



D.5.6. Long-term plan to use project results in cities, companies and research networks

Kinga Krauze, Pascal Breil, Kati Vierikko



Contents

1. Introduction	3
2. Key messages	3
3. Audiences	3
4. Objectives	4
5. Potential values and products of ATENAS to capitalize on.....	4
5.1 Experience	4
5.2 Implementations.....	4
5.3 Research.....	6
6. Established links and means to disseminate ATENAS.....	7
6.1 UNESCO IHP	7
6.2 LTER.....	8
6.3 AlterNet.....	8
6.4 Biodiversa+ BioDivClim Knowledge Hub	8
6.5 OPPLA.....	9
6.6 Wikipedia.....	9
7. The planned steps for long-term use of project results.....	9
7.1 STEP 1 To publish.....	9
7.2 STEP 2 Direct uptake of products and know-how	10
euPOLIS: Integrated NBS Urban Planning Methodology for Enhancing the Health and Well-Being of Citizens: The euPOLIS Approach.....	10
BioAgora.....	11
Life + RainMan	11
Natura Network	11
Case by case result use and life beyond the project.....	11
7.3 STEP3 To empower implementations upscaling.....	12
7.4 STEP 4 To continue being visible - websites & long-term training programmes.....	13
7.5 STEP 5 Empower implementation of NBS in the future	13

1. Introduction

ATENAS aimed to contribute to closing the water cycle gap through securing water cycling and the quality of urban runoff and of CSOs by using Nature-Based Solutions (NBS), but also increasing the resilience of urban systems to dry periods. The ambition was to increase project's impact through triggering learning process among the water users. For that purpose, it established demo-sites in a gradient of urban pressures and urban dynamics, and a number of approaches to embrace a range of conditions for future applications.

Learning from the experiences of UNESCO International Hydrological Programme, which pointed as the most urgent scientific gaps that handicap NBS implementation:

- incomplete understanding of hydrological processes linked with atmosphere/biosphere/human society, lack of data integration,
- scaling issues,
- predictive capabilities of hydrological interactions and feedbacks with socio-ecological systems,
- incomplete evidence and knowledge base for nature-based solutions,
- uncertainty communication, as well as
- the significant role of people and their behaviours for sustainable water resource use and development.

ATENAS incorporated a lot of above issues in its work plan. Being a small scale project, it still managed to tackle and study in its living labs NBS potentials and traps, perception of nature and its functions in cities, minimum data requirements, how to elaborate the optimal NBS implementation paths, and the importance of flexible approaches and adaptable solutions, whenever water cycle is to be sustainable managed under climate uncertainty.

2. Key messages

ATENAS key messages are:

- Water is a limited natural resource, which should not be assumed as renewable under climate change;
- Water management and planning must become a core of spatial planning, education, investment;
- Water challenges require broad, multi-stakeholder collaboration and mutual learning, but centralized, well targeted management and decision-making;
- Nature-Based Solutions are a way to deal water and climate challenges, however urban nature needs support with advanced solutions: biotechnology, hybrid infrastructure, phytoremediation, ecosystem engineering;
- Only shared, responsible local stewardship, taking a form of monitoring, maintenance, early warning, secures success of NBS under strong climate and anthropogenic pressures.
- Testing NBS is the only way forward to broad scale implementations.

3. Audiences

- ATENAS key messages should be directed in the first round to local decision makers as the project demonstrated their leading role in setting up NBS implementation.
- The second group of audiences form city residents, whose attentive and responsible attitude to nature is fundamental to its existence in the city.

- The third group of ATENAS audience is business, as there is an obvious market for innovation, technology, and know-how with regard to NBS; secondly, in the absence of strong regulation (what may change after adoption of Nature-Restoration Law), this sector should raise its responsibility for water, biodiversity and climate, being strongly dependent on them.

4. Objectives

- A. To ensure continuation of flow of news, information, and suggestions to interested parties on NBS options;
- B. To harvest from data and knowledge collected during ATENAS;
- C. To continue building society of knowledge and action around ATENAS pilots and products;
- D. To secure proper operation of ATENAS implementations, and in case of the Helsinki metropolitan area the final implementation to happen;
- E. To share ATENAS experiences for raising awareness of NBS pros and cons and maintenance obligations
- F. To support administrative and legal changes that will fill the gaps identified by ATENAS, and reinforce ATENAS upscaling;
- G. To contribute to an efficient uptake of results and the transfer of knowledge to all actors interested in NBS.

5. Potential values and products of ATENAS to capitalize on

5.1 Experience

The great advantage in terms of getting experience was pandemic of COVID-19. ATENAS has been built around the concept of transparency, fairness, broad stakeholder engagement, co-production of knowledge and building responsibility for blue - green neighbourhood. Because the straight implementation of action plan appeared impossible we were forced to seek for new means of communication, involvement and mutual learning. To replace part of direct interaction we carried extensive study of projects and literature on NBS to learn more about the options, opportunities and traps, which has been currently processed for subsequent ATEANS cook book chapter. The study included also the way society received different solutions. ATENAS built also stronger links with other consortia, e.g. H2020 Reconect (<http://www.reconnect.eu>), NATURA Network (<https://natura-net.org>) to intensify and speed up learning about critical NBS experiences around the world.

Many of the project tasks have been delegated to project associates and friends, including civil society. In Łódź those were NGOs who run NBS consultations and social animators who took the challenge to inform one by one potential users of the implementation area.

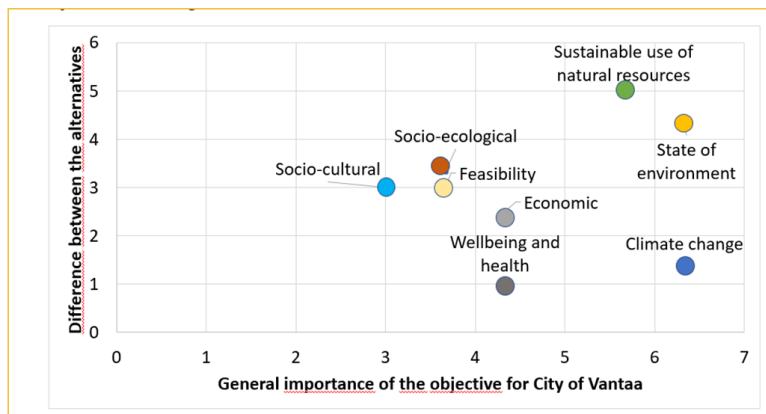
We also learn how to better use online tools: miro, canva, mentimeter to engage people in discussion and trigger an out of the box thinking. Some of experiences have been already shared during the workshop for local autonomies organized by the Stocznia Foundation and dedicated to public perception of blue-green infrastructure and its services provided by NBS (<https://partycypacjaobywatelska.pl/przestrzen/2022/12/14/projekt-przestrzen-dla-partycypacji-2-zrealizowany/>).

5.2 Implementations

ATENAS generated very tangible products in all its demonstration sites together with extensive documentation in national languages.

In the Helsinki metropolitan region, it has become part of the municipalities' sustainable spatial planning efforts, with focus on low impact development. ATENAS left the heritage of conducted consultations over local plans, detailed analyses of bio-geohydrological conditions and corresponding NBS options, well recognized and visualized options ready-to-take by cities and a

number of tools facilitating consensus over the solutions: multi-criteria decision analysis, green factor, SWMM model, etc. It also helped to go for subsequent iterations of views and discussions developing the methods to clearly compare NBS options (Fig. 5.2.1).



City planners' estimates of the differences in the importance of the main objectives in the Kivistö case, taking into account the general importance of the objective and the differences between the alternatives. Importance: 1= Not very important objective, 7= Very important objective. Differences between options: 1= Not much difference, 7= Very large difference between options.

Fig. 5.2.1. The methodology developed by city planners to help the stakeholders to compare pros and cons of different spatial projects assuming different level of NBS naturalness, suitability for recreation, water retention types.

In Lyon the uptake product become porous ramps. The idea of how to improve self-purification ecosystem in rivers subjected to sewage leakage has been transformed into a number of prototypes and final pilot implementations. ATENAS facilitated also data gathering, monitoring and improvement process. It delivered the full know-how description as well as maintenance guideline. We communicated also the possible problems and obstacles that may arise, like controversies over the NBS impact on fish communities, dealing with after-flood damages, options of strengthening the structure of the ramp if needed.

Łódź dealt with fears of inhabitants and municipality over the possible impact of any water NBS on infrastructure and the chances of project failures due to overflow, drought, vandalism, labour-intensity and maintenance burden. The construction steps, early warning signals and related to-does have been provided in the maintenance guidelines.

We implemented two NBS – one in close proximity of the university building as a proof it can be done safely (Photo 1). It was a response to abandoning of the programme “150 façade gardens” by the municipality. It was caused by the failure of the gardens which were not equipped with water harvesting systems, what was a consequence of the concerns over the influence of infiltrating water on building basements.

The second NBS constitutes of three infiltration basins, structures never before constructed in the city. They were located in the valley of drying Łódka River as a starting point of broad scale action. The implementation was intended to demonstrate: possibility of low-impact transformation of existing green spaces towards water NBS, the way of linking it with an upgrade of the space and its attractiveness, creating the conditions for social inclusion (Photo 2).



Photo 1. The façade garden constructed within ATENAS project at the building of the Faculty of Biology in Łódź (credits E. Urbaniak).



Photo 2. ATENAS infiltration basins and new habitats for pollinators (credits R. Włodarczyk-Marciniak).

5.3 Research

The key research outcomes produced by ATENAS have been described in detail in the Technical Report. As the project appeared to be more labour intense than expected, especially due to the necessity to develop new, more diverse, group focused, and following restrictions ways of engaging the stakeholders, ATENAS still didn't make use of all the data and information it collected (Fig. 5.3.1). It is a great input to a number of scientific papers, working materials and popular articles. The resources we own include for example:

- MCDA method, outcomes, a story of stakeholder engagement, views and attitudes to nature and NBS;

- Green Factor as a method to stimulate discussion over upgrading a space and equipping densely built-up areas in NBS; the strong and weak points of proposed solutions and making the best choices;
- Using InVest as a screening tool to preserving existing nature and localize NBS in the areas critical from the point of view of UHI mitigation, this is the more important the more vulnerable NBS become to adverse effects of combined climate uncertainty and urbanization;
- Data series indicating efficiency of porous ramp, metabolism of urban soils, dynamics of climate conditions in city centre (Łódź) and suburbs (meteobot stations being part of extended network);
- Information coming from socio-ecological studies: behavioural mappings of the Łódź implementation area and comparative studies of other green areas of similar characteristics with recommendations for the upgrade, survey on water perception, NasCanvas results, critical review of pros and cons of NBS, etc.

SCIENTIFIC AND TECHNOLOGICAL RESULTS

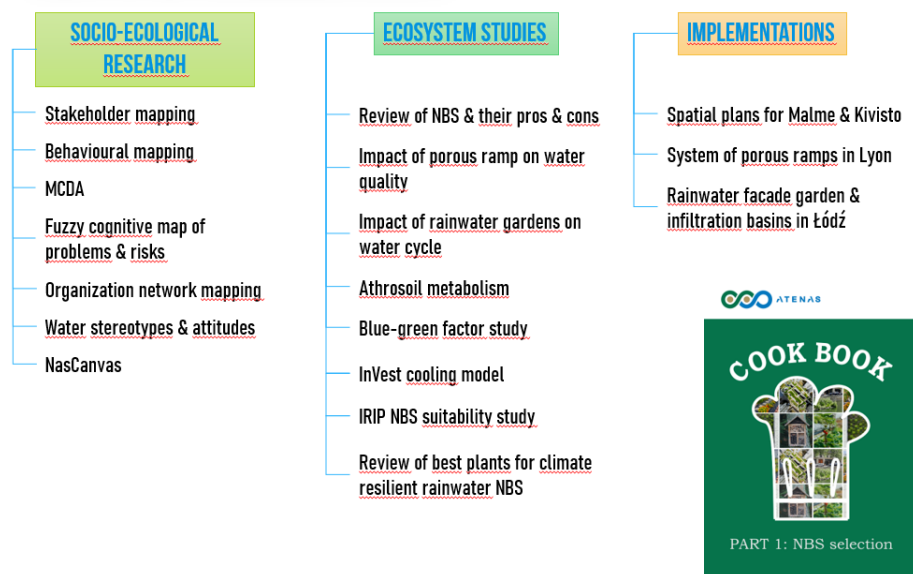


Fig. 5.3.1 Overview of scientific and technological results to be exploited after the project end.

6. Established links and means to disseminate ATENAS

6.1 UNESCO IHP

ERCE PAS and INRAE are involved in the UNESCO IHP Ecohydrology programme. The WaterWorks 2017 experiences contributed to framing The phase IX IHP 2020-2029 strategic plan's priority 1 area: Scientific Research and Innovation. ATENAS contributes to several desirable outputs there, in particular: 1.5. *Undertaking and sharing assessments on the interaction between humans and water, in line with socio-hydrology by the scientific community supported to develop adaptive pathways, scenarios and strategies for water management*, and 1.8. *Development and sharing of knowledge and innovative solutions on improving water quality, and reducing water pollution by the scientific community supported and communicated to support science-based decision-making, improve knowledge, services and reduce health related risks*. The transfer of gained knowledge from ATENAS sites to broader UNESCO Water Family is facilitated by its engagement in 1.2. *Ecohydrology research and innovation at UNESCO-designated sites conducted and shared by the scientific community and UNESCO Water Family, communicated to assess the impact of*

ecohydrological and nature-based solutions on water cycles and include such solutions in Integrated Water Resource Management (IWRM) and services at all scales and in Sites' management.

6.2 LTER

Helsinki, Łódź and Lyon are platforms of long-term socio-ecological research of LTER-Europe Network^{1,2,3}. Currently LTER runs two projects aimed at preparation of implementing the Integrated European Long-Term Ecosystem, critical zone and socio-ecological Research infrastructure (eLTER RI) - The eLTER Preparatory Phase Project (eLTER PPP) being the HORIZON 2020 funded Coordination and Support Action and The Integrated European Long-Term Ecosystem, critical zone and socio-ecological Research infrastructure Advanced Community project (eLTER PLUS) being a HORIZON 2020 funded Research and innovation action (RIA). ATENAS demos are being used as a testing plots to recognize the need for data, operational structure, and research facilities necessary to contribute to development of NBS knowledge base and to enable its uptake by end users being scientific community, civilians and business. It contributed to advancing community competences in three areas: networking, joint research activities and transnational, remote and virtual access⁴.

6.3 AlterNet

AlterNet⁵ is a network of partner institutes from 18 European countries originally funded by the EU FP VI as a network of excellence to stimulate assessing changes in biodiversity, analysing the effect of those changes on ecosystem services and informing policymakers and the public about this at a European scale. Currently ALTER-Net is operating independently, contributing to the lasting integration of Europe's research capacity on biodiversity. ERCE PAS, SYKE and INRAE are the members of the network and its board.

Since 2004 AlterNet has been pulling together data and knowledge from LTER and non-LTER sites that help, among the others: analysing socio-ecological interlinkages and identifying bottlenecks for nurturing biodiversity and ecosystem services, and finding effective ways to communicate biodiversity issues to a wider range of audiences including politicians. AlterNet means for meeting the goals are: networking scientists and policy makers, summer school, 2-yearly conference, multi-sites experiments and collaboration with Eclipse, IPBRS and LifeWatch RI. ATENAS tasks related to identification of policy and funding schemes that enable or jeopardize NBS as well as public attitudes towards blue-green infrastructure and views on its roles for delivering ecosystem services, extend the information and expertise of the network and will help to set up future priority actions.

6.4 Biodiversa+ BioDivClim Knowledge Hub

Biodiversa+ has launched a Pan-European Knowledge Hub on the topic "Potential of nature-based solutions for mitigating and adapting to climate change". The BioDivClim knowledge hub is a community of practice that aims at enhancing research collaborations, knowledge and data sharing and academic outputs, as well as supporting science-policy/science-society interfacing to increase the impact of funded research. SYKE (Kati Vierikko) is a member of Science-Policy Interface (SPI) Knowledge Hub⁶.

¹ <https://deims.org/35e3775a-88bc-483f-aed0-b614ce7736e2>

² <https://deims.org/cb1f4a9f-f6e3-4d2a-8b34-2f9c4c3f61b8>

³ <https://deims.org/6c81a46f-a830-4bc1-8ccd-a0f023583ec7>

⁴ https://drive.google.com/file/d/1BFVdi_l4jNZ3HT5_20qYx3e2LPM5KPJB/view

⁵ <https://alterneteurope.eu/about/>

⁶ <https://bringingnatureback.com/research-news/research-impact/binatur-joins-the-biodiversa-knowledge-hub-on-potential-of-nature-based-solutions-for-mitigation-and-adapting-to-climate-change/>

6.5 OPPLA

One of the means to disseminate ATENAS and to link up with similar projects and NBS demonstration cases is Oppla portal. ATENAS has been published as a project - <https://oppla.eu/casestudy/29353>, and individual implementations (Fig. 6.5.1). The portal is a source of partners for the follow up projects, therefore we plan to subsequently submit other ATENAS materials, in particular Cook Book which has been partially uploaded and is waiting for approval by website coordinators.

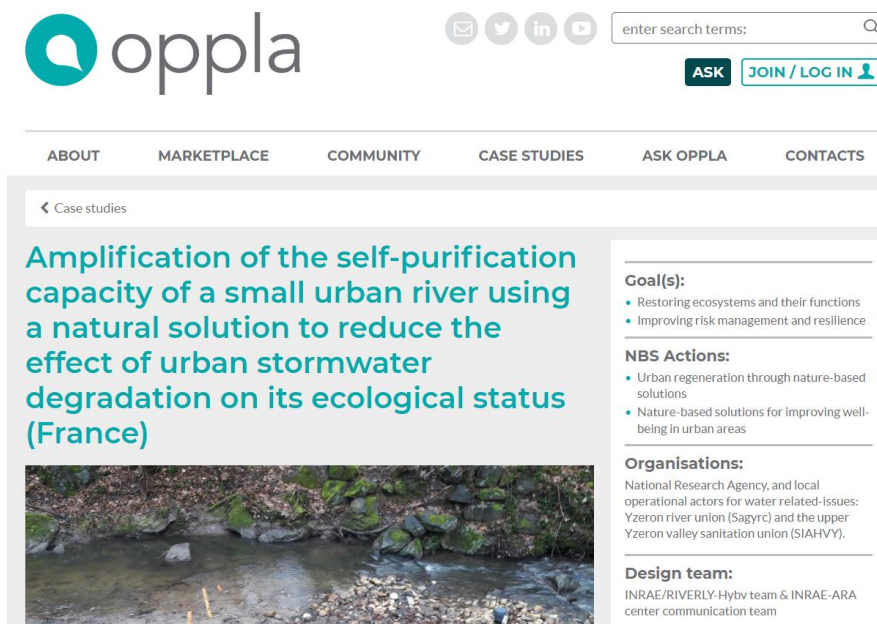


Fig. 6.5.1. ATENAS case study from Lyon on Oppla

6.6 Wikipedia

One of ATENAS product – Intense Runoff Model IRIP has already been published on Wiki website (<https://fr.wikipedia.org/wiki/IRIP>). There is a plan to develop Wikipedia for the whole ATENAS project to enable easy access of all the stakeholders to all the products and information. Wiki offers also a possibility to publish materials in different language version, what makes it attractive means of communication.

7. The planned steps for long-term use of project results

7.1 STEP 1 | To publish

The priority for beyond the project use of its results are publications, in preparation to be published in 2023-2024 are:

1. Włodarczyk-Marciniak, R., Krauze, K., Adamiak, E., XXX. Is blue infrastructure providing any ecosystem services? Public perception of modified and unmodified urban water bodies. The case study of the City of Łódź (Poland).
Paper to be submitted to AMBIO, in final check before the submission.
2. Krauze, K., Włodarczyk-Marciniak, R., Breil, P., Vierikko, K., Rehunen, A., Perlińska K., XXX. To go or not to go, are we stereotype driven in attempts to water NBS?
Paper to be submitted to Ecology and Society, in data analysis phase.

3. Lähde, E., Piirainen, P., Dahlberg, N. & Rehunen, A. XXX. Ensuring multiple benefits of urban water NBS in infill areas: Comparing green factor for districts and SWMM modelling in scenario assessment.
Paper submitted to Environmental Processes, special issue “Sustainable Drainage Systems (SuDS)
4. Krauze, K., XXX. Towards social resilience in water-related decision making process. Testing the power- urgency-legitimacy method for analysis stakeholders’ role in environmental management.
Paper in preparation for Journal of Environmental Psychology.
5. Urbaniak, M., Mierzejewska, E., Bednarek, A., Włodarczyk-Marciniak, R., Krauze, K., XXX. Untapping the potential of soil microbial functional diversity for evaluation of urban nature-based solutions – the case of Łódź ATENAS demo site (Central Poland)
Paper prepared for submission to PLOS ONE.

Additionally, next two chapters of the ATENAS Cook Book, being summary of deliverables are in the process of editing:

- What are nature-based solutions for water management?
- Catalogue of ATENAS solutions and their suitability according to pros and cons.

7.2 STEP 2 | Direct uptake of products and know-how

euPOLIS: Integrated NBS Urban Planning Methodology for Enhancing the Health and Well-Being of Citizens: The euPOLIS Approach

euPOLIS is a H2020 project, and a younger sister to ATENAS. It started in the midst of ATENAS social engagement and NBS implementation tasks. The euPOLIS aims to improve public health in cities by introducing nature-based solutions into urban planning practices. It is realized in the City of Łódź. Using ATENAS know-how we plan to construct another, bigger system of infiltration basins with simultaneous improvement of habitats for urban wildlife, as well as aesthetics and functionality of the site. Located in the deteriorated and hit by social exclusion district, the euPOLIS demonstration site already learns from ATENAS experiences regarding how to collaboratively plan the blue-green infrastructure, which elements of urbanscape are particularly valued, and how to make citizens interested, engage them and build shared responsibility for NBS.

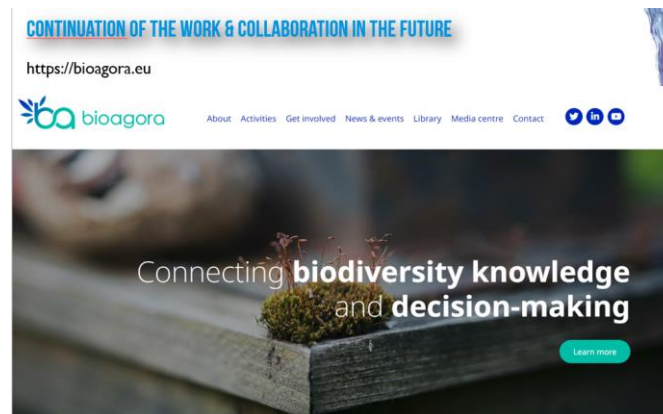
euPOLIS goes beyond ATENAS with respect to analytical framework including strong IT support in tracing change of environmental conditions as a result of NBS implementation and its impact on people mental and physical conditions.



Fig. 7.2.1 The project of euPOLIS NBS implementation.

BioAgora

BioAgora (2022-2027): *Connecting biodiversity knowledge and decision-making* is a collaborative European project funded by the Horizon Europe programme (see more here: <https://bioagora.eu/about-bioagora/>). It aims to connect research results on biodiversity to the needs of decision-making in a targeted dialogue between scientists, other knowledge holders and policy actors. Its main outcome will be the development of a fair and functional Science Service for Biodiversity, that will orchestrate processes and initiatives at the Science-Policy Interface at the European level. All three partners of ATENAS are members of BioAgora.



Life + RainMan

The follow up of ATENAS and opportunity to transfer its know-how is a Life + RainMan project “Optimal rainwater management in urban space - reduction of the threat and risk of urban flooding based on NBS solutions”, prepared for 2023 call. In this case the uptake of the results of the project are foreseen in four medium and small size Polish cities: Zgierz (Łódź Metropolitan Area), Pleszew (Western Poland), Lublin (Eastern Poland) and Elbląg (Northern Poland).

Natura Network

ERCE PAS and LTER-Europe are partners in the NATURA network⁷: “Nature-based solutions for Urban Resilience in the Anthropocene” - educational project funded by US National Science Foundation. It links networks in Africa, Asia-Pacific, Europe, North and Latin America, and aims to enhance connectivity among the world's scholars and practitioners and improve the prospects for global urban sustainability. NATURA exchanges knowledge, shares data, and enhances communication among research disciplines and across the research-practice divide to advance urban resilience in face of growing threats of extreme weather events. ATENAS has been already presented in LTER-Europe delivered webinar, and is to join the network also with the sites.

Case by case result use and life beyond the project

Helsinki

ATENAS project activities: land use scenarios and combined analyses of regional green factor tools and hydrological modelling in the city of Helsinki (Malmi case) and multi-criteria decision analyses Vantaa (Kivistö case), were implemented into the ongoing planning processes. Results have supported co-design and collaborative planning and have had an impact to planning. In both cases, the urban planning processes continues several years and opens new collaboration opportunities for SYKE researchers. Both cases have produced new contacts to planners, designers and water

⁷ <https://natura-net.org>

engineers in the city of Helsinki (Malmi case) and Vantaa (Kivistö case). This collaboration has continued in the Bringing nature back to cities (BiNatUr) that are funded by the BiodivRestore COFUND Action, BiodivERSA and Water JPI.

Lyon

The results of the ATENAS demonstration site form part of the work of the OTHU urban hydrology observatory, as well as the UNESCO ecohydrology network.

OTHU was set up in 2000. It is a consortium of research laboratories and managers for the city of Lyon and its conurbation (<http://www.graie.org/othu/index.htm>).

A summary of its work, entitled "Urban rainwater management", was published in 2022. This publication is intended for use by engineering consultants. It is currently being translated into English for online publication by end of 2023. A link to ATENAS website will be integrated. The porous ramp demonstration sites (pilot and ATENAS site) are cited in Chapter 6.2 as an example of urban stormwater management⁸.

The Yzeron basin has been a UNESCO Ecohydrology demonstration site since 2015⁹. The aim of the site is to show how the principles of Ecohydrology, as understood by UNESCO, can be used to identify, on a catchment scale, the best areas for action to restore a balance between the flows of water polluted by human activity and the natural or amplified flows of bio-transformation. There are now more than 30 ecohydrology demonstration sites across the world. A review of the sites is planned for 2024 to take stock of thematic developments, publications, research projects and transfers to applications (replication). The ATENAS project will be linked.

This will make the results of the ATENAS project available at national and international level.

Łódź

The ATENAS pilots in Łódź allowed creation of a network of people interested in NBS. It includes activists especially societies taking care of city trees and greenery in general, and youth climate strike, but also local communities and academics gathering evidence on the NBS role in cities' climate adaptation.

The modelling applied in ATENAS has been already adopted by the municipality to evaluate local spatial plans, especially InVest city cooling model and Green Factor.

Łódź sustains two demonstration projects of UNESCO IHP Ecohydrology Programme. Currently ERCE re-applied with only one site incorporating those two projects and ATENAS and euPOLIS sites. By doing this we want to share within the UNESCO Water Family an example of city scale approach to re-building the blue-green network, with a number of terrestrial and aquatic NBS.

7.3 STEP3 | To empower implementations | upscaling

The ultimate task going beyond the project is support for upscaling of ATENAS solutions developed in Łódź and Lyon. The latter has been already confirmed by the leading stakeholders. The Łódź pilots raised interest of municipality, and have been already cited under different occasions as possibility to upgrade city spaces, in particular within the city centre undergoing integrated revitalization.

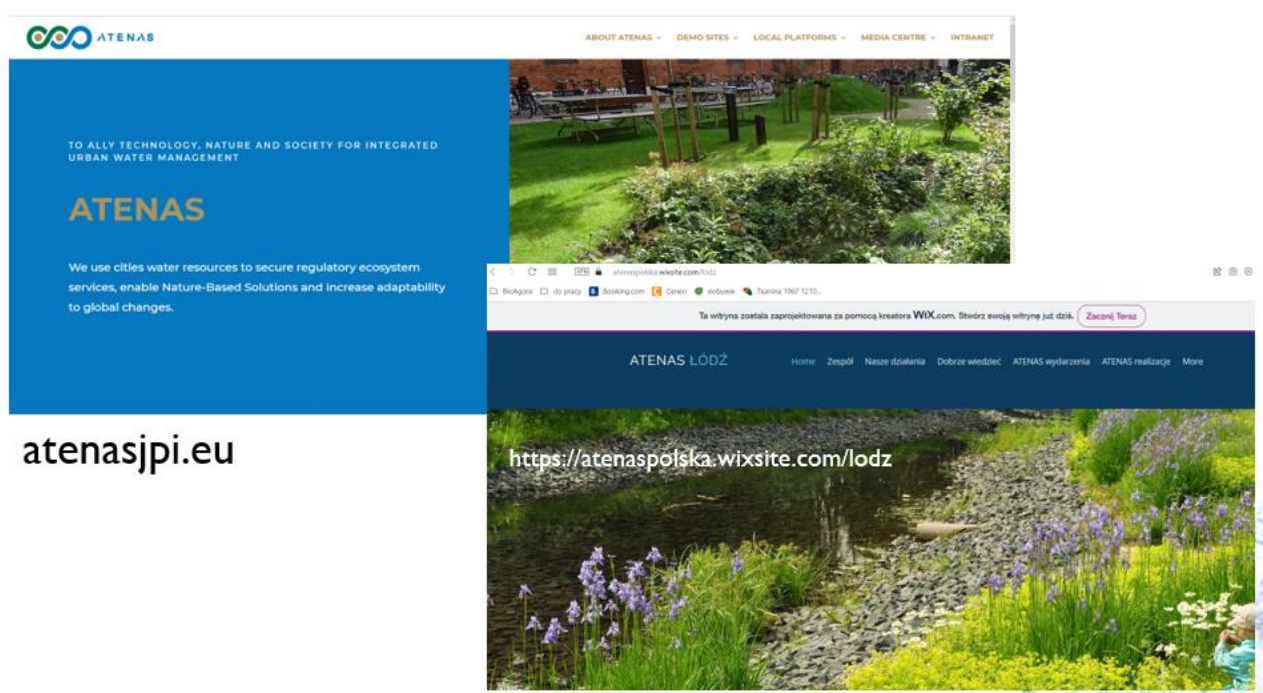
⁸ https://www.graie.org/graie/graiedoc/doc_telech/OUVRAGE-OTHU/OTHU_GEPV%202022_Chapitres/OTHU_GEPV%202022_Chapitres/OTHU-GRAIE_GEPV%202022_Chapitre6-IMPACT.pdf

⁹ <http://ecohydrology-ihp.org/demosites/view/1150>

In Helsinki the step forward will be accomplishment of the process of making decisions over land development in Vantaa. The two alternatives designed as a result of MCDA, have finally been rejected by the creators as not satisfactory enough. The third option is currently developed.

7.4 STEP 4 | To continue being visible - websites & long-term training programmes

We plan to extend the upscaling activities to other products of WaterWorks2017 projects. The evaluation meeting indicated a number of projects producing supplementary or complementary tools, like EviBan, NATWIP, NEWTS or Rain Solutions. As both websites of ATENAS are to be maintain for at least next 5 years, the links to other JPI Water projects can be published there to increase the uptake of knowledge.



atenasjpi.eu

Running the websites will help to keep the network of ATENAS stakeholders alive. It will also help to share information about local, national and international events related to NBS among stakeholders.

All the follow up projects and new NBS implementations will also be published.

7.5 STEP 5 | Empower implementation of NBS in the future

- Infrastructure needs: from components of NBS knowledge to research (LTER)

The importance of long-term data, efficient data management and sharing, presence of laboratories, testing grounds, and pilot implementations to facilitate switch from conventional to hybrid and fully nature-based solutions have been discussed within consortia of eLTER projects. The lessons learned from ATENAS regarding indicators to assess NBS performance, the best tools to use for communication or modelling purposes have been also communicated in order to better plan the common services which should be provided by European research infrastructures.

- Link up with policy (AlterNet)

There are still policy gaps which either corrupt the efficient NBS implementation or handicapped processes which could possibly stimulate their broader testing and evidence building. AlterNet and

BioAgora project can be a good media to efficiently communicate between academics, municipalities and policy makers, to ensure a coherent approach to green transformation across disciplines and sectors.

- Teach future teachers

ATENAS serves teaching purposes. ERCE in collaboration with University of Łódź and University of Algarve, organizes courses and workshops on Ecohydrology and NBS, and field visits to NBS implementation sites. ATENAS sites have been included in the programme of teaching of The Erasmus Mundus Joint Master in Applied Ecohydrology (MAEH). It is a two year master programme (120 ECTS credits) offered by four European Universities: University of Algarve (Portugal), the University of Lodz (Poland), the Technische Hochschule Lübeck (Germany) and the University of Antwerp (Belgium). After successful completion of the programme students obtain the Joint Master degree in Applied Ecohydrology. The programme supported by the Erasmus+ offers 22 scholarships each year, covering all expenses with travels, insurance, installation, university fees and 1000 euros monthly subsistence. The MAEH is scientifically supported by UNESCO Ecohydrology Programme of the Intergovernmental Hydrological Programme, that has been developing the concept of ecohydrology for more than 20 years.

- Promote among community of practice: UNESCO IHP EH demo sites

Since 2015, the Yzeron river basin has been a demonstration site for UNESCO's Ecohydrology network. It is being used to evaluate local solutions such as porous ramps, but also to develop a strategy for managing run-off in the area to conserve rainwater resources as effectively as possible. The city of Łódź demo cases serves evidences on efficiency of ecohydrological solutions since 2009. Currently new projects – ATENAS and euPOLIS will complement the portfolio of best practices, attracting attention of international community to alternative water management practices.