



NATURVATION
cities - nature - innovation



SNAPSHOT - GYÖR: BEEKEEPING AT AUDI HUNGARIA



KEY POINTS

- This NBS is a unique package of activities connected to beekeeping at the Audi Hungaria factory
- Beekeeping was established in 2015 at Audi Hungaria in a native wildflower meadow with six bee colonies
- The project demonstrates how big companies can lead NBS implementation
- Awareness-raising and environmental education are important co-benefits
- Innovations: beekeeping integrated with landscape management, biomonitoring with bees, branding honey, environmental education, community engagement

ABOUT THE PROJECT

NATure-based URban innovATIOn is a 4-year project involving 14 institutions across Europe in the fields of urban development, geography, innovation studies and economics. We are creating a step-change in how we understand and use nature-based solutions for sustainable urbanisation.



 This project has been funded by the European Union's Horizon 2020 research and innovation programme under grant agreement No. 730243



Sustainability challenges and opportunities

Győr is a growing regional hub in Northwestern Hungary in one of the most important traffic and logistics corridors of Central Europe in the Budapest-Vienna-Bratislava triangle. With growth comes industrial development, emissions, risks to biodiversity and impacts on human health and well-being.

Since ancient times, there has been vibrant city life in the area: a sequence of many cultures, thriving agriculture, and industry with great traditions. With ca. 129,500 residents and 357,000 in its metropolitan area, Győr is the sixth largest Hungarian city. The city is also an administrative centre serving as the seat of the Győr-Moson-Sopron County government, currently with the second highest and fastest growing GDP per capita in Hungary. Győr is an economic powerhouse, with commerce and industry being the dominant. The city is strategically located at the confluence of three rivers and a stone's throw from the main channel of the Danube, branding itself as 'the city of rivers'. While green space is relatively abundant at 63 m²/person, most of it is due to peri-urban forests such as Püspökerdő which is considered the 'green lung' of the city. NBS in Győr originate both from the distant past and from more recent times. The former ones have had to survive many developments, but now thrive under modern urban development agendas; while the latter ones have emerged from new projects, such as green roofs and multifunctional urban parks.

Solution story and key actors

This NBS is a unique and innovative fusion of ecological landscape management with species adapted to local ecological conditions, pollution biomonitoring research, awareness raising, marketing, and environmental education intertwined with beekeeping at the Audi Hungaria factory.

The Audi plant in Győr is the world's largest car engine factory, Hungary's largest factory and directly employs over 13,000 people. The company has shown commitment to social development and the environment since the start of its operations in Győr.¹ Around 60-70% of the 5,167,366 m² factory area is green space. Audi Hungaria has paid special attention to the conservation of biodiversity since 2008, including the treatment of green spaces, the conservation of the nature-friendly ecosystems, a bird protection programme, the protection of rainwater reservoirs, as well as planting over 1,000 trees and 5,000 bushes based on local ecological conditions. As an external expert assessed, ***"Entering Audi premises feels like entering another city.... Inside the factory area the encounter of natural and planted vegetation is visible everywhere."***² Beekeeping was initiated by Audi AG in Ingolstadt, Germany as a Corporate Social Responsibility programme, and established in Audi Hungaria in 2015 on the area of a remainder Pannonian sandy grasslands within the factory land. Awareness-raising focuses on employees and school children, while the project also contributes to pollution biomonitoring research that relies on bees as accurate bioindicators.



Governance strategies

Success of this project relied on the ambition of Audi Hungaria, and its flexible and innovative process to address multiple needs related to biodiversity, landscape conservation, education, and research.

Audi Hungaria has adopted the approach of Audi AG in Germany to develop and invest in locally relevant ‘low-hanging fruit’ initiatives. As the inspiration to focus on bees came from the board of Audi AG, the idea was quickly embedded in the strategies of Audi Hungaria. The support of the project by the Environmental Management Unit of the company was self-evident, emphasizing that **“as the world’s largest engine factory, we have to undertake a role in the preservation of biodiversity, too.”**³. Although the planning and implementation of the beekeeping project was the responsibility of the Environmental Management Unit, it required the cooperation of several organisational units from facility management, investments and finance, public relations, human resources, to health and safety, as well as external service companies that maintain the green space. Maintenance of the beekeeper’s shack, an interpretive trail and nearby wildflower meadows are subcontracted to an external service provider. The hobby beekeeper Audi employee, who is responsible for the maintenance of the bee colonies, also delivers beekeeping demonstration for students of Audi Hungaria School and supports the biomonitoring research with regular samples.



Business models

The project benefits from localised management, financing, and implementation.

Partnerships with schools, research, and marketing are also factors of success.

The NBS is a medium-scale intervention financed by Audi Hungaria. Most elements of the beekeeping project were implemented from the local budget. The planning and coordination of the beekeeping project was the responsibility of the Environmental Management Unit. The necessary infrastructural investments, such as a solar powered beekeeper’s shack, beehives, an interpretive trail, and beekeeping equipment were budgeted under the Facility Management Unit. Biomonitoring research, with a budget of ca. €40,000 for five years, is also financed by the Environmental Management Unit. The NBS also generates some income through the 170-240 kg of honey produced each year, which is branded as Audi Hungaria Premium Honey and either given as a gift to visitors or sold in the gift shop. The income is used to support other nature conservation programs within the factory, although, as stated, **“the primary value in selling honey for Audi is the marketing, not the actual income.”**⁴



Citizen engagement

This project highlights how NBS can be used to engage employees, students, and research institutes, while publicising successful projects and processes.

Audi Hungaria communicates news of all nature conservation activities, including the beekeeping project, through different communicational channels, like the Audi Hungaria newspaper, mynet (intranet), short films, and on-line educational materials. An interpretive trail was set up, while the beekeeper and researchers also introduce their work to staff through interactive beekeeping workshops as **“the key goal of the project was awareness raising about bees, the importance of pollinators, their role in biological processes, and their global decline.”**⁵ Building on their success, a project in cooperation with the Audi Hungaria School was launched in 2016 to host the school’s sixth grade students each year for an interactive, full-day beekeeping workshop, which is **“...always a fantastic experience for children. They really encounter what they learn in the classroom in a very colourful way.”**⁶ The company also cooperates with researchers at the University of Sopron’s Forestry Faculty in a 5-year biomonitoring project. Since bees are sensitive to environmental pollution, they act as natural bioindicators. By collecting the nectar, propolis and pollen, the accumulated pollutants are also transported into the beehive from a 3 km radius. Through the regular sampling and chemical analysis of honey and pollen, the type and quantity of pollutants is precisely measurable.



Innovation pathways

Through a flexible approach and partnerships, the project integrates biodiversity preservation efforts, environmental education, awareness raising, pollution biomonitoring, and marketing.

The establishment of a beekeeping at an industrial area is a unique and innovative initiative in Hungary, even though Audi Hungaria’s German parent company, Audi AG, was the source of inspiration. Innovative aspects of the beekeeping project include its integration into the native wildflower meadow landscape on company premises, pollution biomonitoring research, active communication, sale and marketing of honey, and environmental education in cooperation with a local school. As emphasised by stakeholders, the real innovation was in the *integration* of these activities: as the project unfolded, additional organisational learning and innovation took place in the process as **“opportunities led to new ideas, which in turn led to new opportunities.”**⁷ Audi is now considered to be a corporate pioneer in Hungary for utilising bees as bioindicators for pollution biomonitoring research and **“a perfect early adopter... who was in the right place at the right time.”**⁸ Audi Hungaria approached the process with flexibility, provided funding for experimentation, and engaged employees and students in awareness raising. The collaboration with Audi Hungaria enables the University of Sopron to improve and launch biomonitoring research using bees, in cooperation with other multinational companies, across several locations in Hungary.

¹ Audi Hungaria [website](#); ² Independent landscape architect, Győr, 2017; ^{3,4,5,7} Employees, Audi Hungaria, 2017; ⁶ Teacher, Audi Hungaria School, 2017; ⁸ Scientist, University of West Hungary, 2017; Photo credits: Zsuzsa Csanaki, Audi Hungaria Zrt, 2017