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THESEUS

Hub4Circularity

A First of a kind Hub for circularity demonstrator for Attica and peripheral regions

Grant Agreement No 101178059

DELIVERABLE 2.1: Governance Model v1

Governance model for regional and intra-regional I-US

Work Package: WP2

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Linköping University (LiU)

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Publishable summary

An effective governance can be seen as the backbone for systemically advancing industrial and urban symbiosis and other circular developments. The main objective of governance is to create fertile development conditions within a long-term time horizon. This document is an interim deliverable for Task 2.1 (Governance for Regional and Intraregional Industrial and Urban Symbiosis), which is to be completed within the first 36 months of the Horizon Europe THESEUS Project, which runs from December 2024 to November 2029. This report summarises the interim outcomes of the work done until Month 9 (M9).

As an interim deliverable, the document presents reflections on the importance of governance of IUS processes, presents relevant scientific and practitioner findings collected so far, and lays out a workflow planned for subsequent project stages. Some sections currently contain only headings to provide a preview of the intended content which will be developed in later versions.

This is an early draft of a dynamically evolving document. Relatedly, the final deliverable may differ from this version.

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Abbreviations

Abbreviations	Full name
AI	Artificial Intelligence
CE	Circular Economy
DoA	Description of Action
EC	European Commission
eSC	Extended Steering Committee
EU	European Union
GA	Grant Agreement
H4C	Hub 4 Circularity
IS	Industrial Symbiosis
I-US	Industrial Urban Symbiosis
PM	Project Management
PO	Project Officer
SC	Steering Committee
WP	Work Package

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1 Introduction

1.1 Background

There is a growing need for, and interest in, creating more value with less resource use and emissions. Industrial and Urban Symbiosis (IUS) is a proven and effective way towards such outcomes and is best recognised as a process of developing and maintaining cross-sectoral partnerships that enable more productive utilisation of diverse resources, including residual energy and materials but also infrastructure, machinery, land, and human resources[1]. Although it is not a strict necessity, local (city or municipal contexts) or regional (sub-national contexts) offer good starting points for IUS practices.

To scale up the multiple benefits of IUS for businesses, communities, and the environment, European Union promotes the development of Hubs for Circularity (H4C) as "self-sustaining ecosystems for full-scale IUS and Circular Economy"[2]. A key purpose of H4Cs is to accelerate the uptake of IUS practices through concerted action – rather than only relying on self-organising progress.

THESEUS project aims to develop a first of a kind H4C in the Attica region of Greece that includes Athens metropolitan area. Alongside its main objectives of advancing partnerships for increased value from diverse secondary materials (including textiles, construction materials, wastewater and wastewater treatment sludge) and renewable and recovered energy sources, THESEUS also aims at developing regional and intra-regional governance functions that can be adopted in Attica and other H4C contexts.

1.2 Purpose of the deliverable

The purpose of this interim deliverable is to set out the contours of roadmaps for the processes of developing a regional and intra-regional governance structures – one specific to Attica region and another generically for other H4C contexts.

1.3 Overview

Chapter two provides an overview of existing scientific knowledge and practitioner experiences and ideas. Chapter 3 set out the details of the workflow used in the execution of the task and preparation of the final deliverable.

[1] Mirata, M. 2025. Initial study for systemic long-term support to industrial and urban symbiosis in Region Halland.
[2] ASPIRE – Process for Planet Research Association. https://www.aspire2050.eu/p4planet/hubs4circularity (visited on 24 June 2025)

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2 Background

2.1 Scientific knowledge on governance of IUS processes.

Concise and comprehensive definition of, and subsequent knowledge about, governance of IUS processes is scarce in scientific literature. However, governance, in a broad sense, refers to the systems and processes by which decisions are made, enforced, and monitored within an organization or society. It involves the interplay of laws, social norms, power dynamics, and communication, shaping the conduct and order of a social system (wikipedia). Essentially, governance defines how power is exercised and how decisions are made in given contexts to reach certain objectives. In line with Boons et al. (2011) and Spekkink (2016), we support that IUS should be seen as a process and further argue that such processes should be structured as a collection of parallel and sequential projects. Accordingly, process and project governance are important concepts. Process governance is about policies, procedures and practices for running and improving processes and involves defining process ownership, establishing clear roles and responsibilities, and enforcing compliance for consistent and high-quality outcomes[3].

Often without explicit mention of governance, different scholars have investigated both different needs of IUS processes and the actual and potential roles of different actors – both being relevant for the governance. Referring to them as drivers and barriers[4], success factors[5], antecedents and limiters[6] numerous scholars have listed conditions that need to be satisfied for the symbiotic developments to emerge and develop. Referring to them as "key determinants, recently, Mirata (2025) summarised these as presented in

[3] Adapted from www.nintex.com
[4] Neves, et al., 2019.
[5] Mirata, 2004
[6] Walls and Paquin, 2015.

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Table 1.

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Table 1: Key determinants of IUS developments (Mirata, 2025[7]).

Determinant categories	Example factors
Techno-physical determinants refer to technical and material conditions influencing the practical foundation for resource exchanges between firms.	• Local resource availability • Type and diversity of activities • Physical and chemical characteristics of resources • Geographic distribution and distances among actors • Scale and timing of actors' resource flows • Performance of existing technologies and processes • Land and infrastructure availability and accessibility
Knowledge and information determinants relate to access to, sharing of, and capacity to use information needed to identify, evaluate and implement partnerships	• Awareness of the concept and its benefits • Knowledge of needs and capacities of different actors • Knowledge of symbiotic possibilities, their impacts, and challenges • Systems supporting information needs • Confidentiality concerns
Managerial determinants refer to aspects influencing firms' willingness and ability to initiate and maintain partnerships	• Recognition and support from leadership • Relevant former experiences • Allocation of organisational resources • Business value and risk perceptions • Effective risk management/relationship governance; • Organisational trust
Economy and market-related determinants refer to the broader economic conditions and market dynamics shaping the feasibility and attractiveness of resource exchanges from financial and market-based considerations	• Cost, revenue and investment implications • Market demand and stability • Price volatility • Economic incentives • Finance and insurance availability and terms
Policy related determinants refer to the influence of regulations, government policies, and institutional dynamics supporting or hindering resource partnerships.	• Legal and regulatory frameworks • EU-, national-, regional-, and local-level policy support or hinderances; • Permit processes
Social determinants refer to human and relational aspects influencing engagement and support from key stakeholders	• Relationships and trust • Communication and familiarity • Community acceptance • Networks and their characteristics • Champions and intermediaries • Institutional capacity for collaboration

[7] Mirata, M. 2025. Initial study for systemic long-term support to industrial and urban symbiosis in Region Halland.

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Regarding coordination and facilitation structures and important roles, Mirata (2004) demonstrated opportunities and challenges of coordination teams formed by business network organisations, universities, and local and regional authorities and highlighted that coordinators, among others, need to work with finding a balance between the long-term social and environmental sustainability needs and short-term interests of individual actors[8]. Mirata and Emtairah (2005), also demonstrated how joint coordination by universities and municipalities enabled collaborative environmental innovations and creation of new synergies among local businesses, including utility companies serving both public and private actors[9]. Paquin and Howard-Greenville (2012) studied the knowledge and information brokering roles played by private actors specialised in orchestrating regional IS developments[10]. Park et al., (2016) has shown facilitation impacts of groups involving representatives from industrial park operators and universities, enabled and supported by national policies in South Korea[11]. Lindfors et al. (2020), provided a closer look at the roles universities can play, not only by creating and brokering relevant knowledge, but also enabling social processes among key stakeholders[12]. Diving deeper into the roles of municipalities, Södergren and Palm (2021) proposed supporting roles in the form of "enabling", "provision", "authority", "partnerships", and "self-governance"[13]. By looking more closely into the "emergence" phase of IUS practices Mortensen and collaborators (2019) elaborated on how municipalities, businesses, regional authorities, universities, consultants, can enable or support important development phases of "awareness and interest in IS", "reaching out and exploration of connections", and "organising"[14]. Expanding the scope of the IUS development stages, Schlüter merged scientific knowledge with experiences of Nordic facilitation practitioners and put forward a list of important facilitation tasks and contributing activities[15]. Their findings are summarised in Figure 1.

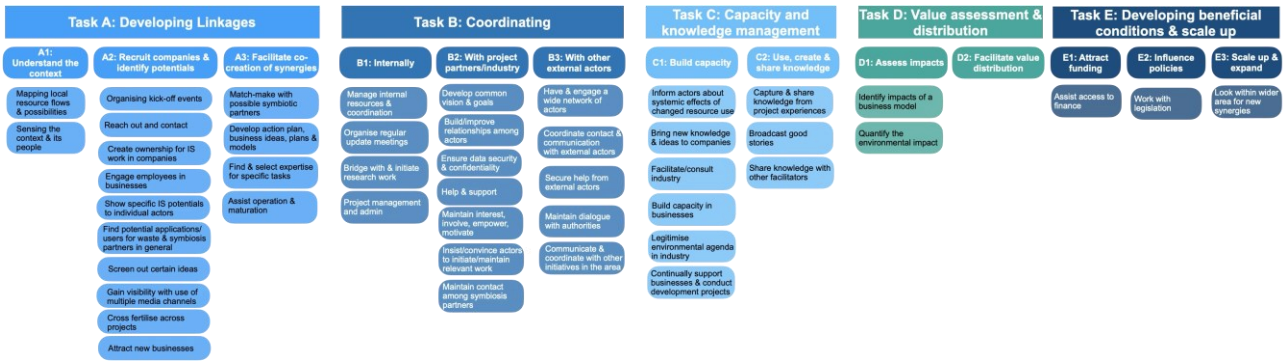


Figure 1: Main tasks and associated first and second tier actions for industrial symbiosis facilitation (Developed by the authors based on Schlüter et al 2022)

[8] Mirata, M. 2004.
[9] Mirata and Emtairah, 2005.
[10] Paquin, R.L., Howard-Grenville, J. 2012..
[11] Park, et al., 2016.
[12] Lindfors et al., 2020.
[13] Södergren and Palm, 2021.
[14] Mortonsen and Kørnøv, 2019.
[15] Schlüter et al., 2022.

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Going a step further, Schlüter and colleagues also explored the skills and capabilities that are important for faciliation activities – their findings are summarised in Figure 2.

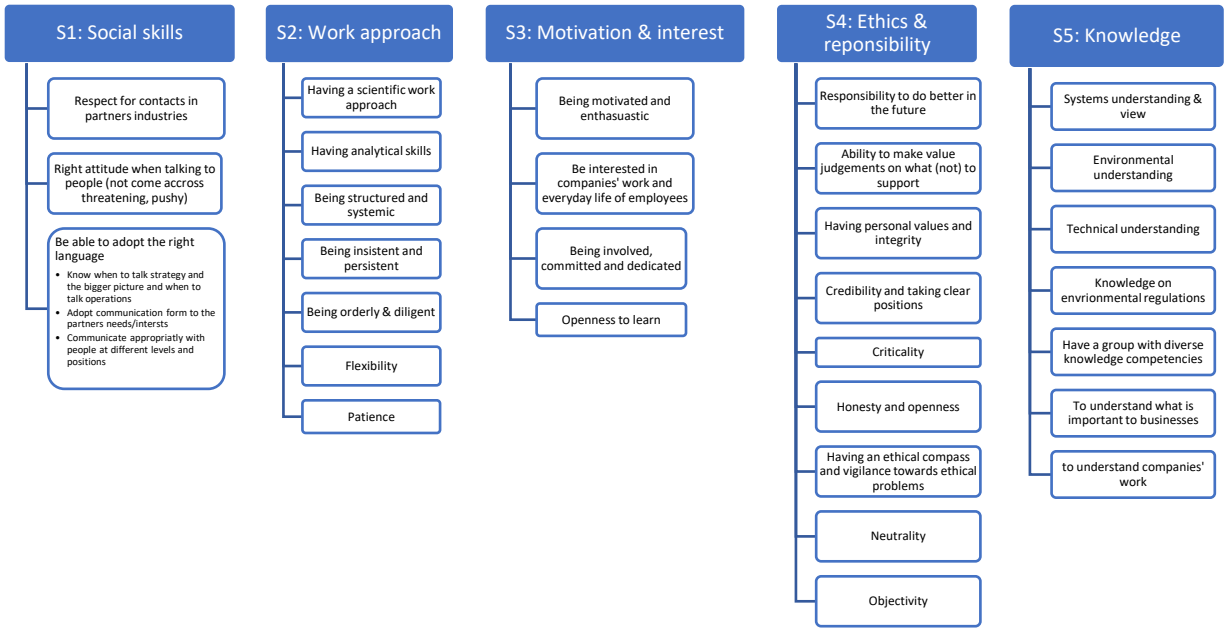


Figure 2: Important facilitation skills (created by authors based on Schlüter et al., 2022)

Although a sub-set of actors can drive the processes, IUS clearly requires critical input from diverse actors. Relatedly, the "regional institutional capacity" concept, adapted from the collaborative governance field by Boons and collaborators, is of particular importance for IUS governance. Regional institutional capacity for IUS (RICIUS) can be defined as "the collective capacity of diverse key actors – including businesses, public bodies, knowledge institutions, financiers, and civil society – to work towards developing symbiotic practices in their context. Rather than being a static factor, RICIUS is seen as a dynamic force that is developed in the context of its use and by the actors who are also final beneficiaries. RICIUS evolves with changes along its three inter-connected pillars, which are:

- **Relational capacity:** Improved formal and informal relationships among diverse actors increase mutual understanding and trust, identify common concerns and opportunities, and increase willingness to work together;
- **Knowledge capacity:** By collectively accessing, generating and using information and data, actors improve their knowledge on symbiotic possibilities, their expected impacts and development needs. Increased knowledge capacity enables prioritization and screening;
- **Mobilisation capacity:** refers to the ability to mobilise actors who can bring the diverse resources needed for developments in different stages[16].

[16] From Mirata, 2025 who built on Boons et al., 2012.

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Combining all of the above, we can recognise regional governance as the structures and workflows that can systemically build and maintain institutional capacity among regional actors to create more fertile conditions for IUS practices.

2.2 Experiences from practice

This section is to be expanded by providing further details of the cases briefly covered here and with additional cases with higher relevance to Attica region.

Practical experiences with IUS facilitation offer valuable guidance. For example, a successful IS development process in the Swedish city of Malmö has been anchored in the municipality and effectively governed by a core coordination team that was led by the municipality and involved additional representatives from universities and local businesses[17]. Among others, this team developed shared visions, planned workflows, identified and supported new symbiotic developments, and influenced the local policy context favourably. However, so far the work remained project-bound with periods of limited progress and actor fall-outs[18].

In a landmark development in Skive, Denmark, a purpose-built facilitation structure (GreenLab Skive) has been successfully driving the development of a circular and bio-based industrial park specialised in creating value from residual streams using renewable energy. The facilitation function works in diverse areas – including visioning, (land) planning, technical assessments, site development, business modelling, financing, policy innovations, monitoring and communications. The work is carried out in close collaboration with local municipality, utility companies, technology providers, universities and research organisations, financiers, national policy makers, local businesses and circular entrepreneurs from around the world[19].

Another structured facilitation can be found in the small municipality of Sotanäs on the west coast of Sweden. In this context, local entrepreneurs, businesses, the municipality and the regional innovation support actors have been working with IUS facilitation since 2012. Their work has gained structure and increased its impact with the establishment of a dedicated municipal entity in 2018 (Sotenäs symbios center – SSC) responsible for catalysing new IUS developments. Among the main functions of SSC are the provision of platforms for stakeholder processes to increase familiarity and trust and to identify joint opportunities. For the ideas local businesses interested in pursuing, SSC then secures support from diverse regional, national, and even international actors to meet their evolving development needs in a dynamic fashion. Among others, a valuable learning from Sotenäs comes in relation to the steering group it maintained until 2022. In addition to an SSC employee, this steering group involved the head of the municipality, the major, representatives from the opposition parties, a multi-circular entrepreneur, businesses (holding rotating positions), and representatives from the regional polytechnic and an innovation support organisation. This constellation was

[17] Main author's personal observations.
[18] Based on direct observations of the first author.
[19] Personal communications with personnel from GreenLab Skive (5-6 April, 2025)

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highly effective, but was eventually dissolved due to politicisation concerns. This highlights the importance of keeping governance functions de-politicised[20].

2.3 Desirable characteristics and building blocks and of governance systems

2.3.1 Desirable characteristics of IUS/H4C governance system

IUS/H4C governance should aspire to fulfil following qualifications:

- **De-politicised and professional:** The governance system should not be influenced by changing political interests and should involve competent and skilled actors that can achieve effective impact efficiently;
- **Neutral and equitable:** IUS/H4C ambitions need to stay place-, resource-, sector- and actor-antagonistic and therefore governance needs remain neutral to different interests and initiatives, should allow for equitable participation and expression, and should assure equitable eligibility for support.
- **Clear and transparent:** There needs to be clarity about actors, their responsibilities, terms of engagements, and decision processes and these should be accessible to all interested parties;
- **Agile and adaptable:** Governance efforts need to be responsive to changes in the immediate and wider contexts and adapt necessary changes to remain relevant and effective;
- **Accountable:** Governance need to take responsibility for its actions and their consequences.

Additional qualifications relevant for different governance system elements are elaborated on in coming sections.

2.3.2 Building blocks of governance systems

Literature findings, practical experiences, as well as similar initiatives aiming to guide IUS governance seem to converge towards governance with diverse actor involvement and with a structure similar to what is presented in Figure 3.

[20] Personal communications with present and past personnel from Sotenäs symbios centrum.

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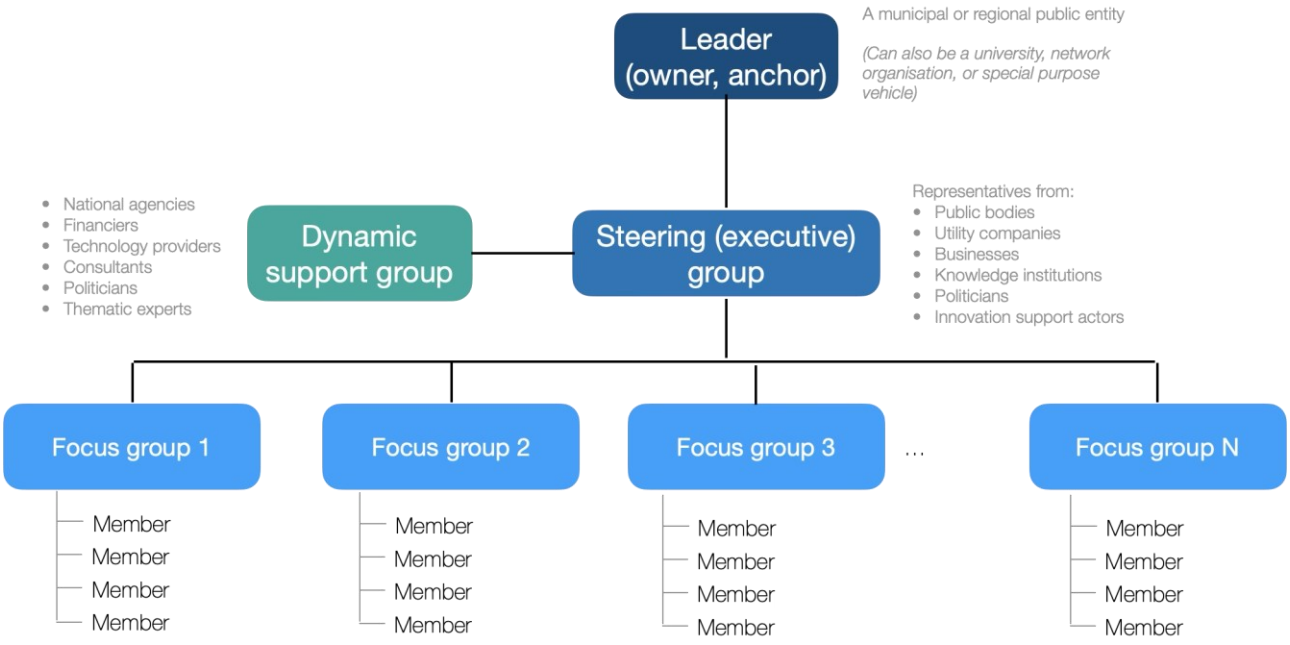


Figure 3: Schematic depiction of a governance structure for IUS (H4C).

2.3.2.1 Governance Lead/anchor/owner

Governance lead/anchor/owner should be the actor, or entity, with overarching responsibility for IUS/H4C governance structure and efforts. As a credible and neutral actor, it can have the ultimate responsibilities for:

- Engaging actors and maintaining the collaborative innovation community,
- Co-creating shared visions, objectives and plans, monitoring progress, and implementing needed updates;
- Initiating, aligning IUS and CE initiatives and overseeing the processes to secure their needed support;
- Monitoring and communicating progress and needs;
- Maintaining communication and coordination with other IUS/H4C initiatives/communities.

It would be desirable if the leading actor/entity has the following qualifications:

- **Embeddedness and longevity:** It will be beneficial if the governance lead is temporally and spatially embedded in the region and is likely to be a part of the regional economic system for a foreseeable future;
- **Credibility:** the actor/entity should be perceived as competent and trustworthy and preferably with a track record of positive impact. It should also have a genuine and balanced interest in, and preferably mandate for, advancing business-, community-, economic-, and environmental-development.

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- **Connectedness and social capital:** The actor should have strong professional and personal relationships with diverse actor and networks and should have social capital to mobilise these in relevant capacities;

2.3.3 Steering/executive group

To assist operational directions and activities and to improve oversight, relevance and transparency a steering/executive group should be formed. More specifically, responsibilities of such a group can include:

- Assisting the development and revision of strategic plans and activities to ensure relevance and impact;
- Assisting idea generation and foresight (ie. pre-feasibility and potential roadblock assessment)
- Assisting actor and resource mobilisation – securing engagement and support from actors controlling diverse development resources;
- Oversight and legitimacy for governance performance and compliance;
- Ambassadorship.

Candidates to involve in this group include:

- Representatives from key municipal and regional public organisations;
- Business leaders ;
- Utility operators;
- Knowledge and research institutions
- Innovation system actors (testbeds, incubators, entrepreneurship coaches)
- Political party representatives;
- Civil society groups
- Financiers.

Depending on the contextual conditions, some of these actor groups can take part in the steering/executive in a rotating fashion to ensure equitability and representativeness.

2.3.4 Focus (or work) groups

The next block of the governance structure include focus/work groups, with primary objective of advancing specific ideas and initiatives. In the Theseus context, these can focus specific initiatives involved in the project – such as re-use of treated wastewater, reuse of textiles, or recycling of construction materials. Responsibilities of these groups can include:

- Performing technical, business and legal feasibility assessments;
- Performing impact assessments;
- Identifying development needs and setting up roadmaps
- Prototyping, Testing and demonstration;
- Monitoring and reporting progress;

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Composition of the work/focus group is likely to be fluid, with the following being clear candidates;

- Project/idea owners
- Knowledge and research institutions
- Thematic experts/consultants
- Public organisations

It will be important for the working groups to maintain communication and coordination with other working groups to address common needs more effectively and to take advantage of relevant learnings.

2.3.5 Dynamic support group

A key task of governance is to dynamically support the initiation and development of collaborations which is likely to face diverse challenges and needs in different development stages. These challenges/needs may require specific inputs from parties external to the regional context or to the governance system and can also be difficult to foresee from the outset. It is, therefore, important that the governance system develops and maintains close relationships with such specialised/peripheral/distant actors so that their input can be secured swiftly when needed. Some candidates to be considered for this dynamic support group include:

- National and European agencies;
- Financiers
- Policy makers
- Technology developers;
- Thematic experts

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3 Methodology

We propose to combine scientific knowledge and practical experiences from elsewhere with the needs and characteristics of the Attica region to propose an appropriate governance structure for this context, while also remaining reflective to our process for crafting generic guidance to other H4C contexts. Rather than following a linear, sequential pattern, our approach will include the following building blocks as needed.

Block 1 - Literature review: We will continue to review the literature to inform our practical objectives by relevant scientific knowledge. Exact orientation of our efforts are hard to specify as this will be needs driven. However, it is likely that we will make use of knowledge from fields such as collaborative governance, city and regional governance, organisational change, and institutionalisation.

Block 2 - Practical experiences: We will also continue our efforts to identify and study practical experiences with IUS facilitation structures and workflows. In selecting cases to study, we intend to focus on: a) metropolitan areas and their surrounding contexts to increase similarities with Attica region, such as the governance of circularity initiatives in and around the cities of Gothenburg (Sweden) and Amsterdam (Netherlands). We will also have discussions with project partners to select other representative cases; b) context where initiatives same or similar to the ones involved by THESEUS are realised, planned, or under development (e.g. we will study the ongoing Swedish initiatives in Göteborg and Umeå for reusing treated wastewater, we will turn to experiences from Lithuania for textile recycling and so on).

Block 3 – Generic stakeholder mapping and analyses: We will systemically identify and screen the actors who can contribute to the IUS/CE initiatives in different capacities – with the guidance of development determinants listed earlier in Table 2. We will then assess to which extent the identified actors are serving in their desired capacity as well as the challenges and the needs they face in having higher impact.

Block 4 – Dynamic identification of needs, actions and actors: We will develop an understanding of the dynamically evolving needs of different of Theseus resource initiatives (e.g. reuse of wastewater, or recycling of textiles) through regular meetings and workshops with actors driving or involved in these. “Needs, actions, actors” framework developed by Linköping University researchers will be used to assist these efforts. This framework enables capturing progress needs in key areas, the actions that can meet identified needs, and the actors that can lead or contribute to the identified activities. Their regular identification over time will allow us to capture governance needs and relevant actions and actors in different development stages for a range of initiatives. The framework to guide these discussions is presented in Figure 4.

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Title of the initiative discussed (e.g. recycling of used textiles)			
Key areas	Important challenges & needs	Required actions for progress	Actors to lead (L), contribute (C), involve (I)
Technical/Operational (practical feasibility)	1. ..	1. ...	1. ...
Managerial (Business support & agreements)	1. ..	1. ...	1. ...
Economy and Finance	1. ...	1. ...	1. ...
Regulatory/legal (permits)	1. ...	1. ...	1. ...
Knowlege	1. ...	1. ...	1. ...
Social aspects (Acceptance, communication)		1. ...	...

Murat Mirata, 2025

Figure 4: Needs, actions, actors framework to guide identification of governance needs and solutions.

Block 5 – identifying and engaging qualified actors: Along with our improving understanding about needs, relevant actions and qualified actors, focused work groups for individual Theseus initiatives will be formed. Alongside, regional stakeholders, including those that are already involved in specific focus groups, will be screened to identify actors who meet the criteria presented in Section 2.3 to lead the overarching governance processes. Actors that are eligible to be a part of the steering/executive group will also be identified. These actors will then be approached to explore their interests and needs to serve in proposed capacities. **How do we move from here to forming a governance body is yet to be determined!**

Block 6 – Proposal for the governance structure: Individual and collective discussions will be held with actors who are positive about serving in proposed capacities to explore their interests, ideas and needs for short- and long-term activities, roles, responsibilities, and terms of engagement. Based on the outcomes of these discussions a proposal for the Attica IUS/H4C governance will be proposed.

Block 7 – Guidance to other H4C contexts – the workflows and experiences from Attica region will be carefully documented and reflected upon to formulate generic guidelines that can assist other H4C contexts.

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4 Governance needs, actions and actors in Attica

In this section the governance needs of Attica will be elaborated on. This will be done both at the level of individual initiatives and, connectedly, at the regional level.

Note that the following headings may need to be further divided to investigate the governance needs at the right level of resolution – e.g. we may need to study the "governance needs for valorising municipal solid waste for new packaging applications".

4.1 Irrigation of public parks with treated wastewater

So far, our work with advancing governance needs has advanced the most in relation to the reuse of treated wastewater. The findings of an initial workshop focusing on the irrigation of public parks with treated wastewater is presented in Figure 5.

Irrigating public parks with treated wastewater (Sewer mining)

Key areas	Important challenges & needs	Required actions for progress	Actors to lead (L), contribute (C), involve (I)
Technical/Operational (practical feasibility)	1. space (hard in dense urban environments) 2. Sewage network needs to be passing nearby and have enough flow 3. Seasonal demand - in summer there is high demand and in winter it is almost zero.	1. to provide needed space 2. finding a location with sufficient flow 3. additional solutions need to be discussed - aquifer recharge, using in fountains, cleaning, fire-fighting systems. basically finding needs in winter time.	1. municipalities themselves, as they own land in these areas 2. regarding demand match - the municipality's urban green dept, they know the needs of particular parks as they monitor potable water usage. Apart from the municipality, the ministry of environment can explore alternative uses (they also need to provide special permit)
Managerial (Business support & agreements)	1. ownership of the space		
Economy and Finance	1. water has a very low price, municipalities may be using a lot of water for irrigation, but it is public money, so the actual costs are not very visible. but at the same time it is a big challenge for municipalities to reduce the water needs. in Attica they bring the regional water use from 300 kms away - 1.7 M people are in the metropolitan area. EYDAP needs to find alternative sources and reuse options to replace. 2. Attitidues of users who will make the system work	1. True cost of water use need to be established. Generally in Athens the tap water is very low priced (in islands it is much more expensive). 2. Municipalities and the utility company needs to provide motivation for increased prices, or perhaps paying less taxes (municipalities using recycled water can be eligible for tax reductions elsewhere to provide financial incentives. the ministry need to look into this, others don't have the authority. otherwise they won't switch to recycled 3. Municipalities who use these kinds of solutions need to awarded. they may need additional resources to educate the citizens, etc. the central govt can provide the funds to improve acceptance, and provide security for people who will use it. 4. Communication needs to be adjusted to improve public acceptance. (in another area there were demonstrations for another sewer mining unit, due to the naming. the name "sewer" is not perceived well. it needs to be more acceptable (engineers may not pay as much attention to this).	1. University can work with the utility companies to establish the true cost of water; 2. Municipalities, utility companies, and ministries need to work on incentives; 3. Municipalities, utility companies, and ministries need to provide education. 4. Social scientists/behavioral experts need to provide guidance for improved communication.
Regulatory/legal (permits)	1. Special permits are required a. from the ministry of environment for public health concerns (special requirements such as smell, safety in cases of contact with public need to met) b. if parks are dense with trees, also from the ministry of forestry. (they may require an amendment of their management plan which requires feedback on it is safe to use for unlimited irrigation. they also need to make sure no trees are cut for space.) c. if they are in an archeological area, there are also other challenges.	1. Permit for the space to set the treatment unit needs to be acquired. 2. Envl permit for reusing water and irrigation of the soil needs to be acquired. 3. New knowledge needs to be established to assist authorities categorise these kinds of use cases as suitable. 4. To enable similar developments beyond Theseus, new permit processes need to be established and enter into law.	1. Region of Attica needs to issue the permit for using the space 2. Ministry of environment and the "regional administration, water directorate decentralised administration" need to issue needed permits. 3. Ministries need to establish appropriate permit processes to replicate similar solutions elsewhere. 4. University and consultants need to produce the right assessments and knowledge to assist permit processes.
Knowlege	1. finding appropriate sewage network placements	1. Right locations with proximity to parks and and sufficient flows need to be identified.	1. EYDAP - they can help with GIS and other info they have
Social aspects (Acceptance, communication)	People's acceptance needs to be secured.	1. Engagement and education from very early stages - even before the construction of the units. Find references from similar units elsewhere, this eases the acceptance.	1. Municipalities need to help inform the residents in the area. 2. NTUA can provide info on reference cases. 3. The water utility companies can help with references and detailed information about specific projects,

Figure 5: Findings of the initial workshop on goverannce needs for irrigating public parks with treated wastewater.

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4.2 Bio-char production and use

This section is to be developed in next versions.

4.3 Collaborative renewable and residual energy solutions

This section is to be developed in next versions.

4.4 Textile reuse and recycling

This section is to be developed in next versions.

4.5 Valorising municipal solid waste in packaging, biobased materials, and metals

This section is to be developed in next versions.

4.6 Construction and demolition and industrial waste valorisation.

This section is to be developed in next versions.

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5 Proposals (and experiences?) for IUS (or H4C) governance in Attica

5.1 Proposed governance structure

5.1.1 Governance lead/anchor and responsibilities

This section is to be developed in next versions.

5.1.2 Executive/steering group structure and responsibilities

This section is to be developed in next versions.

5.1.3 Work/focus groups and responsibilities

This section is to be developed in next versions.

5.1.4 Support group candidates and responsibilities

This section is to be developed in next versions.

5.1.5 Member organisations and responsibilities

This section is to be developed in next versions.

5.2 Priority actions for the IUS (H4C) governance in Attica

This section is to be developed in next versions.

5.3 Governance experiences in Attica (subject to mobilisation within project)

This section is to be developed in next versions.

5.4 Needs and strategies for more effective IUS (H4C) governance in Attica

This section is to be developed in next versions.

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6 Guidance for IUS/H4C governance in other contexts

This section is to be developed in next versions.

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7 Conclusions

This section is to be developed in next versions.

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Annexes

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