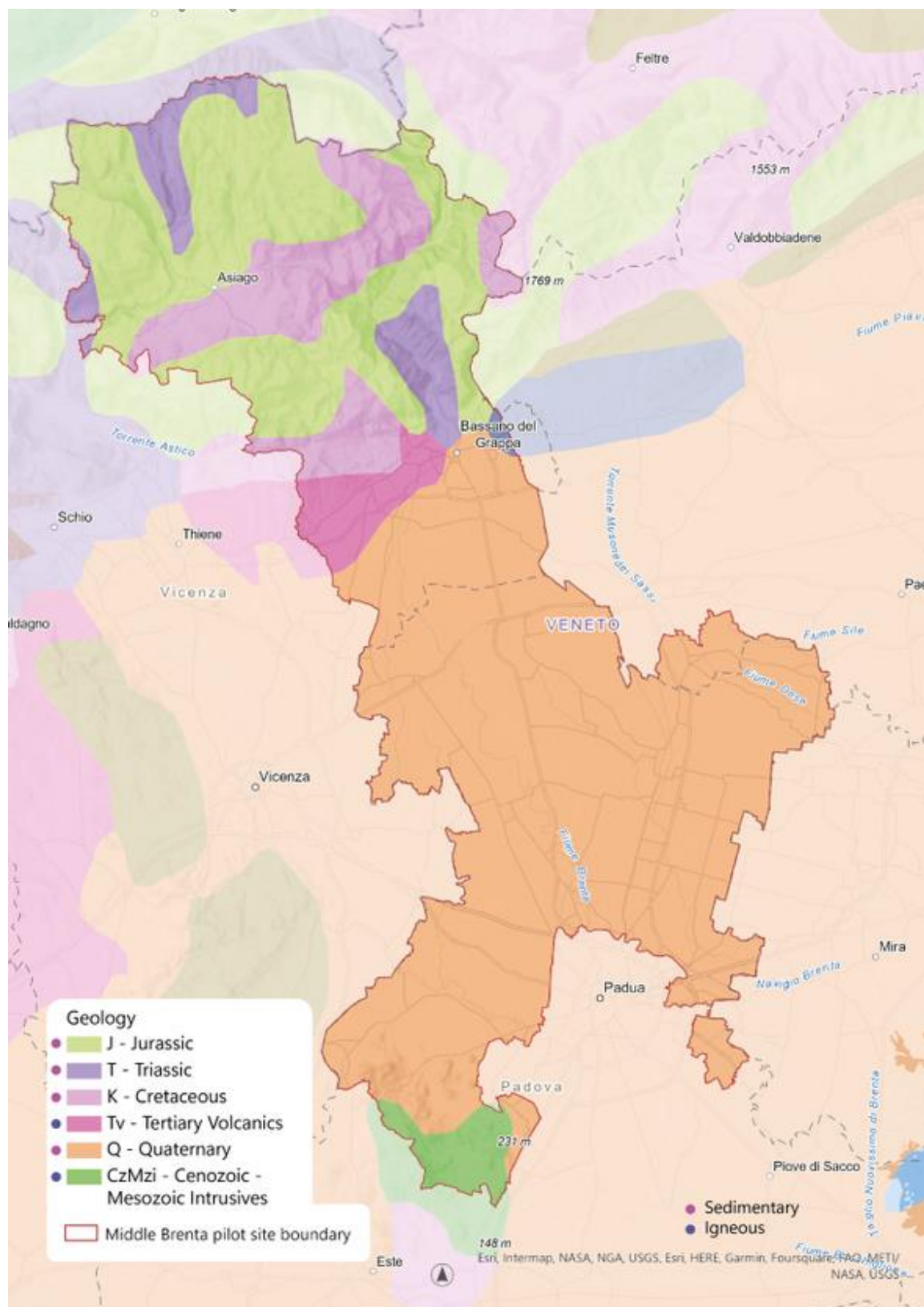


Figure 18: Pilot sites 2: Brenta map - Geology

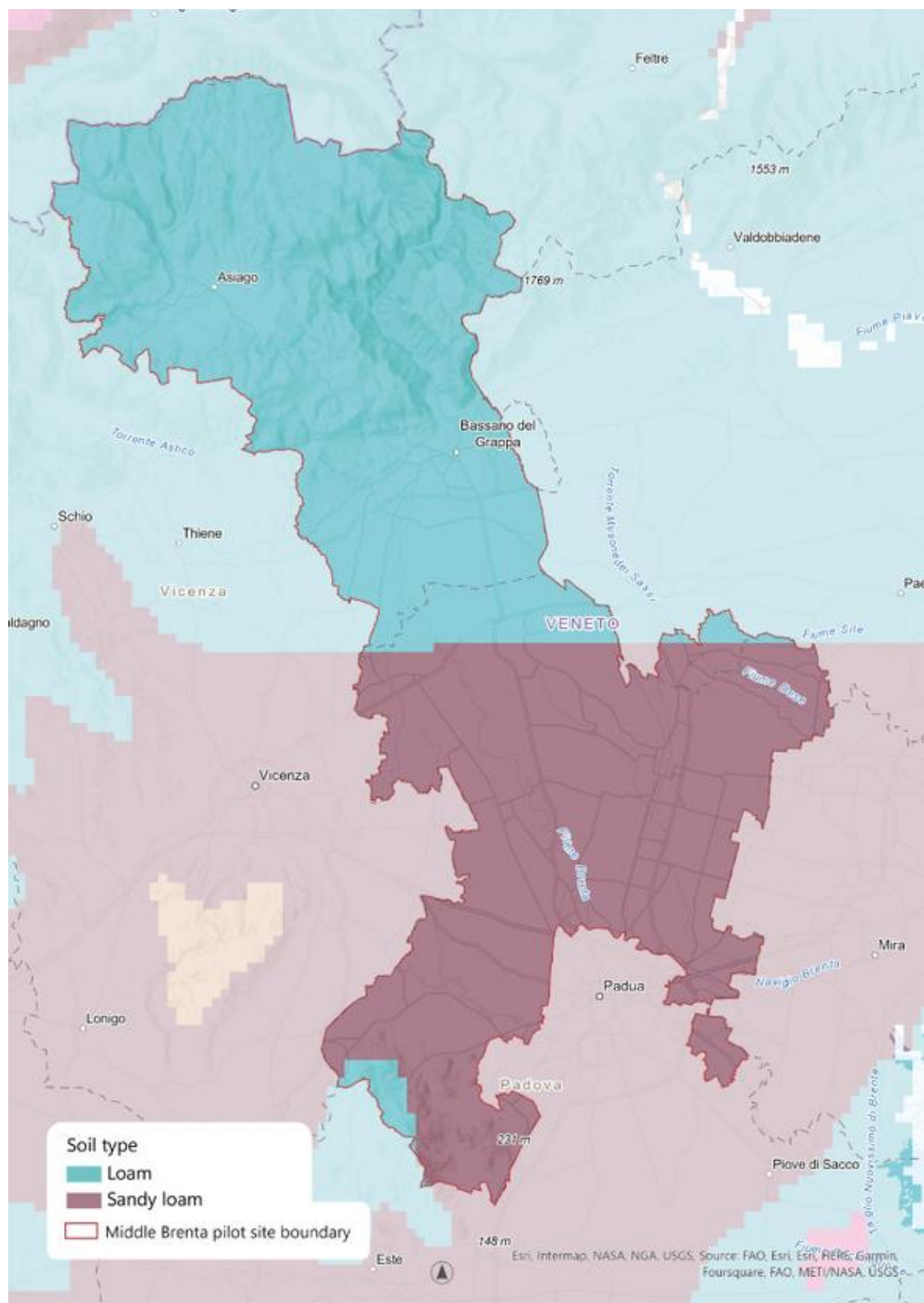


Figure 19: Pilot sites 2: Brenta map - Soil

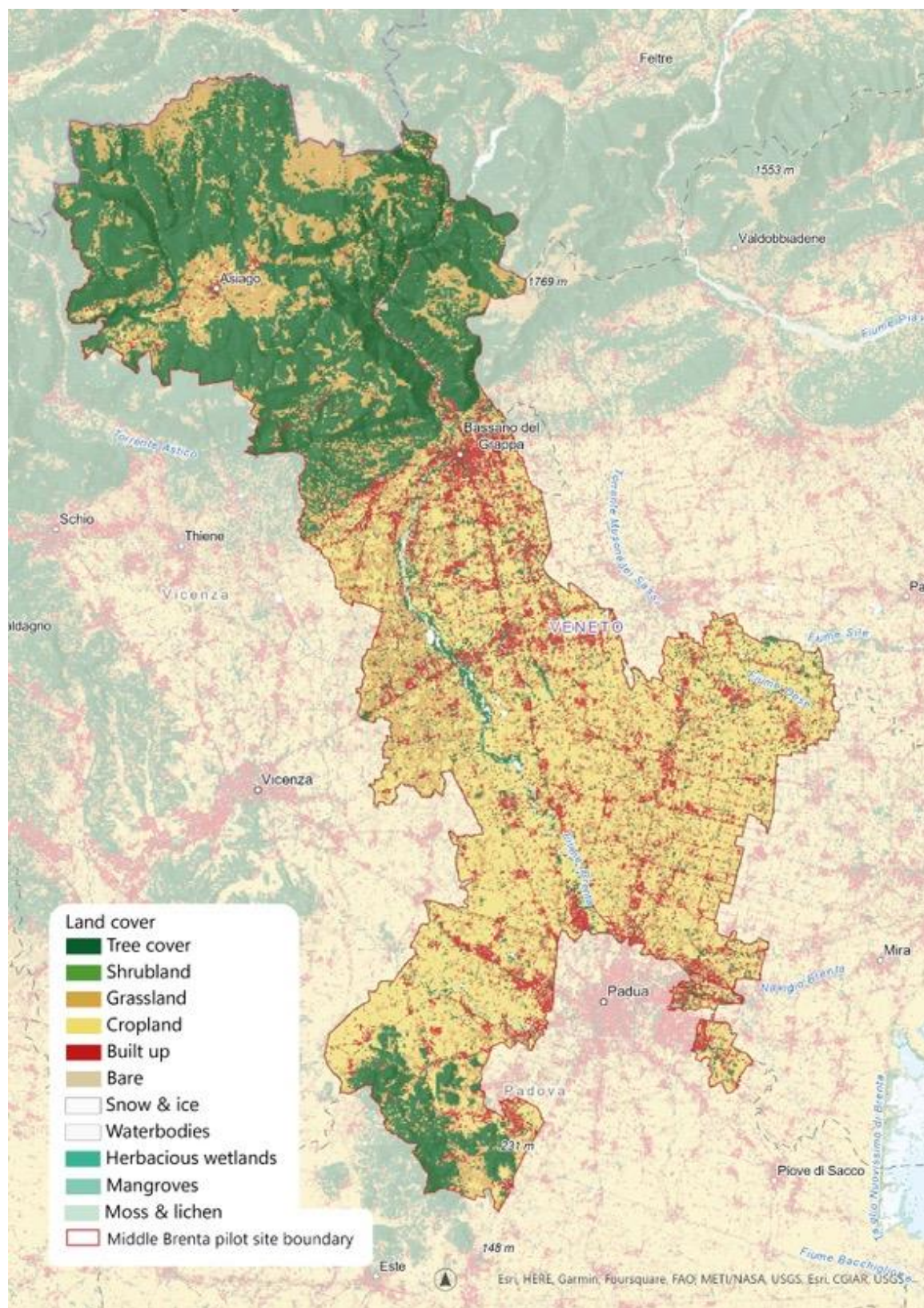


Figure 20: Pilot sites 2: Brenta map - Land Cover

4.2 Description of the area

The pilot site coincides with the Natura 2000 Site “Grave e Zone Umide della Brenta”, located along the middle part of the Brenta River in the Veneto Region, North-Eastern Italy. The site plays a key role in the drinking water supply, being one of the most important sources at the regional level, with a potential withdrawal of more than 2,500 litres per second. High water abstraction from the aquifer, severe droughts imposed by climate change, anthropisation, pollution, high use of the site for recreational purposes and lack of governance represent a risk, on the one hand for water quality and conservation, and on the other one for biodiversity.

To overcome these problems and enhance the territory and resources of the Brenta River, a local partnership was activated, and the LIFE Brenta 2030 project was launched in 2019, co-financed by the European Commission. It aimed at establishing an innovative Payment for Ecosystem Services (PES) for the protection of biodiversity and water conservation while solving the lack of management through implementing a good governance system of the Natura 2000 site. The innovative financing scheme applies Article 9 of the EU Water Framework Directive (WFD, 2000/60/EC) and the “polluters/users pay” principle, allowing the internalization of the Environmental and Resource Costs (ERCs) of drinking water consumption within the tariff of the drinking water system.

While a concrete governance improvement and a first test of ERCs implementation (first time in Italy) were successfully accomplished within the LIFE experience, the InnWater project is the right occasion to:

- Strengthen the innovative financing scheme (ERC costs) and make it a consolidated mechanism in the drinking water sector to fund nature-based solutions from which biodiversity can also benefit.
- Explore the possibilities also to implement it in other contexts (InnWater pilot sites as a priority) or water sectors (e.g., irrigation, hydropower). + mineral waters
- Network with the other InnWater pilot sites to continue improving local water governance.
- Improve communication with the drinking water users and make them aware of the ERC component of the tariff.

4.3 Key stakeholders and state of engagement

At the regional level:

- Autorità di Bacino Distrettuale delle Alpi Orientali (river basin management authority)
- Veneto Region
- Veneto Acque
- Veneto Agricoltura
- U.O. Genio Civile (Padova, Vicenza)
- U.O. Servizi Forestali (Padova, Vicenza)

At the catchment level

- Consiglio di Bacino Brenta (drinking water board)
- ETRA (water utility)

At the local level

- Consorzio di Bonifica Brenta (irrigation board)
- 15 local municipalities (Bassano del Grappa, Nove, Cartigliano, Tezze sul Brenta, Pozzoleone, Cittadella, Carmignano di Brenta, Fontaniva, Grantorto, Piazzola sul Brenta, Campo San Martino, San Giorgio in Bosco, Curtarolo, Limena, Vigodarzere)
- Farmer associations (Coldiretti, Confagricoltura, CIA)
- Environmental associations (Cooperativa Sociale Jonathan, Legambiente, ...)
- Fishermen associations (La Sorgente s.m.p.s., Associazione Bacino Acque Fiume Brenta)
- Landowners
- Private enterprises
- Drinking water users
- Recreational users

Table 1: Table of Brenta stakeholders by organisation name, role and state of engagement

| Level | Organisation Name | Type / Role | State of engagement |
|-----------------|--|---|--|
| Regional level | Veneto Region – U.O. Struttura regionale Parchi e biodiversità | Regional government – biodiversity department | They participated in numerous meetings organised by the LIFE Brenta 2030 project and collaborated with the partners to improve the governance of the Natura 2000 site |
| | Veneto Acque | In-house company of the Veneto Region for the design and construction of the Structural Model of the Veneto Aqueducts (MoSAV) | LIFE Brenta 2030 partner |
| | Veneto Agricoltura | Regional agency for agriculture and forests | LIFE Brenta 2030 partner |
| | U.O. Genio Civile (Vicenza, Padova) | Civil Engineers: a regional office which operates on a provincial basis with hydraulic and water police functions | They authorised the conservation interventions promoted by the LIFE Brenta 2030 project |
| | U.O. Servizi Forestali | Regional office which operates on a provincial basis with forest conservation functions | They authorised the conservation interventions promoted by the LIFE Brenta 2030 project; they first requested and then accepted inputs from the LIFE partnership on how to better manage forest ecotonal habitats along the Brenta river |
| Catchment level | Consiglio di Bacino Brenta (CBB) | Drinking water management authority | InnWater partner (pilot site leader); LIFE Brenta 2030 partner |
| | ETRA | Water and waste utility | LIFE Brenta 2030 coordinator; ETRA is the in-house company of the CBB |
| | Autorità di Bacino Distrettuale delle Alpi Orientale | River basin management authority | They authorised the conservation interventions promoted by the LIFE Brenta 2030 project |

| | | | |
|-------------|---|--|--|
| Local Level | Consorzio di Bonifica Brenta, Consorzio di Bonifica Acque Risorgive | Irrigation Boards | They were involved in some lobby meetings of the LIFE project; they authorised the conservation interventions promoted by the LIFE Brenta 2030 project |
| | Comuni di Bassano del Grappa, Nove, Cartigliano, Tezze sul Brenta, Pozzoleone, Cittadella, Carmignano di Brenta, Fontaniva, Grantorto, Piazzola sul Brenta, Campo San Martino, San Giorgio in Bosco, Curtarolo, Limena, Vigodarzere | Local municipalities | LIFE Brenta 2030 cofinancers; they were involved in the governance process of the project, where a shared vision was reached and a governance model for the Natura 2000 site defined |
| | Coldiretti | Farmer association | They gave external support in some action promoted within the LIFE project (farmers involvement) |
| | CIA | Farmer association | They participated in some meetings / workshops of the LIFE project |
| | Cooperativa sociale Jonathan | Socio-environmental cooperative | They supported the LIFE project by activating side projects |
| | Legambiente | Environmental association | Mapped and engaged as a local stakeholder during the LIFE project |
| | La Sorgente | Fishermen association: they often work as a “river eye” monitoring the quantity and the quality of water, and the conservation state of the aquatic ecosystems | They were involved in designing a side project on fish restocking |
| | Bacino Acque Fiume Brenta | Fishermen association | None |
| | | Landowners | Involved those interested by the conservation interventions of the LIFE project |
| | | Farmers | Involved those interested by the conservation interventions of the LIFE project and those operating inside the water safeguard areas |
| | | Private enterprises | Some local enterprises decided to cofinance the LIFE project |
| | | Drinking water users | A monitoring questionnaire was addressed to that target group during the LIFE experience to investigate the ERCs perception |
| | | Recreational users | They were the target of many communication actions and events |

4.4 Expected pilot site community group description

The Pilot Site Community Group (PSCG) is expected to involve step by step the stakeholders listed in the previous table: from the LIFE partners and most relevant institutional stakeholders (e.g., Irrigation Board, municipalities) to the more specific subjects to involve in specific meetings or webinars. The PSCG will mostly be a catchment / local working group, coordinated by the Consiglio di Bacino Brenta (pilot site leader) with the support of Etifor. Being the challenges regarding the pilot site sometimes very sectorial or specific, Consiglio di Bacino Brenta and Etifor will engage with the stakeholders also in smaller groups (up to 1:1 if needed for the purpose of InnWater), but the project will facilitate a broader involvement of all the PSCG at the same time.

4.5 Local engagement challenges

The main challenge is represented by the involvement of the Irrigation Board (Consorzio di Bonifica Brenta) - only partially involved so far in the governance meetings. The entity is currently defending its “status” and the traditional management practices against the need to save water and a clear planning direction at both national and regional levels. Hence, if the effort of the PSCG will be to explore the possibilities to implement ERCs in other water services (including irrigation), a proper way to engage that stakeholder needs to be studied and the engagement must be effective.

Another obstacle is represented by the U.O. Genio Civile (Regional Civil Engineers) during the authorization phase of the conservation intervention promoted by the LIFE Brenta 2030 project, which proved to be a closed-minded entity, mainly oriented to manage hydraulic aspects in a very sectorial and non-integrated way – always putting hydraulic safety first – and sometimes distrustful of innovative experiences and water management approaches. If the InnWater project wants to bring innovation in water and river management, it also needs to include the U.O. Genio Civile in the PSCG.

Speaking about communication, the pilot application of ERC costs in the water tariff (LIFE Brenta 2030 output) can be improved, and a solution needs to be studied and implemented with the water utility ETRA. In this perspective, the InnWater project has the development of an app (or platform) in its pipeline.

5 PILOT SITE 3 - FIGUERES (SPAIN)

Each Pilot Site has been mapped to show key elements such as rivers, geology, soils and land use.

5.1 Pilot Site 3 Figueres maps



Figure 21: Pilot sites 3: Figueres map - Roads and cities

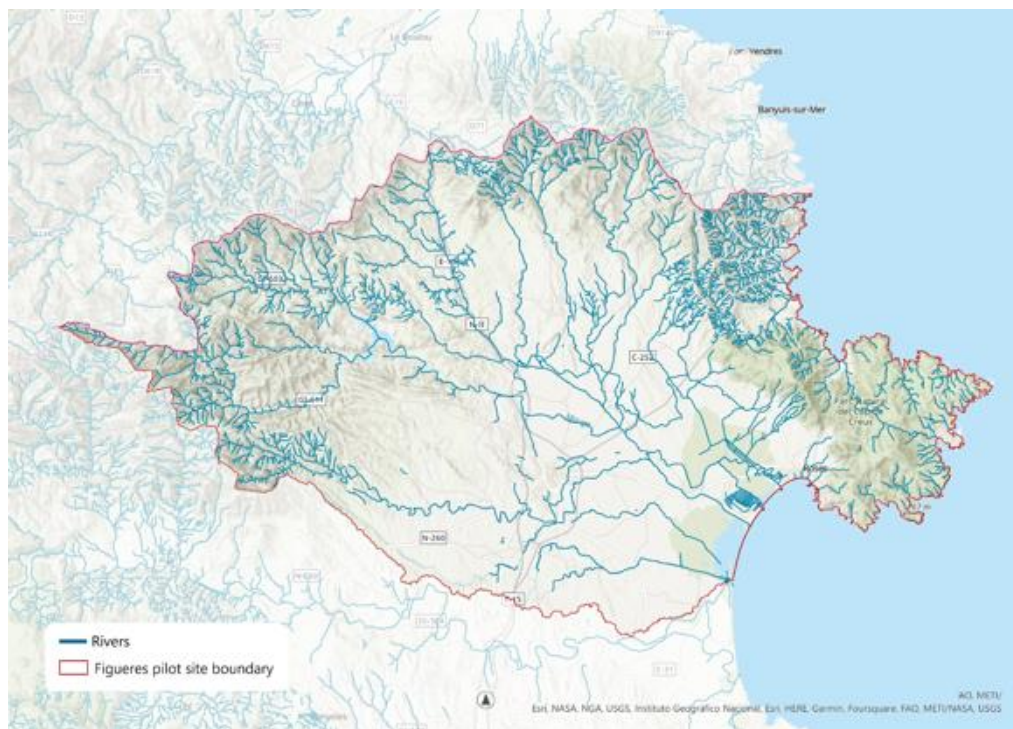


Figure 22: Pilot sites 3: Figueres map - Rivers

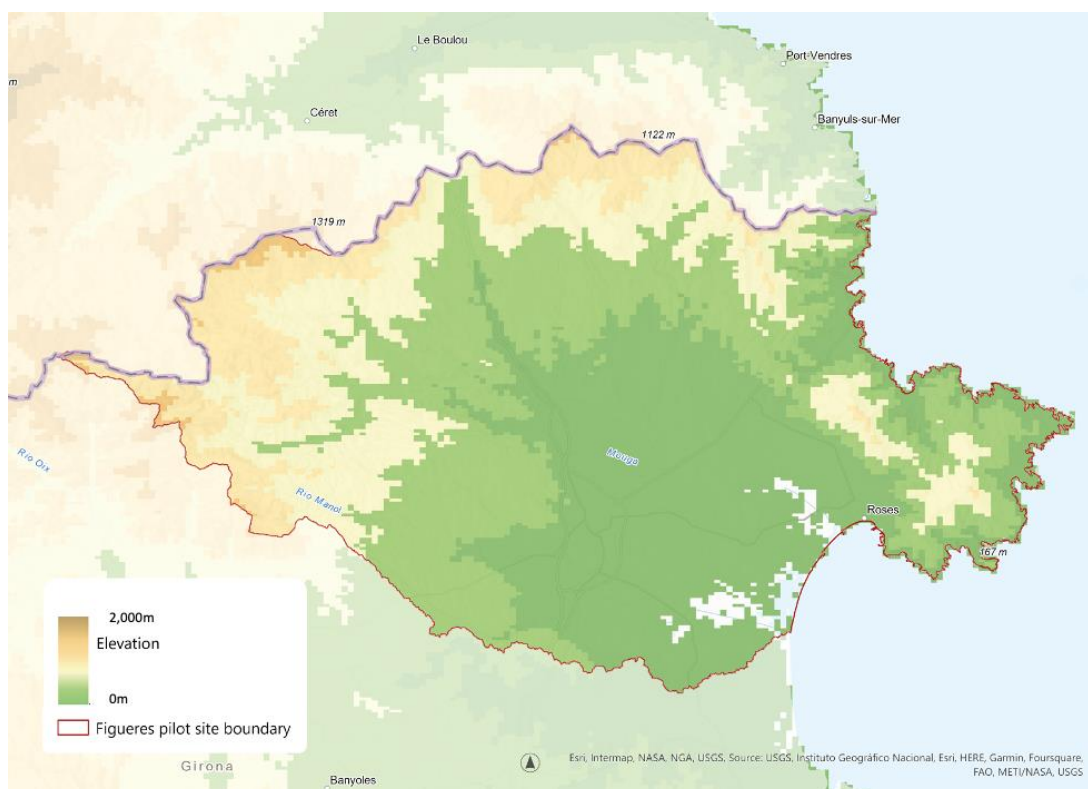


Figure 23: Pilot sites 3: Figueres map - Elevation

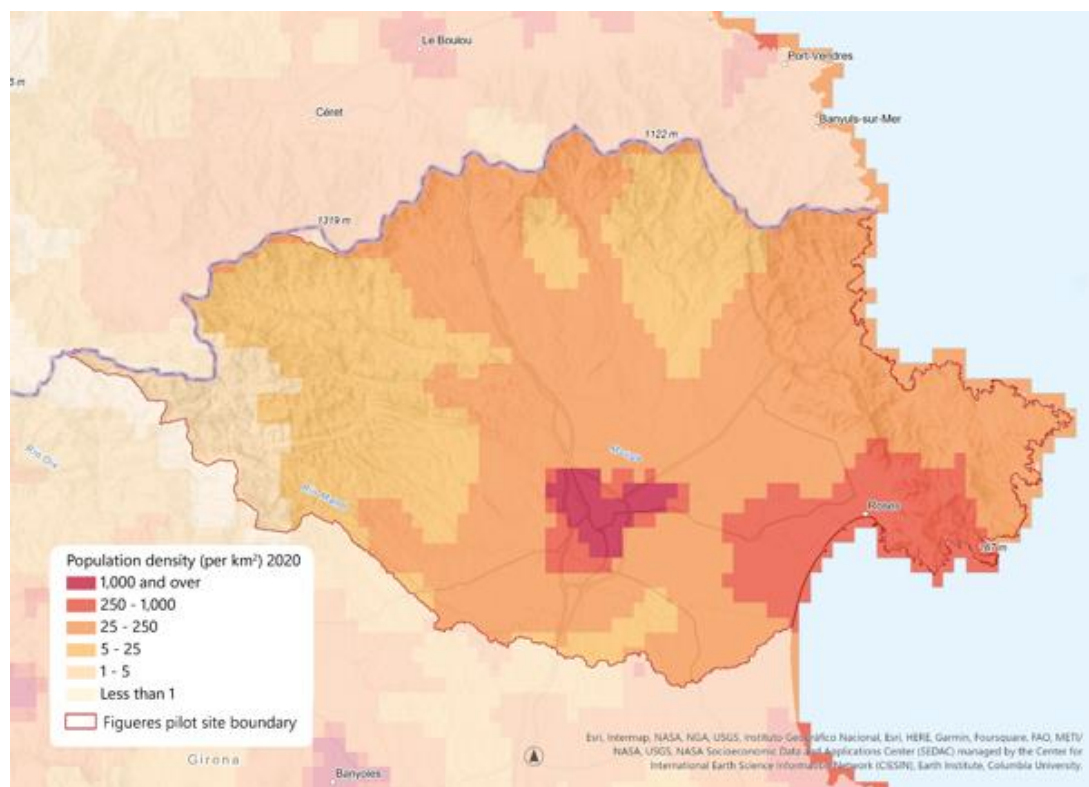


Figure 24: Pilot sites 3: Figueres map - Population

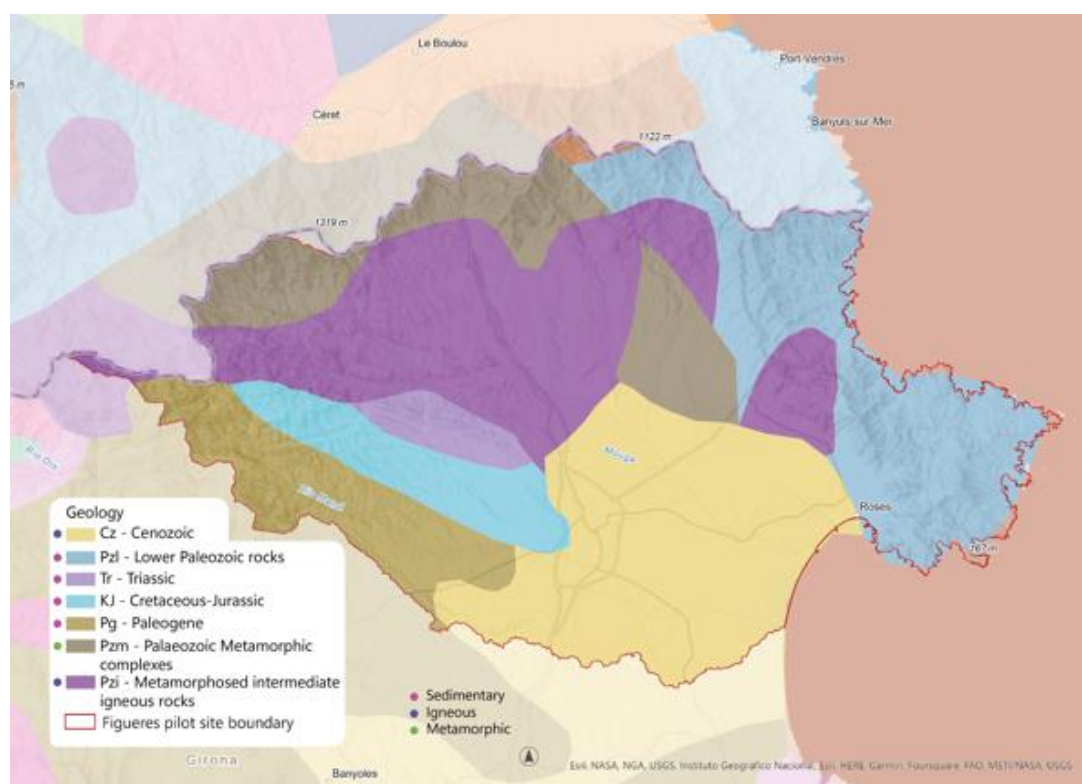


Figure 25: Pilot sites 3: Figueres map - Geology

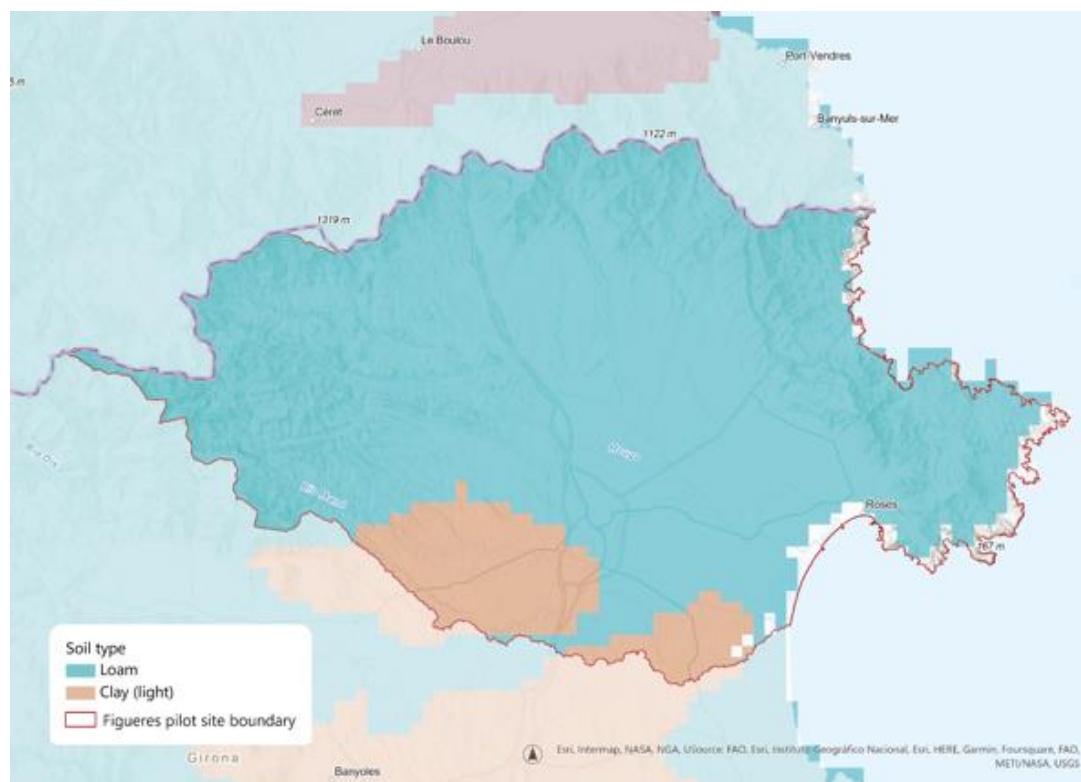


Figure 26: Pilot sites 3: Figueres map - Soils

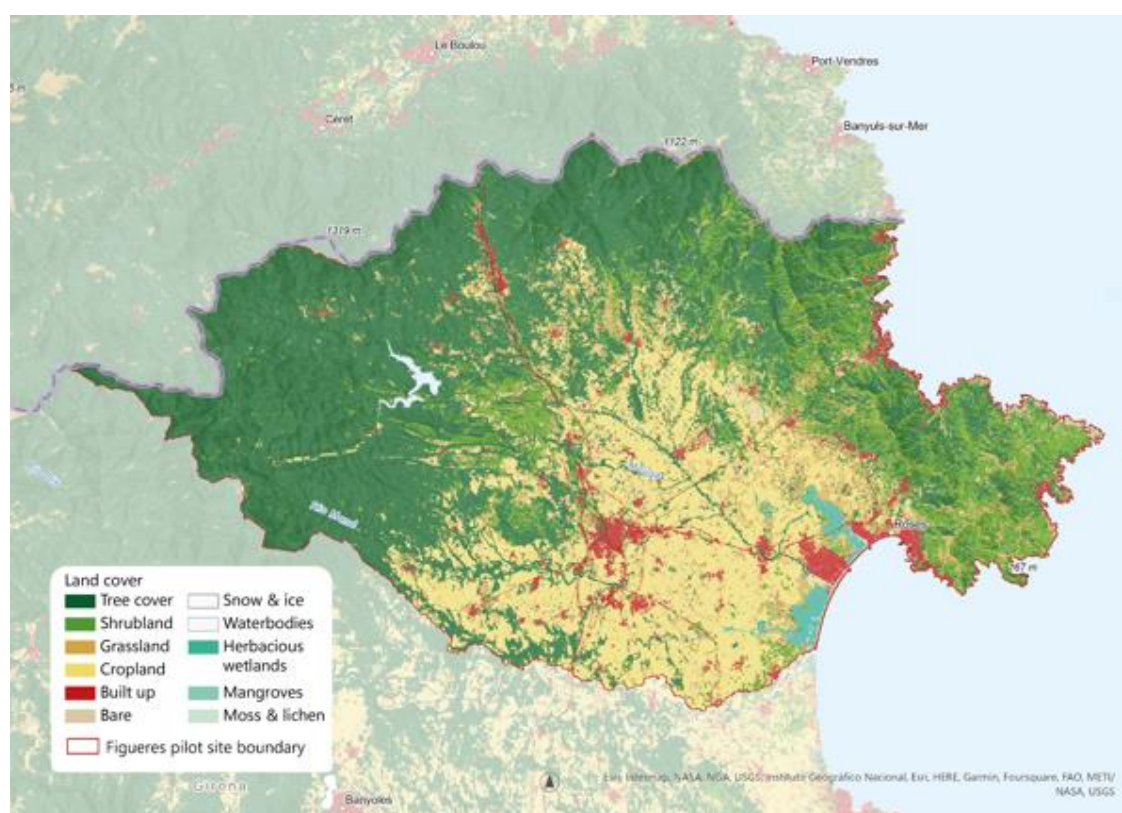


Figure 27: Pilot sites 3: Figueres map - Land Cover

5.2 Description of area

These are the limits of the Muga watershed. To the east, it is bordered by the Mediterranean Sea, to the north by the French border and the mountains of the Serra de l'Albera and the Serra de les Salines and to the west and south by other river basins.

The rivers map (Figure 22), shows the basin of the Muga river, as well as the small water courses that are discontinuous or non-permanent rivers, which only carry water when it rains or because of human input from agricultural canals or sewage treatment plants. These small water basins are managed together with the Muga basin. The rivers of the watershed and the two reservoirs. The water supply system is based on the Darnius-Boadella reservoir in the Muga basin (with a capacity of 61 hm³ of water) which supplies water to most of the population and the main uses, especially agriculture. The Portbou swamp is small (1 hm³) and supplies water to the municipality.

The population of the basin is 127,836 inhabitants⁴. Of these, 61.5% are concentrated in just 3 municipalities: Figueres, Roses and Castelló d'Empúries. The rest of the population is distributed in small towns (some of them with less than 1000 inhabitants) scattered throughout the territory.

This territory has historically been a crossing point for north-south and east-west communications, since the time of the Romans. The Via Augusta passed through here. Currently, the main road and rail infrastructures that connect the Iberic peninsula with Europe pass through it (AP-7, N-II, conventional train, high-speed train). From the point of view of nature and biodiversity, we should mention the Aiguamolls de l'Empordà Natural Park, the Albera Nature Reserve and the Salines-Bassegoda natural area, each with its own figure of protection. The Aiguamolls de l'Empordà Natural Park depends for its survival as a wetland on the contributions of water from the Muga basin.

5.3 Description of water management in La Muga basin

Figueres is a city of 47,000 inhabitants located north-east of Catalonia right next to the border with France. It is a city of services, tourism, public administration and acts as the capital of the Alt Empordà region. From a hydrological and water supply point of view, the city of Figueres is part of the Muga basin that collects the surface waters of an area of 800 km². The annual contributions of water exceed 180 hm³. Of these, 35% of the contributions are regulated by the Darnius-Boadella reservoir which supplies water to Figueres and the main cities and towns in the basin. The contribution regime is extremely irregular as it depends on the rainfall regime. In the climate change scenarios, there are forecasts of reductions in water contributions of 13% in the 2039 horizon, although, in secondary river courses of the basin, they may reach 20%.

The main use of water is agriculture since there are 11,200 irrigable Ha in the basin. Water use for irrigation is concentrated in the summer months, which greatly affects the water management of the Darnius-Boadella reservoir. The management of water for irrigators corresponds to two communities of irrigators. The one on the left bank of the Muga with more

⁴ <https://www.idescat.cat/pub/?id=censph&n=451&geo=mun:171714&lang=en>

than 3,000 Ha irrigated, and that of the right bank of the Muga with 1,800 irrigated Ha. There are also 6,400 Ha of irrigated land scattered throughout the territory, irrigated mainly with wells.

In 2018, the annual water consumption in the basin as a whole was 83.96 hm³, of which 68.37 hm³ correspond to agricultural use, 14.38 hm³ for population supplies and 1.21 hm³ for other industrial uses. Thus, 81.4% of consumption is for agricultural use, 17.2% for population supply and 1.4% for other industrial uses. Agricultural and population supplies are strongly seasonal, having the peak of consumption in summer, given the seasonal nature of irrigated crops and the coastal tourist area.

The Darnius-Boadella reservoir plays a key role in the supply system. With a maximum capacity of 61 hm³, depending on the year, it can supply half of the basin's water consumption. This means that the system has a huge dependence on this reservoir and that in years of drought, the swamp does not have enough water reserves and tensions are generated in the system. In addition to reservoir water consumption, groundwater and reused water are also used. In the case of groundwater, there are two aquifers in the fluvial-deltaic area, and it has been used for agricultural and population uses. However, historically, there have been problems of overexploitation, marine intrusion, and pollution from agricultural and industrial activity, which has made the use of groundwater secondary and mainly in situations of drought.

To improve water management in the Muga basin, measures have been proposed such as the reuse of water from sewage treatment plants in the municipalities of Figueres, Roses, Llançà and Cadaqués, which could reach 1.45 hm³ per year and the modernization of the agricultural irrigation system which could represent 6.2 hm³ annually. These measures are insufficient to avoid water scarcity but are a first step to reducing the pressure on the Darnius-Boadella reservoir.

5.4 Local Challenges

The main challenge that the Muga basin is facing is the scarcity and the water demand. Future scenarios with increasing demand and the impacts of climate change speak of an increase in the water deficit that could go from 17 hm³/year to 23-25 hm³/year in the long term. On the other hand, the basin must address the challenge of guaranteeing the maintenance of the ecological flows of the river courses, which is not currently being done. It is estimated that this would be achieved with the contribution of 57.9 hm³ annually.

In Catalonia, water planning and management are the responsibility of the Catalan Water Agency under the control of the Generalitat del Catalunya (regional government). The main planning document is the Catalan River Basin District Management Plan 2022-2027. There is also the Special Action Plan in the event of an alert and eventual drought, which regulates the measures to be taken in drought episodes. Finally, the Figueres City Council has a Drought Emergency Plan, which regulates actions in the municipality in drought situations.

There is also the challenge of river flood risk from unregulated effluent. In fact, the frequency and intensity of flooding have increased over the last 20 years.

5.5 Local ambition

At the decision-making level, there is only a dam de-watering committee, organised by the Catalan Water Agency, with the participation of the different town councils of the lower part (larger population) as well as the farmers on the left and right banks of the Muga.

The ambition of the InnWater project is to create a Local Water Forum involving the quintuple helix of stakeholders. The quintuple helix is an innovation framework involving interactions between education, economy, environment, society, and politics, for sustainable development⁵. Topics to be addressed are the diagnosis of water quality and quantity in the basin, how to increase availability (non-conventional resources and groundwater management), how to maintain ecological flows and how to work on better water management taking into account that each water use needs a different quality.

5.6 Key stakeholders specific to pilot sites and state of engagement

Currently, planning, management and decision-making about water in Catalonia depend on the Catalan Water Agency. However, at the basin level, other stakeholders that must be considered to implement new water governance models.

Thus, the key stakeholders at the level of the Muga basin to improve water governance are:

At the regional level:

- Catalan Water Agency. Entity under the control of the Generalitat de Catalunya and with competences in water planning and management throughout the Catalan territory.

At basin level (local):

- Alt Empordà County Council. Entity that brings together all the municipalities of the Alt Empordà region and, therefore, all those in the Muga Basin
- Town councils of the Muga basin
- Comissió de dessembassament de la Muga (dam de-watering committee). This commission is integrated by Catalan Water Agency, Figueres, Roses and Castelló d'Empúries municipalities and watering communities (left and right riverside of Muga). Their aim is to agree upon the de-watering from the Darnius-Boadella reservoir.
- Water supply companies. In particular:
 - Figueres de Serveis SA. Company under the control of Figueres City Council that supplies water to the city of Figueres and other surrounding municipalities.
 - Costa Brava Water Consortium. It supplies water to several municipalities in the basin.
- Irrigation communities on the right and left banks of the Muga. They manage water for agricultural irrigation.
- Agrarian associations. Especially Unió de Pagesos.
- Tourism and recreational sectors (associations)

⁵ Carayannis, E. G., & Campbell, D. F. (2010). Triple Helix, Quadruple Helix and Quintuple Helix Innovation Systems: Towards a Theory of Knowledge Capitalism Transdisciplinary Innovation and Sustainable Development. *Social Science Information*, 49(4), 715–736

- Industrial sector
- Natural Parks: Aiguamolls de l'Empordà, Albera ans Salines Bassegoda
- Environmental and conservationist entities. Especially IAEDEN (Entity for the study and defense of nature), Amics del Parc Natural dels Aiguamolls, Centre Excursionista Empordanès. Associació vies verdes de Girona.
- Neighbors associations. Federació de veïns de Figueres.
- Educative community: Green schools, environmental school
- Academia: University of Girona, University Autònoma of Barcelona, University of Barcelona, Eurecat, CSIC, and others.

5.7 Expected pilot site community group description

Until now, there have been no water governance experiences in the Muga basin that brought together the main stakeholders. The planning and management that have been carried out to date has been centralized through the Catalan Water Agency. Although there are governance experiences in other basins in Catalonia, this is not the case in the Muga basin. Therefore, the objective is to design a governance model that brings together all the stakeholders involved in an agile, practical and efficient structure. It is necessary to define this structure, the management model, its composition and its leadership.

5.8 Local engagement challenges

The main challenge is to manage water resources in a context of increased demand, climate change, increasingly severe drought episodes, and conflicts for the availability of water between different users. The current drought episode shows the tensions in the water supply system and that it is necessary to plan the resource in a water deficit scenario that will involve substantial investments and changes in current management.

6 PILOT SITE 4 - WESTCOUNTRY (UK)

Each Pilot Site has been mapped to show key elements such as rivers, geology, soils and land use.

6.1 Pilot Site 4 Westcountry maps



Figure 28: Pilot sites 4: Westcountry map - Roads and Cities

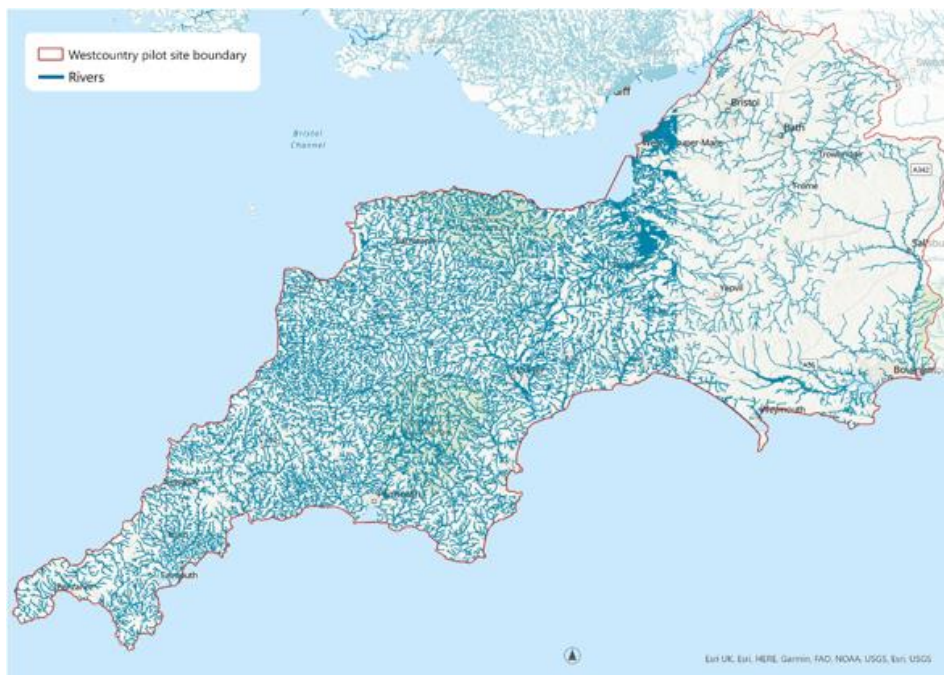


Figure 29: Pilot sites 4: Westcountry map - Rivers

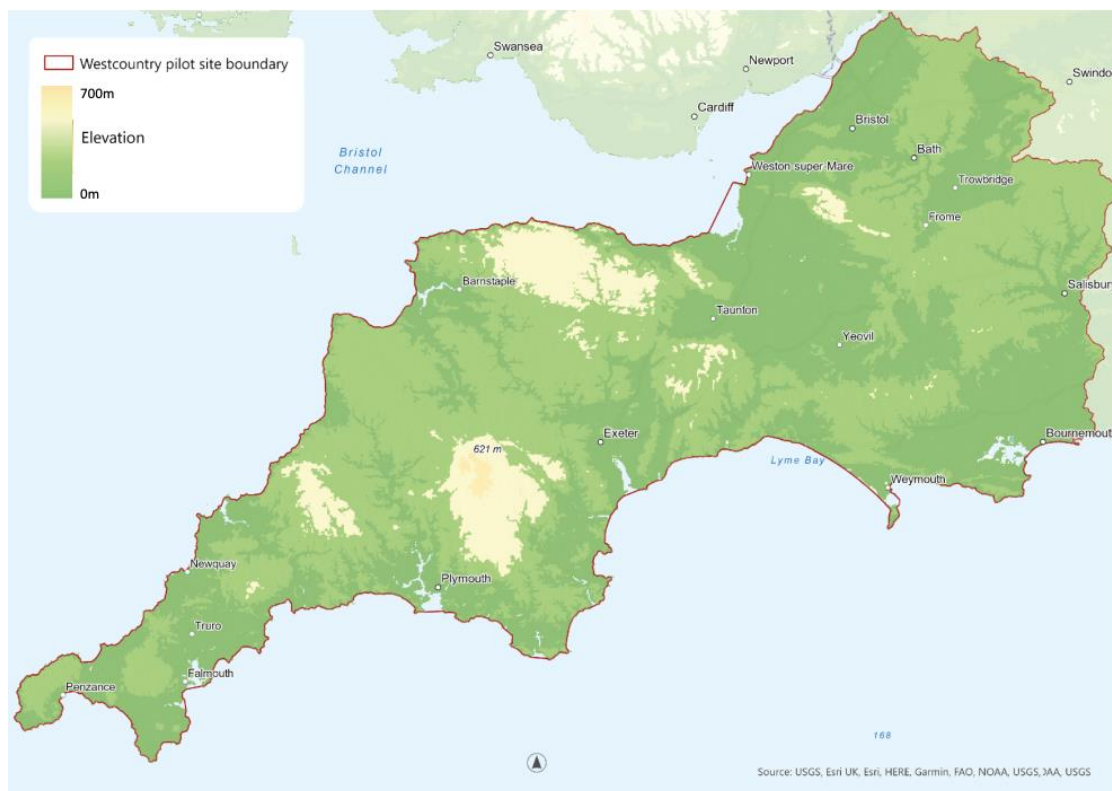


Figure 30: Pilot sites 4: Westcountry map - Elevation

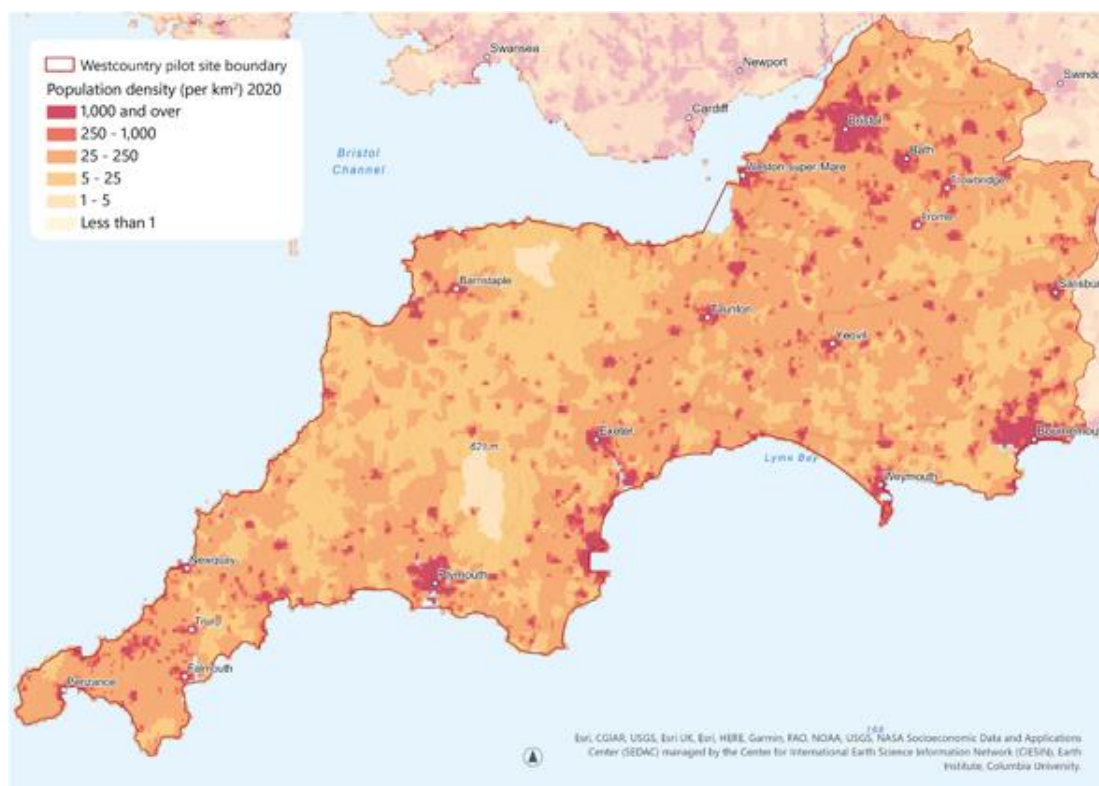


Figure 31: Pilot sites 4: Westcountry map - Population

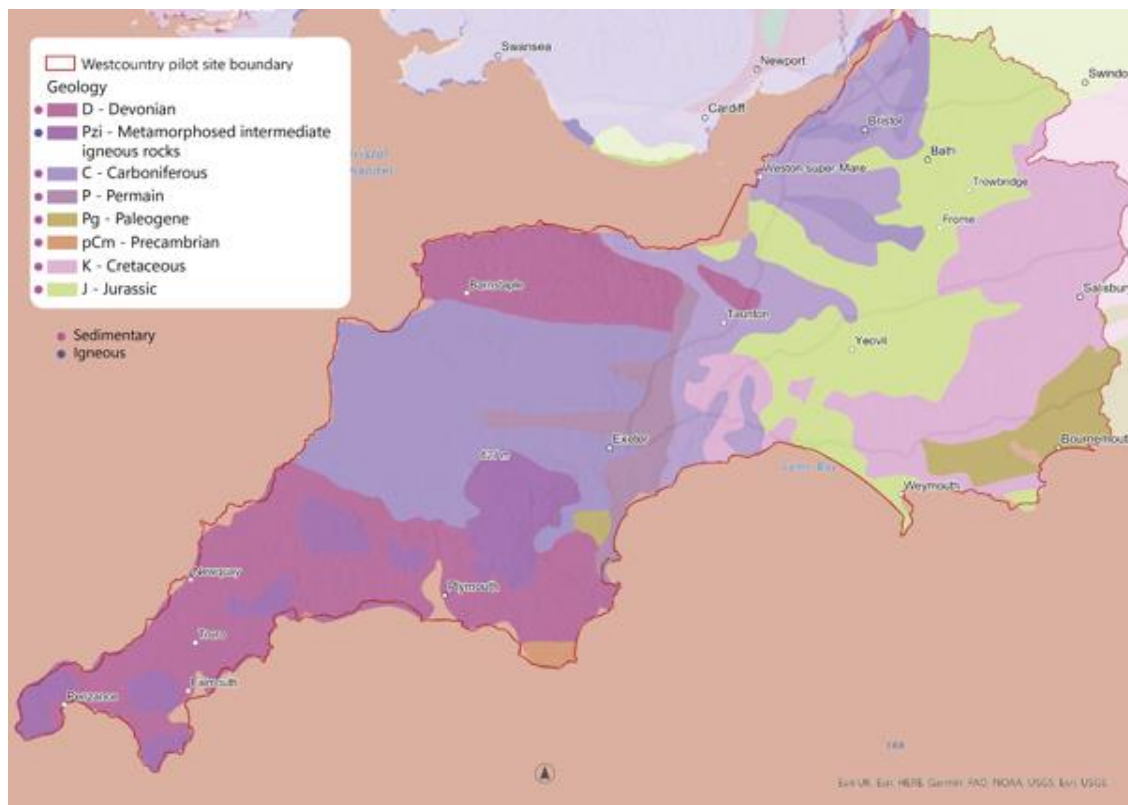


Figure 32: Pilot sites 4: Westcountry map - Geology

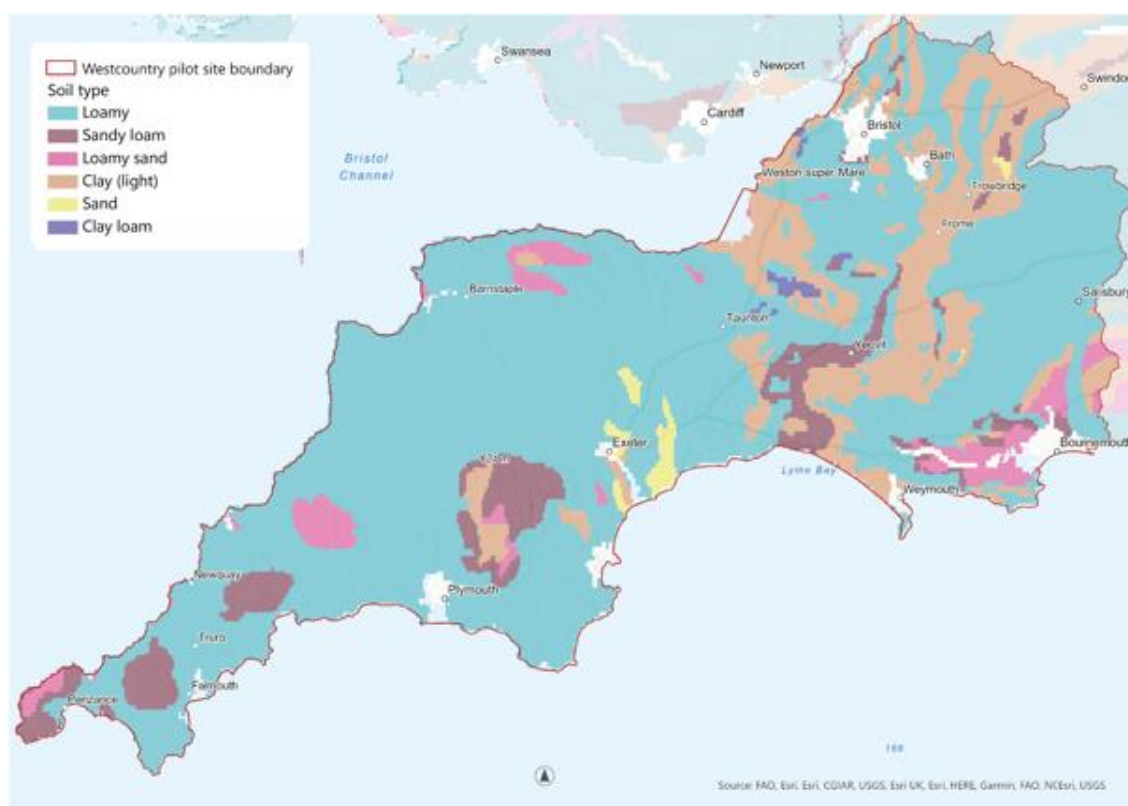


Figure 33: Pilot sites 4: Westcountry map - Soils

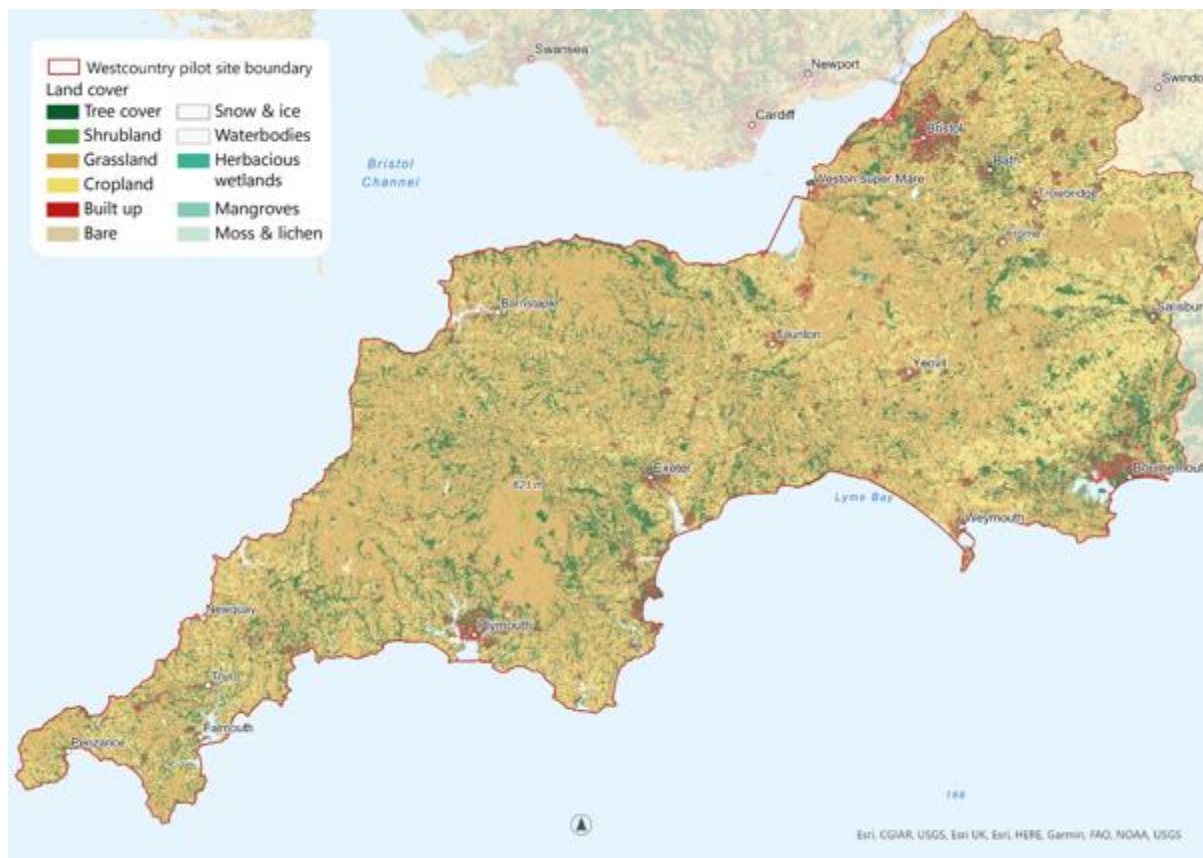


Figure 34: Pilot sites 4: Westcountry map - Land Cover

6.2 Description of area

The West Country Water Resources area covers the Western Peninsula of the United Kingdom from Bristol and Wiltshire down to Devon and Cornwall an area of 23,000 km² with a population of 4.7m people. The region contributes more than £100bn annually to the UK economy. Agriculture is important, with the livestock industry accounting for over £2bn, and there is an important dairy industry. The West Country area is one of five regional groupings to manage water quantity through the Water Resource Group. Although their main water governance challenge is water resources, recent predictions have suggested the region will be in deficit by 2050. There are considerable issues with the water quality, too, which significantly impacts treatment costs. This regional grouping is the largest common scale for water management whereas flooding, quality and biodiversity are all managed at smaller scales.

The community coordination of water quality under WFD through River Basin Management Plans is not as strong as it could be as Catchment Partnerships are not collated at a regional scale. There used to be a River Basin Liaison Panel covering the area, but this was disbanded in 2014. Through the InnWater project the Catchment Partnerships will be brought together in a Pilot Site Community to scale up community stakeholder issues and communicate them at various local, county, area and regional levels.

6.3 Key stakeholders specific pilot sites and state of engagement

In order to plan Integrated Catchment management, the Trust needs to work strategically across all four water sector areas (drought, flooding, pollution and aquatic biodiversity) at the following scalable levels:

At the regional level

- West Country Water Resources Group – Regional group covering the whole area

At area level

- South West Regional Flood and Coastal Committee covering the EA Wessex area
- Wessex Regional Flood and Coastal Committee covering the EA DCIOS area
- South West Water (including Bristol Water and Bournemouth Water)
- Wessex Water

At the county level

- Devon Local Nature Partnership - Hosted by Devon County Council
- Cornwall Local Nature Partnership - Hosted by Cornwall County Council
- Somerset Local Nature Partnership - Hosted by Somerset County Council
- Dorset Local Nature Partnership - Hosted by Dorset County Council

At the catchment level (see Figure 35)

- Cornwall Catchment Partnership (inc. West and North Cornwall) – hosted by CWT
- Tamar Catchment Partnership – hosted by WRT
- South Devon Catchment Partnership – hosted by WRT
- North Devon Catchment Partnership – hosted by Devon Wildlife Trust
- East Devon Catchment Partnership – hosted by Devon Wildlife Trust
- Somerset Catchment Partnership – hosted by Farming and Wildlife Group
- Dorset Catchment Partnership – hosted by Wessex Water
- Bristol Avon Catchment Partnership – hosted by Bristol Avon Rivers Trust
- Hampshire Avon Catchment Partnership – hosted by Wessex Rivers Trust

The Catchment Level groups all have a broad range of stakeholders covering all interest and influence categories, but work is needed to pull these together at varying scales as well as address the need for more diversity and inclusivity. This will be achieved initially through Citizen Science coordination, data analysis and combining at scale through the use of data audits and combined community analysis where local groups review and present river water quality data. The ethos of this group is that of a bottom-up community group, and as such, they currently have limited governance and are often described locally as a ‘coalition of the willing’.



Figure 35: Pilot sites 4: Westcountry map showing existing catchment partnership areas

6.4 Local engagement challenges

The main local challenge is the sheer volume of activity in catchment management both in terms of the interest in river water quality and quantity as well as aquatic biodiversity and the limited time partnership hosts have to attend joint meetings. Additionally, the nature of the peninsular means it is a three-hour drive from one end to the other, so most events will be online. Several of the area and regional groups are government run, so it is sometimes challenging to access them in order to integrate and receive catchment partnership data. Also, catchment partnerships are often fiercely unique, hence attempts to standardise are often challenging.

6.5 Local ambitions/distinctiveness

The Westcountry Rivers Trust has a key ambition to bring together the existing catchment partnerships, already developed under the Catchment Based Approach. Their aim is to collate, analyse and scale up citizen science data from across the region. This data can be used at the highest level by the Water Resource Group but also the area level Flood and Coastal Committees and the county level Local Nature Partnerships as well as the Catchment Partnerships themselves.

By participating in the InnWater project, the WRT aims to:

- highlight the value of collating public, private and community data
- demonstrate a weight of evidence approach on the state of our rivers
- unite different scales of partnerships to deliver Integrated Catchment Management

7 PILOT SITE 5 - TISZA (HUNGARY)

Each Pilot Site has been mapped to show key elements such as rivers, geology, soils and land use.

7.1 Pilot Site 5 Tisza maps

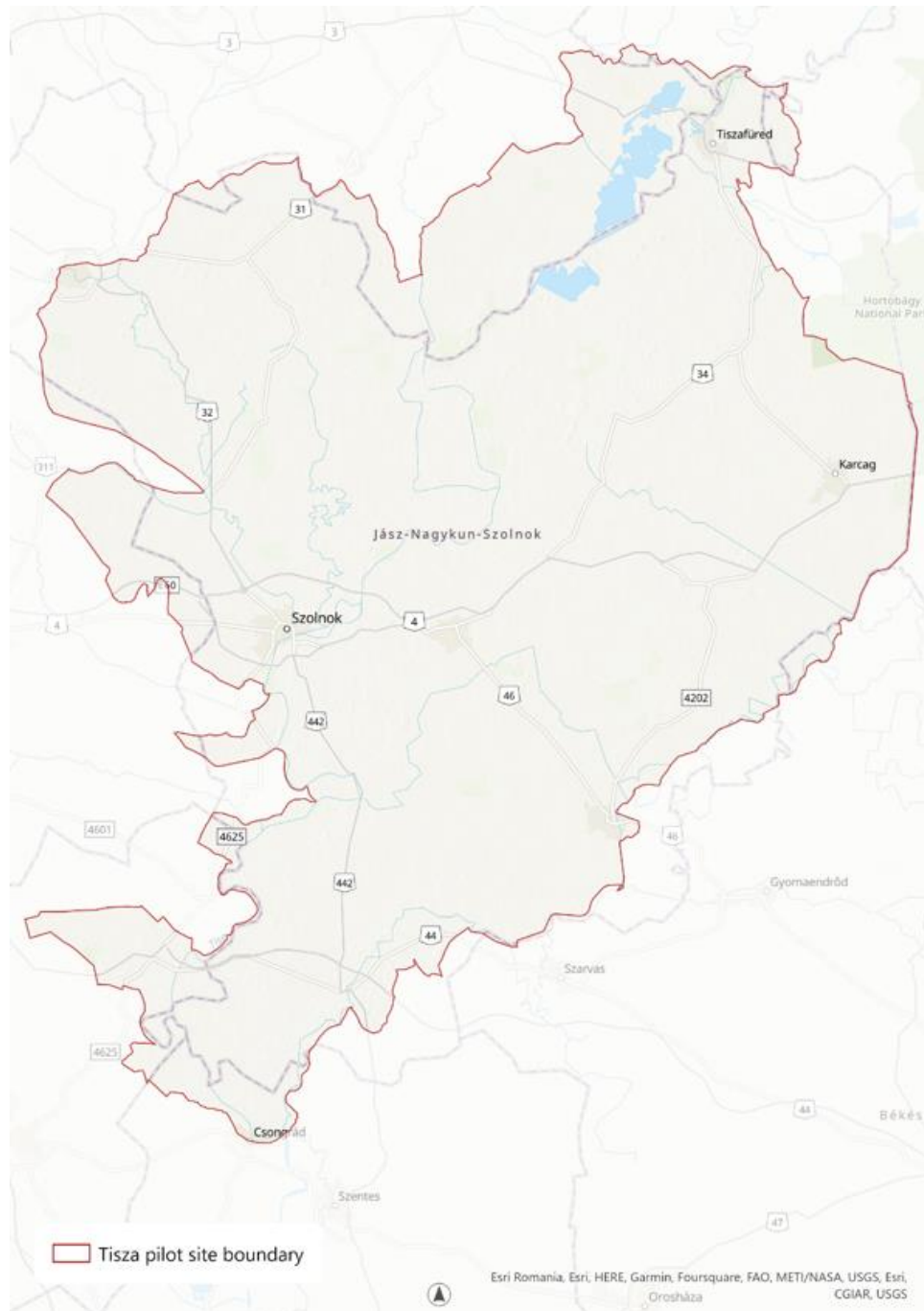


Figure 36: Pilot sites 5: Tisza map - Roads and cities

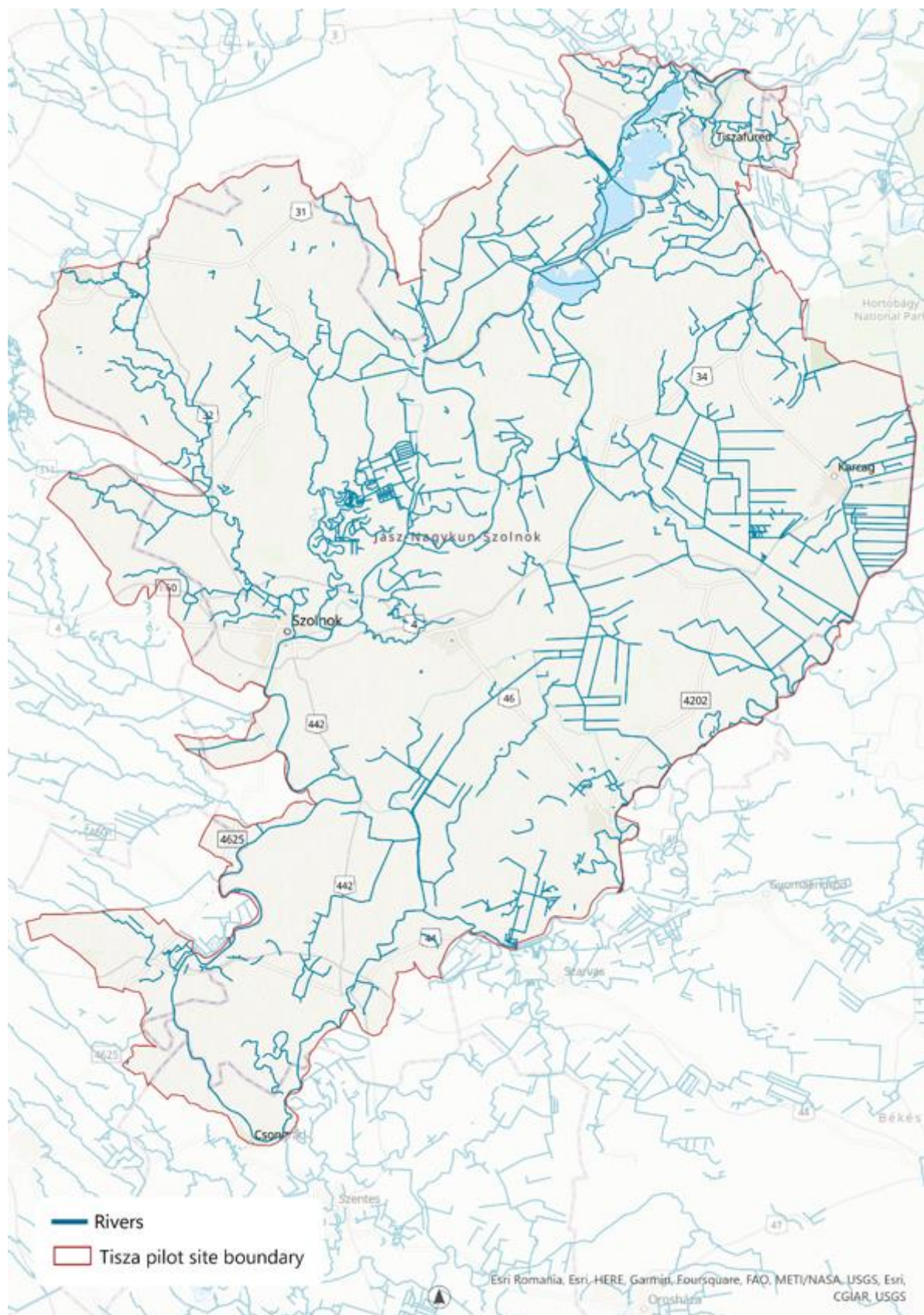


Figure 37: Pilot sites 5: Tisza map - Rivers



Figure 38: Pilot sites 5: Tisza map - Elevation

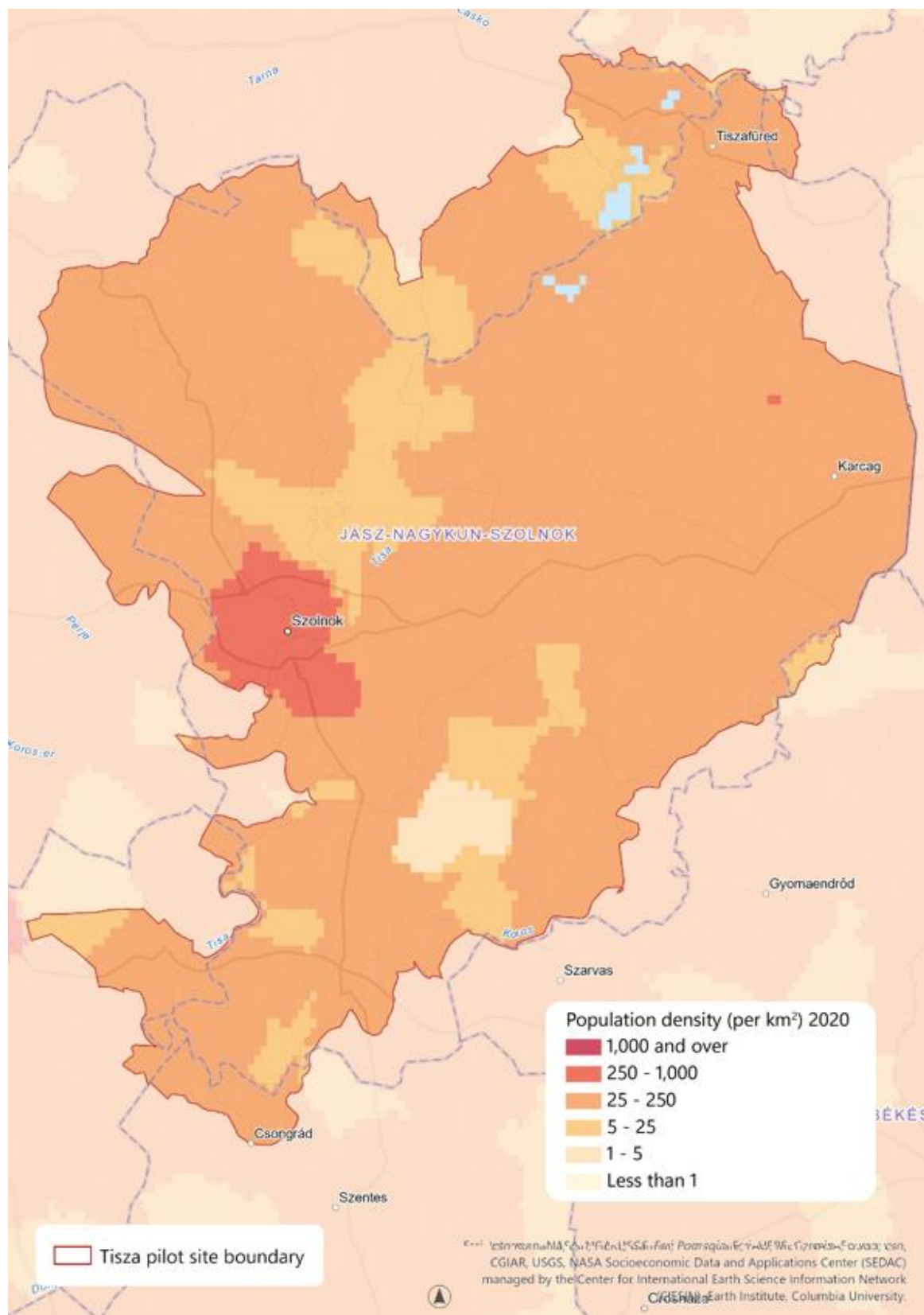


Figure 39: Pilot sites 5: Tisza map - Population

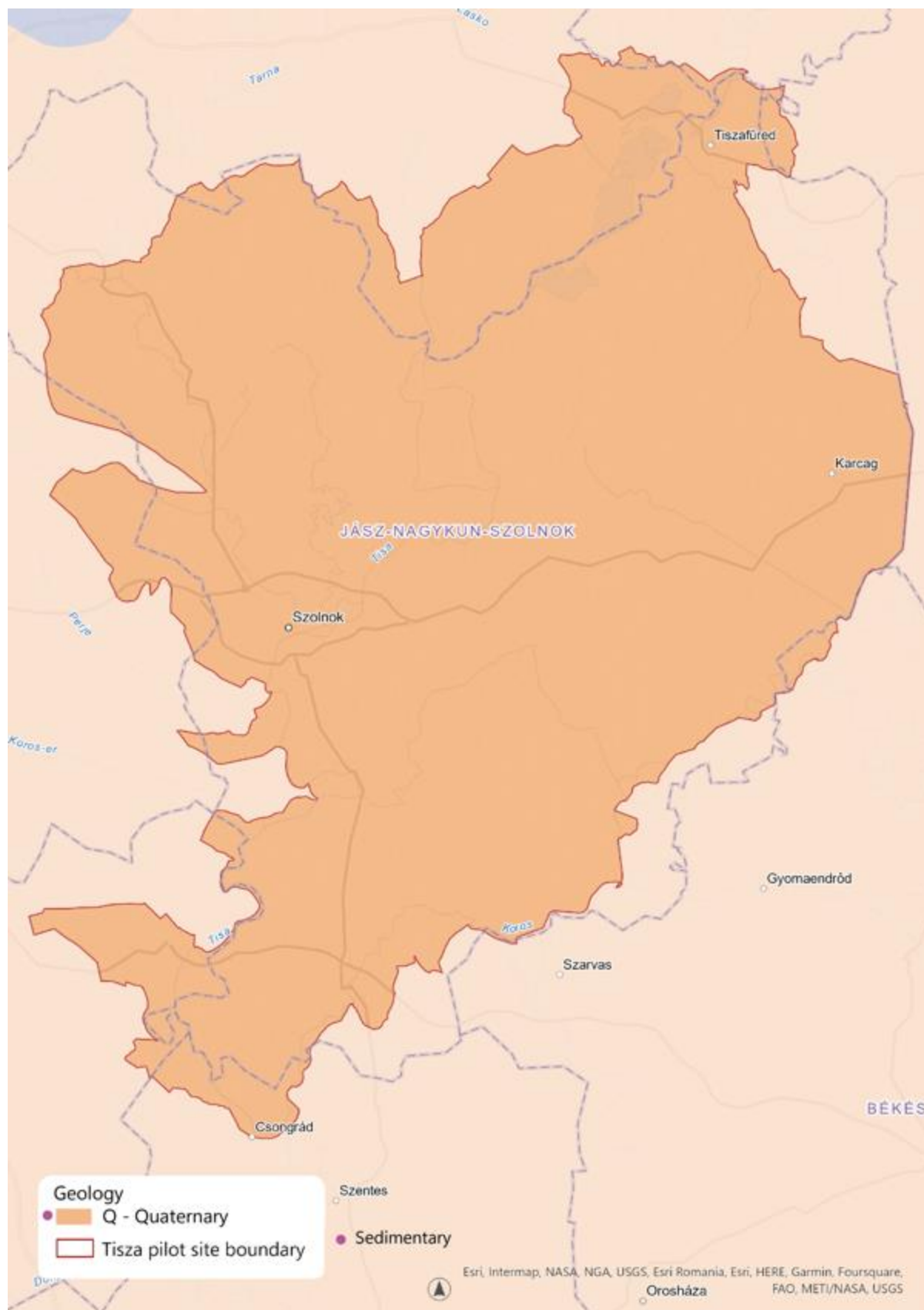


Figure 40: Pilot sites 5: Tisza map - Geology

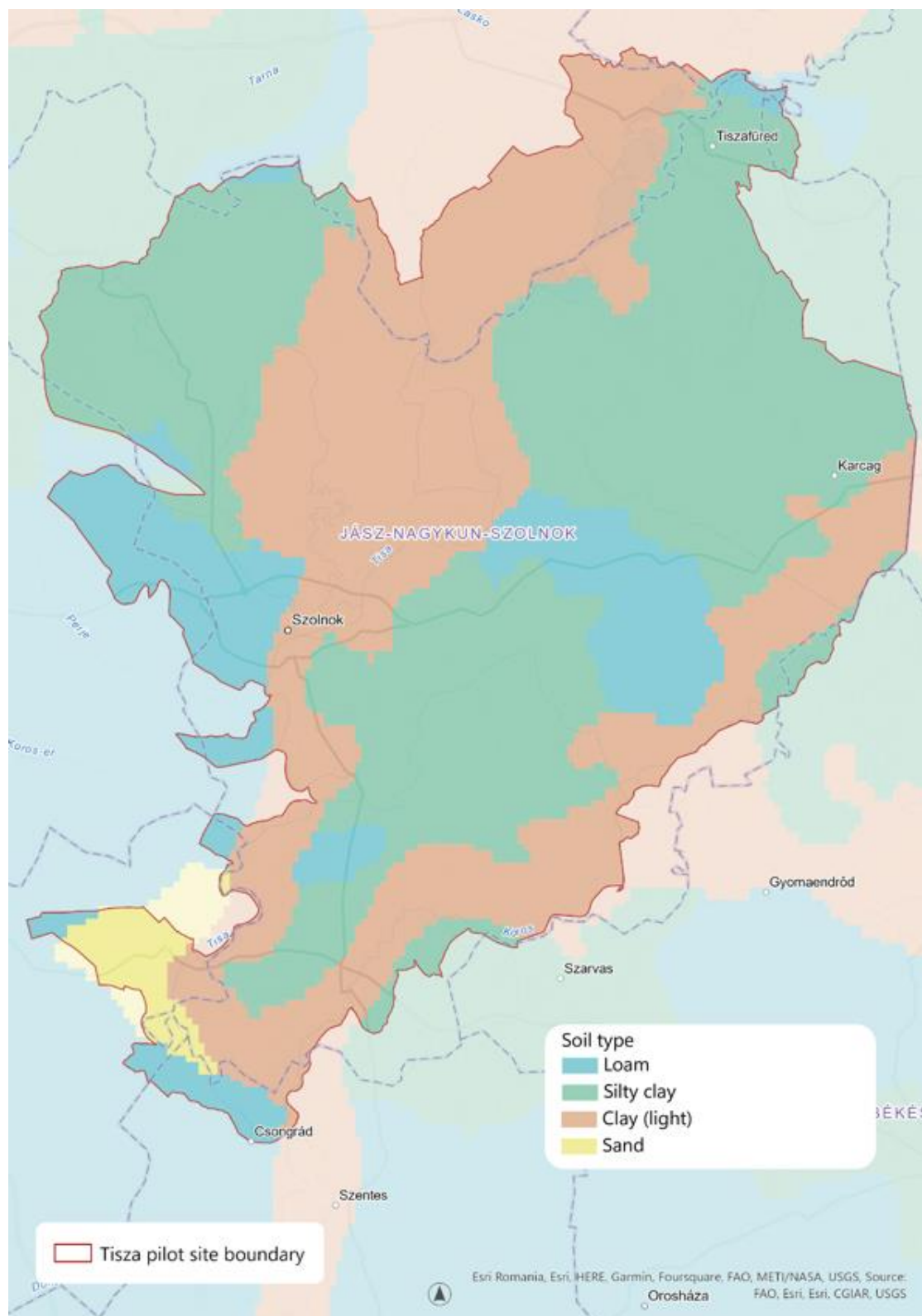


Figure 41: Pilot sites 5: Tisza map - Soils

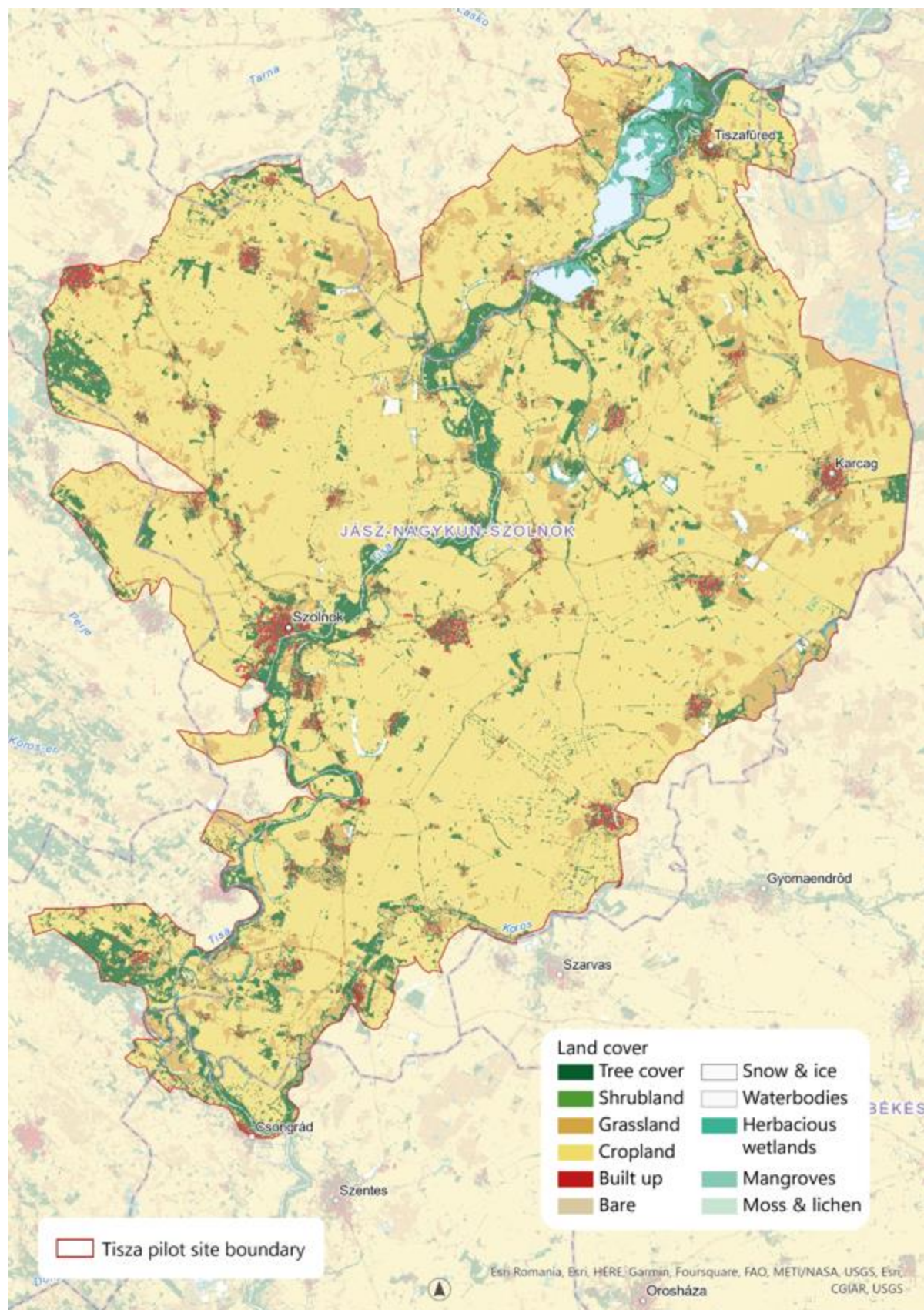


Figure 42: Pilot sites 5: Tisza map - Land Cover



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7.2 Description of the area

The pilot area is in the heart of Hungary, approximately 100 km east of the capital city, Budapest. This flat region primarily comprises agricultural land, with forests and natural vegetation accounting for less than 5% of the area. Noteworthy natural zones are primarily concentrated along the river Tisza and Lake Tisza. Industrial activities are centred in the town of Szolnok.

Flowing through the region's centre is the river Tisza, Hungary's second-largest river. The river has an average water flow of about 500 m³/s, marked by substantial variations both within the year and across different years.

Lake Tisza, the second-largest water body in Hungary, is an artificial lake. It was initially conceived for hydropower generation and to maintain a consistent water level for industrial and irrigation purposes. Established in the 1970s, the lake has since evolved into a prominent tourist destination, encompassing a protected wetland with designated bird habitats. The lake operates as a reservoir, adopting distinct management strategies for the summer and winter seasons. It has an important role in water allocation among various uses.

The region is characterised by periodic water extremities. While significant floods over the past 25 years have prompted successful adaptation measures, recurring and intensifying droughts persist as a consistent challenge. Water resource allocation amid competing demands — including drinking water utilities, tourism, ecological preservation, agriculture, industry, hydropower generation, and micro-climate regulation—is a growing concern in the region.

7.3 Key stakeholders specific to pilot sites and state of engagement

Shortlist of stakeholders whose activity has a connection to future achievements of the InnWater pilot site process.

Table 2: Table of Tisza stakeholders by organisation name, role and activities at a catchment, regional, county and local scale

At the catchment (national) level:

| Level | Name in English / Hungarian | Type of stakeholder | Field of activities |
|----------------------|---|-------------------------------|---------------------|
| Catchment | Tisza River Subbasin Water Management Council (of Hungary) / Tisza Részvízgyűjtő Vízgazdálkodási Tanács | consultative body | water management |
| Catchment (National) | General Directorate of Water Management / Országos Vízügyi Főigazgatóság (OVF) | public body | water management |
| Catchment (National) | National Agricultural Research and Innovation Centre - Research Department of Irrigation and Water Management / Nemzeti Agrárkutatási és Innovációs Központ-Öntözési és Vízgazdálkodási Kutatóintézet | Higher education and research | agriculture |

At the regional level

| Level | Name in English / Hungarian | Type of stakeholder | Field of activities |
|----------|---|---------------------------|----------------------|
| Regional | Middle Tisza District Water Directorate / Közép-Tisza-vidéki Vízügyi Igazgatóság, Szolnok | Regional public authority | water management |
| Regional | Közép-Tisza-vidéki Területi Vízgazdálkodási Tanács, Szolnok / Middle Tisza District Territorial Council of Water Management | consultative body | water management |
| Regional | Tiszamenti Regional Water Utility Company / Tiszamenti Regionális Vízművek Zrt. | W&WW Service provider | water supply company |
| Regional | Hortobágy National Park Directorate / Hortobágyi Nemzeti Park Igazgatóság | Regional public authority | nature conservation |
| Regional | Közép-Tisza-vidéki Horgász Egyesületek Szövetsége / Middle Tisza District Angling Association | Interest group, NGO | recreation |
| Regional | WWF Hungary | NGO | nature protection |

At the county level

| Level | Name in English / Hungarian | Type of stakeholder | Field of activities |
|--------|---|---------------------------|--|
| County | Governmental Office of Jász-Nagykun-Szolnok County / Jász-Nagykun-Szolnok Vármegyei Kormányhivatal | Regional public authority | policy |
| County | County Government of Jász-Nagykun-Szolnok / Jász-Nagykun-Szolnok Vármegyei Önkormányzat | Regional public authority | policy |
| County | Disaster Management of Jász-Nagykun-Szolnok County, Department of Water quality Protection / Jász-Nagykun-Szolnok Vármegyei Katasztrófavédelmi Igazgatóság, Vízvédelmi Hatósági osztály | Regional public authority | water management , water quality control |
| County | Jász-Nagykun Szolnok county Directorate of Hungarian Chamber of Agriculture/ Nemzeti Agrárgazdasági Kamara Jász-Nagykun-Szolnok Vármegyei Igazgatóság | Interest group | agriculture |

At the local level

| Level | Name in English / Hungarian | Type of stakeholder | Field of activities |
|-------|--|-------------------------------|--------------------------|
| Local | Tisza-tavi Horgász Egyesületek Szövetsége / Tisza Lake Angling Association | Interest group including NGOs | recreation |
| Local | MVM Hydropower Plant Ltd. | Sectoral agency | hydropower plant company |
| Local | VCSM Zrt., Víz és Csatornaművek Koncessziós Zrt. (Szolnok) | Sectoral agency | water supply company |
| Local | CIBAKERT Irrigation Association Ltd. / CIBAKERT Öntözési Közösség Kft., Kétpó | Private company | irrigation plant |
| Local | Tiszanána Irrigation Association Ltd. / Tiszanánai Öntözési Közösség Kft., Tenk | Private company | irrigation plant |
| Local | JÁSZ-FÖLD Zrt., Jászládány | Private company | irrigation plant |
| Local | Irrigation Association of the farmers of Konta Ltd., Kisujjszállás | Private company | irrigation plant |
| Local | CISZÖV '49 Ltd. | Private company | irrigation plant |
| Local | AgroSprint Zrt., Karcag, BIGE HOLDING Zrt., Szolnok, Bonduelle Central Europe Kft., Nagykőrös BUNGE Növényolajipari Zrt., Martfű KALL Ingredients Ltd., Tiszapüspöki UNIVER-AGRO Ltd., Kecskemét | Private companies | Industrial water users |
| Local | Lake Tisza Ecocenter / Tisza-tavi Ökocentrum | Non-profit company | nature conservation |
| Local | Alliance for the Living Tisza / Szövetség az Élő Tiszáért Egyesület | NGO | nature conservation |
| Local | Szolnok Green Power / Szolnoki Zöld Erő | NGO | nature conservation |
| Local | Házunk Tája Klub, Jászfényszaru | NGO | local community activity |
| Local | Karcag Nagykun Farmers' Club / Karcagi Nagykun Gazdakör, Karcag | NGO | agriculture |
| Local | Térségünkért Egyesület, Karcag | NGO | local community activity |
| Local | Hungarian-Kazakh Friendship Group / Magyar-Kazah Baráti Társaság, Karcag | NGO | local community activity |
| Local | Kisújszállás Farmers' Club / Kisújszállási Gazdakör, Kisújszállás | NGO | agriculture |
| Local | NHSZ Szolnok Kft. | Non-profit company | city maintenance |
| Local | PET Kupa/Plastic Cup Association | NGO | nature protection |

| | | | |
|-------|--|---------------------|---------------------|
| Local | kayaking/canoeing tour operators | Private company/NGO | recreation, tourism |
| Local | Port and recreational infrastructure operators at the Tisza Lake | Private, municipal | recreation, tourism |

7.4 Local engagement challenges

Prior to 1990, stakeholder consultation remained a neglected practice in Hungary and other former socialist countries. Although this prevailing mindset is gradually evolving, a growing yet still moderate interest in engagement persists among various parties, including decision-makers, citizens, and stakeholders. While civil society primarily advocates for more comprehensive consultations before significant decisions are made, civil participation still falls short compared to many Western European nations.

Frequently, it is regulatory mandates from the EU or projects on the European level that drive the obligation for stakeholder engagement. In this context, the InnWater project assumes a pivotal role by facilitating these consultations and introducing innovative methods and expertise to facilitate the process.

The complexity of challenges linked to drought-related water governance can render effective communication with stakeholders particularly demanding. Paradoxically, it's this very complexity, at the intersection of potential solutions and diverse stakeholder interests, that underscores the heightened importance of early engagement. By involving relevant parties from the outset, they can become integral contributors to the process.

Yet another challenge for engagement arises from the partial lack of economic information concerning conflicting activities and the implications of economic policy instruments governing the management of scarce water resources. The generation of relevant economic data is a prerequisite at an early project stage to underpin subsequent consultations effectively.

Lastly, the governments of Hungary have historically sought to avoid conflicts by maintaining low costs for accessing water. However, the impending reality of water scarcity necessitates an inevitable shift in this practice. It is imperative that the communication of the need for regime change is executed carefully so as not to disrupt cooperation with farmers and other potentially affected stakeholders.

7.5 Local ambitions/distinctiveness

Prior to the webinars and workshops, individual consultations, such as interviews, will be conducted with a range of stakeholders. This preparatory phase aims to enhance their active engagement and participation in the upcoming events.

Using economic analysis will serve as a foundation for addressing conflicts surrounding the management of scarce water resources. This approach will not only aid in conflict resolution but also contribute to elevating stakeholders' awareness about the complex web of interrelationships regarding water allocation and the underlying infrastructural capacities.

8 INNWATER ORGANISATION

The details below present the individual requirements for each Work Package, which will develop as the project progresses, and the table and Appendix 1 will be used to integrate with the Pilot Site Communities through the use of 30 planned webinars (2 per year for three years in each of the 5 pilot sites – each run in the local language). The table below details the schedule for these events and sets out when and how different Work Package activities can be built into themes. Additionally, three Transversal European Level webinars are run at a project level in English that highlight common transversal topics and issues and allow community groups to understand the wider project and specific themes. Transversal webinars will include training elements. All webinars are Key Performance Indicators and need capturing with agendas, attendance and photographs (see Annex 1)

Table 3: Webinar timetable for both 30 local webinars and 3 Transversal European level webinars

| Area > | Date | 2023 | 2023/24 | 2024 | 2024/25 | 2025 | 2025/26 |
|---------------|------|-------------------------------|--|--|---|---|---|
| La Reunion) | | 1.1 08/06/23 Preliminary | 1.2 16/02/24 Review stakeholders | 1.3 11/06/24 WP2 Governance | 1.4 WP4 CGE | 1.5 WP2 Youth voice | 1.6 Conclusion and future |
| Middle Brenta | | 2.1 19/09/23 Inception | 2.2 20/06/24 Local Ambitions | 2.3 17/09/24 Better Communication | 2.4 WP2 Governance | 2.5 Needs from WP3/ WP4 chat tool | 2.6 Needs from WP3/ WP4 chat tool |
| Figueres | | 3.1 17/11/23 Inception | 3.2 14/06/24 Water Management | 3.3 12/12/24 Politicians | 3.4 14/02/2025 Politicians. Creation of a Water Users Community | 3.5 Farmers Water users | 3.6 WP2 Governance Conclusion and future |
| Westcountry | | 4.1 25/09/23 Inception/CSI | 4.2 23/04/24 Automatic data analysis | 4.3 25/10/24 WP2 Governance | 4.4 28/02/25 Automated 3rd party data | 4.5 Hosting data hubs WP4 chat tool | 4.6 River Basin Water Forum - WP4 |
| Tisza | | 5.1 15/11/23 Inception | 5.2 13/02/24 Live meeting with farmers | 5.3 21/11/24 Agri Review information | 5.4 18/12/24 Farmers Follow up | 5.5 WP2 Governance | 5.6 Conclusion and future |
| Transversal | | | T1 23/11/23 Introduction | | T2 02/12/24 Progress | | T3 Present Platform |

Work Package leaders feed in requirements per package, concentrating on what task leaders need to do with Pilot Site Communities. This is an ongoing process that runs throughout the project, so the below summary elements are not indicative of the future requirements of each work package but rather reflect the developmental work underway.

8.1 Workpackage organisation

This section is set to be expanded as Work Package deliverables, and activities develop, and interactions and requests on Pilot Site communities can be detailed and planned using the webinars listed in Table 3. Some Work Packages are expected to have little interaction with pilot site communities, and some have significant involvement needing careful coordination.

WP1 Project Management

There were limited requirements other than promotion between WP1 and the pilot sites, other than regular discussions with the clustered projects RETOUCH NEXUS and GOVAQUA on the activities and possible synergies.

WP2 Water governance for sustainability and resilience

Task 2.1 involved creating a tool to evaluate water governance at various scales, ensuring consistency across sectors like energy and agriculture, to enhance water system resilience and sustainability. This was achieved through a literature review of existing frameworks, like the OECD Principles⁶, which were then enhanced with new principles focusing on circular economy, climate resilience, local empowerment, and inclusion of vulnerable groups. A questionnaire-based assessment tool was developed, and pilot sites will use it to identify governance challenges, with results displayed through visual aids. A digital version of the tool will also be created.

Task 2.2 aimed to provide practical guidance for water managers through a "Reference Guide for Programming." This guide will compile existing effective governance practices and solutions, organized around the OECD principles, and presented in "assessment to action" sheets. The guide will address common barriers to good water governance and highlight innovative solutions, drawing from desk research and literature reviews. The aim is to make the guide a practical resource, adaptable to various contexts.

Task 2.3 focuses on validating the developed framework and generating policy recommendations. This will be done through a three-step process: online expert consultation, structured consultations with EU policy experts, and application of the framework in pilot sites. Each step will validate different aspects of the methodology, from core elements to the evaluation process and results. The goal is to ensure the framework's practical use and provide context-specific recommendations that can inform broader EU policy considerations. The project has made significant progress in developing the assessment tool and reference guide, with validation and pilot site assessments to follow.

WP3 Citizen Engagement

Work Package 3, led by Eurecat, focuses on enhancing citizen engagement in water governance within the project's Pilot Sites. It aims to develop a methodological framework for establishing River Basin Water Forums (RBWF) to facilitate community involvement.

Task 3.1 involved a comprehensive review of citizen engagement experiences across the EU since the mid-1960s. This included analysing past projects like Agenda 21 and FIWARE4WATER, and developing the "helix of socio-political consensus" model, which emphasizes the participation of diverse social sectors (public, private, research, citizens, cultural actors, landowners). The output was a deliverable highlighting key principles such as autonomy and continuity of engagement, and the importance of socio-political contexts. The Pilot Sites have been involved in this review.

⁶ https://www.oecd-ilibrary.org/governance/oecd-principles-on-water-governance_9789264250892-en

Task 3.2 focuses on defining InnWater's citizen engagement solutions through the creation of a methodological guidance document for Pilot Sites to develop Citizen Engagement Roadmaps. This document addresses key questions: why engage citizens, what are the goals, who should be involved, and how to engage them effectively, referencing the "ladder of citizen participation.". Each Pilot Site has created a road map set out in D3.3.

Task 3.3 integrates assessment into the methodological guidance, focusing on how to monitor and report the results of citizen engagement. It involves identifying indicators to evaluate the outcomes of engagement activities, ensuring that the results feed into policy recommendations.

Throughout these tasks, collaboration with other Work Packages (WP2 and WP4) ensures integration of citizen engagement into governance scenarios and the development of effective roadmaps. Regular meetings with Pilot Site leaders and WP leaders facilitate planning and coordination. The overall goal is to create sustainable and effective citizen engagement strategies for improved water governance.

WP4 Tools

Work Package 4 aims to create a digital platform for improved decision-making across the water, energy, food, and environment (WEFE) sectors. This platform will integrate various tools, including a water governance diagnostic tool, a cross-sector dashboard, a domestic water tariff dashboard, and an e-learning platform.

Task 4.1 focuses on developing a multilingual online water governance diagnostic tool, based on WP2's methodology. This tool will allow stakeholders to assess and compare governance systems, facilitating discussions among diverse actors. A short questionnaire has been developed, and a mock-up of the tool is being prepared for presentation and validation. This tool has been and will be tested across all Pilot Sites.

Task 4.2 involves creating a cross-sector hybrid dashboard and simulation, using a basin-level CGE model. This model will analyse interactions between water use, energy production, and economic activities, while considering environmental impacts. Work has progressed on literature reviews, data research, and initial modelling for Reunion Island.

Task 4.3 focuses on developing a digital dashboard for domestic water tariffs, building on a previous prototype. This tool will assess the socio-economic performance of pricing policies for drinking water and wastewater services. Data collection and analysis are underway, with progress made on defining indicators and setting up the household database. However, delays in recruiting research assistants have impacted the coding progress. The majority of this work was linked to the La Reunion Pilot Site

Task 4.4 aims to develop the InnWater Governance platform, a WEFE-oriented tool that serves as both an e-learning environment and a decision support system. Platform requirements, architecture, and a high-fidelity prototype have been defined through iterative collaboration. Coding of the user interface and development of a language model are also underway to be tested across the Pilot Sites.

Overall, WP4 is making progress in developing its digital tools, with ongoing efforts to integrate them into a comprehensive platform for improved WEFE sector decision-making. Collaboration with other work packages is crucial for ensuring the platform meets the needs of all stakeholders.

WP6 Communication

Task 6.1 Communication & Dissemination Plan: communication on the activities of the Pilot Sites Communities, dissemination of their results. Interviews of Pilot Sites leaders were held during the first period of the project, together with interviews from some local stakeholders. Others will come, as well as posts on social media, articles on the website. A Green Week Partners event was organized during the General Assembly held in La Réunion in June 2024, where Pilot Sites leaders held discussions with local stakeholders on their challenges linked to water governance and actions ongoing. Several actions will be organized during the last period of the project to highlight Pilot Sites' achievements.

Task 6.2 Business and exploitation plan, and D6.5 Exploitation Road map: these deliverables help to define the Ker Exploitable Results of the project together with exploitation scenarios. Self-sustaining Pilot Sites Communities could be in themselves an important result of the project, participating to improving water governance in different sites across Europe.

Task 6.3 replication methodology (and D6.7): on the one hand, the work carried out in the different Pilot Sites will feed the replication report by sharing feedback on the different activities and on the overall process, on the other hand the replication assessment which will be made across 14 replication sites will also be useful for Pilot Sites testing and implementing their different tools and solutions.

Thematic webinars were held on “Project level international stakeholder webinar” in November 2023, with the second transversal webinar on project progress in December 2024. A further webinar is expected at the end of the project.

8.2 Transversal webinars

The InnWater Governance Platform will encapsulate the different digital tools and be shown in transversal webinars across the different PS. These will be done in the last term of the project, during 2025 and 2026.

Three “transversal” European webinars are run at a project level, in English. Targeting Pilot Sites Communities, they highlight common transversal topics and issues. At the project level, they provide opportunities for stakeholders to get a clear view of the project results while offering the possibility of engaging with them. At the Pilot Sites level, those webinars bring together stakeholders to exchange their experiences and good practices and share knowledge. The last webinar will have a special focus on capacity building.

These webinars are under the responsibility of WP5 and WP6 dealing with Impact maximisation. They are planned as follow:

T1 Transversal webinar n°1: 2023/2024 (23 November 2023):

The first transversal webinar, with external partners from all Pilot Sites Communities, has been held on 23 November 2023. This webinar aimed at discussing between Pilot Sites stakeholders on water governance challenges and expectations, as well as introducing the water governance assessment task. 24 participants attended this online event which lasted 2,5 hours.

T2 Transversal webinar n°2: 2024/2025 (3 December 2024)

The second transversal webinar was held on 3rd December 2024. Gathering 17 participants, it showed progress on the project implementation, focusing on 3 results: the InnWater citizen engagement methodology, the water governance assessment tool, and the replicability assessment of the different tools and solutions of the project.

T3 Transversal webinar n°3 2025/2026:

Draft topic: Presenting the tools and services from the project around the InnWater governance platform.

8.3 Pilot Sites stakeholders' profiles

After the first local webinars and to better understand the needs and challenges related to water governance of potential end-users, a survey was sent to Pilot Sites stakeholders.

It gave information that were used for both the first steps of the exploitation plan (end-users' tasks related to water governance, objectives, obstacles to implementation, expectations regarding InnWater results), as well as for communication and disseminations aspects.

8.4 Stakeholder's map

Based on the requirements indicated here by all WPs, an Excel file was created and is managed by WP6 to gather all actions planned and done towards the different targeted audiences of InnWater, including the Pilot Sites.

This file is regularly updated to allow all the partners to have an overall view of the actions implemented, avoid overlaps, and encourage synergies.

Table 4: InnWater Stakeholders map (extract) showing the different stakeholders in different pilot sites and their interaction with different work packages. See SharePoint

| | Categories of stakeholders / Persona | Sub-categories (from WP4, WP5 works) | WP2 | | WP3 | | WP4 | | WP5 | | |
|---|--------------------------------------|--|-----------------------------|------------------------------------|---|---------------|---|--------------|---|--|--|
| WP needs from the stakeholders (Who, What) & When | | | Testing the assessment tool | When | People getting involved in River Basin Water Forums | When | Stakeholders to give their needs regarding the tools | When | Being involved in the project: assessment and feedbacks | | |
| | | | | | | | | | PS#1 La Réunion | PS#2 Brenta | PS#3 Figueres |
| Pilot Sites | ALL Pilot Sites Stakeholders | | Testing the V1 of the tool | First at La Réunion (GA June 2024) | Introduction to the Citizen engagement methodology to PS | Autumn 2024 | Test T4.1 Water Governance diagnosis tool - Prototype demo | Spring 2024 | Local webinar n°1: 08/06/2023- Preliminary | Local webinar n°1: 19/09/2023 Inception | Local webinar n°1: 17/11/2023 Inception |
| | | | Testing the V2 of the tool | #2: Westcountry: October 2024 | Analysis of PS answers and first Citizen Engagement Roadmap | November 2024 | Test T4.1 Water Governance diagnosis tool - Tool demo | Summer 2024 | Local meeting n°2: 16/02/2024 - Review stakeholders | Local meeting n°2: 20/06/2024 - Local ambitions | Local meeting n°2: 14/06/2024 - Water management |
| | | | Testing the V3 of the tool | #3 Brenta: March 2025 | Bilateral meetings with PS&WP3 | December 2024 | T4.1 Water Governance diagnosis tool - Used in Westcountry | October 2024 | Local meeting n°3: 11/06/2024 - Water governance workshop | Local meeting n°3: 17/09/2024 - Better communication | Local meeting n°3: 12/12/2024 - Politicians |
| | | | Testing the V4 of the tool | #4 Figueres - Spring/summer 2025 | Tailored PS roadmap for citizen engagement | January 2025 | T4.2 CGE model - Introduction to stakeholders during PS1 La Réunion meeting | January 2025 | Local meeting n°4 - 31/01/2025 - WP4 WGE | Local meeting n°4: 28/03/2025 - Water governance WP2 | Local meeting n°4: 14/02/2025 - Politicians. Creation of a Water Users Community |
| | | | Testing the V5 of the tool | #5 Tisza - Autumn 2025 | | | | | Local meeting n°5: xx/xx/2025 - Youth voice | | |
| | Water managers | Water distribution managers | | | | | | | | | |
| | | Water administration (Ministries, Water Agencies, Basin Committees...) | | | | | | | | | |
| | | Local water managers: river | | | | | | | | | |
| | | Wastewater sector | | | | | | | | | |
| | Water regulators | | | | | | | | | | |

CONCLUSION

This InnWater partnership's "Final Pilot Site Implementation Guidelines" is presented not as a static endpoint, but as a dynamic, "living document." This inherent flexibility acknowledges the evolving nature of water governance challenges and the need for continuous adaptation. Designed to streamline project execution and ensure stakeholder engagement without overburdening participants, the guidelines empower Work Package leaders to design and deliver targeted workshops. These workshops, at the heart of the project, serve as crucial platforms for testing innovative approaches and tools in real-world water governance scenarios.

The pilot site communities, having operated for two years with varying degrees of maturity, have provided invaluable insights into the practicalities of implementing innovative water governance strategies. As the project enters its final year, a crucial focus will be on addressing the diverse maturity levels of these sites. This will ensure that all communities can effectively engage with and contribute to the testing and development of complex subjects, building upon the initial groundwork and addressing any logistical challenges encountered.

The iterative nature of this document is paramount. The guidelines were further refined through collaborative efforts between pilot site community leads and Work Package leaders. This process of co-creation ensures that the document remains relevant and responsive to the evolving needs and experiences of the stakeholders. Furthermore, the project's commitment to collaboration extends beyond its immediate participants. Interaction with other Water Governance projects within the same funding strand fosters a rich exchange of knowledge and best practices. This Pan-European cooperation and integrated working approach provides significant added value to the European Commission. It showcases how innovative water governance strategies can be effectively implemented across diverse scales, climates, and landscapes, demonstrating the project's broad applicability and potential for wider impact.

The recognition that this document is a "living document" underscores the project's commitment to adaptive management. Water governance is not a one-size-fits-all endeavor. The guidelines, therefore, provide a flexible framework that can be tailored to the specific needs and contexts of different communities. This adaptability, coupled with the emphasis on collaboration and knowledge sharing, is essential for building resilient and sustainable water systems. As the project progresses, the "Final Pilot Site Implementation Guidelines" will continue to evolve, reflecting the ongoing learning and adaptation that are critical for effective water governance in a changing world.

ANNEX 1: WEBINAR PLANNING

Webinar descriptions see sharepoint for individual webinar reports and evidence:

1. La Reunion webinars

- 1.1. 1st webinar – 08/06/2023 – Presentation of InnWater Project and working group discussion
- 1.2. 2nd webinar – 16/02/2024 - Presentation of InnWater project and consolidation of the workplan with the involved stakeholders working group
- 1.3. 3rd webinar – 11/06/2024 - Collective work on Water Governance (live assessment), Citizen Engagement (preliminary work) and selection of water resource management issues (to be included in the work program of the local Stakeholder group). Presentation of the OMEGA CGE Model with live simulations.
- 1.4. 4th webinar - TBC
- 1.5. 5th webinar - TBC

2. La Brenta webinars

- 2.1. 1st webinar – 19/09/2023 – Presentation of the project to the local municipalities
- 2.2. 2nd webinar – 20/06/2024 - Presentation of the InnwWater project to the local water utility and discussion on how to improve the ERC-related communication to the users
- 2.3. 3rd webinar – 17/09/2024 - Meeting with the local municipalities of the Brenta river for the creation of a Steering Committee
- 2.4. 4th webinar - TBC
- 2.5. 5th webinar - TBC

3. Figueres webinars

- 3.1. 1st webinar – 17/11/2023 – Presentation of th project and discussion on governance at basin escale
- 3.2. 2nd webinar – 14/06/2024 - Experiencing governance in demonstration sites: Water Governance in the Muga Basin
- 3.3. 3rd webinar – 12/12/2024 - To learn the Vision of the municipalities in terms of water management for current and future scenarios
- 3.4. 4th webinar – 14/02/2025 - Water Management in the Muga Basin
- 3.5. 5th webinar

4. West Country webinars

- 4.1. 1st webinar – 25/09/2023 – Presentaiton of the project and discussion on Citizen Science
- 4.2. 2nd webinar – 24/04/2024 - Review of Citizen Science Data and agreement on Environment Agency rational for survey effort. Also warming up attendees for 25th September meeting
- 4.3. 3rd webinar – 25/09/2024 - Governance live assessment: catchment partnerships representatives to provide feedback on the enhanced governance assessment tool by comparing the different results obtained
- 4.4. 4th webinar – 28/02/2025 - Presentation on InnWater data analytics and provisional Network Analysis



4.5. 5th webinar - TBC

5. Tisza webinars

5.1. 1st webinar – 15/11/2023 – Presentation of the Innwater project, the Hungarian pilot site case study plans and discussion

5.2. 2nd webinar – 13/02/2024 - The workshop was organised at the Karcag office of the National Agricultural Chamber

5.3. 3rd webinar – 21/11/2024 – Meeting with farmers, representatives of the agricultural chamber of commerce, the county council and the water authority, all present in the Karcag area of the pilot site.

5.4. 4th webinar – planned for 18/12/2024 – Discussion with farmers on how to step forward in organising water retention areas on currently cultivated land parcels.

5.5. 5th webinar - TBC



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