



City of  
Ljubljana



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# BEE PATH (CITY OF LJUBLJANA)

## GOOD PRACTICE DESCRIPTION

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# ABSTRACT

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**The BEE PATH was opened in 2015 by the City of Ljubljana, a City well aware of the importance of pollinators for the sustainable future of cities.** The path is designed in such a way that visitors can comprehend the importance of bees for our food security and preservation of biodiversity, discover the necessity of honey in our daily diet, but also find out more about the city's beekeeping culture. In fact, two-thirds of the total surface of the City of Ljubljana are rural areas, in which 826 farms operate. The City puts great emphasis on food self-sufficiency and tries to ensure short and sustainable supply chains, thus ensuring food sovereignty. **BEE PATH was awarded a European prize - the *URBACT Good Practice*.**

Bees and beekeeping are key for ensuring food security, as well as preserving the entire ecosystem and natural biodiversity. With four beekeepers per 1000 inhabitants, **Slovenes are truly a nation of beekeepers.** This is evident also on EU level, as Slovenia in 2014 initiated **the European Honey Breakfast**, as a healthy lifestyle and high-quality food standard, at the Agriculture and Fisheries Council in Brussels. Three years later, again acting on Slovenia's initiative, **United Nations proclaimed the May 20<sup>th</sup> as World Bee Day.**

**BEE PATH development was step by step process build on seven key elements:**

- 1) Clear focus;
- 2) Key person;
- 3) Historical and present tangible and intangible cultural and natural heritage linked to bees and beekeeping;
- 4) Honey products – connecting beekeepers within city limits;
- 5) Honey connected activities – connecting institutions and companies;
- 6) Knowledge transfer – connecting educational and expert organisations and institutions and
- 7) Strong support of the city administration.

In the development process, there were several internal and external challenges to overcome.

Today BEE PATH became the synonym for all activities linked to bees and beekeeping in Ljubljana. Today BEE PATH is much more than just “a path”: It is **PHYSICAL PATH**, a **NETWORK**, a **MOVEMENT**, an **EDUCATIONAL PROGRAM** and **“THINK-TANK & INCUBATOR”**. It is operating in the City of Ljubljana, however we believe that BEE PATHS' impact area (at least to some extent) is the whole Ljubljana Urban Region. Its operational model is complex, but its focus is clear: residents and tourists in urban city area.

**BEE PATH membership consists of 35 members that can be divided into four main groups:** 1) Network management – the City of Ljubljana; 2) Honey producers and other companies involved in the selling of honey and bee-products; 3) Companies and experts organizations (knowledge transfer, promotion...) and 4) Other linked organizations. **As the political, technical and financial role of the city administration is essential for success of such initiative, seven City departments or sectors are involved** in implementation of BEE PATH activities.

Beekeeping in its broader context gives Ljubljana numerous possibilities for further development and up grading. Therefore, **the BEE PATH model is in a permanent “work in**

**process” mode. Still, the City of Ljubljana can already today provide good practice transfer and coach other cities on the following topics:**

- 1) Active partnership establishment;
- 2) Support for higher city administration involvement;
- 3) Educational programs for kindergartens and primary schools;
- 4) Api-tourism;
- 5) Building companies and institutions »green« image;
- 6) Involving higher education institutions and expert organisations;
- 7) Awareness rising and promotion for citizens;
- 8) Biodiversity maintenance and
- 9) Residents social inclusion through urban bee-keeping.

# THE CITY OF LJUBLJANA SHORT PRESENTATION

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Ljubljana is the political, administrative, cultural and economic centre of Slovenia and is home to over 280,000 inhabitants. Three quarters of the entire territory of Ljubljana are green areas. More than 46% of the city area is covered by native forests, almost 75% by green areas of which over 20% are protected. These areas include contiguous aquatic, forest and agricultural areas.

Ljubljana has as much as 542 m<sup>2</sup> of public green areas per inhabitant. Around 80 ha of these areas are newly landscaped, while work to restore brownfield sites and transform them into green spaces is still ongoing. This is how the city maintains its distinctive green identity. The Slovenian capital is one of the very few European capitals that can take pride in being able to use drinking water with no prior technological treatment. With its water source protection program and advanced wastewater management, water in Ljubljana will remain potable and of impeccable quality for a long time.

Ljubljana is the European capital with the largest share of separately collected waste (63 % in 2014) and the first European capital to be part of the Zero Waste Europe network with a Zero Waste Strategy. With even more accessible infrastructure and innovative solutions, the program will prevent waste generation and encourage re-use and recycling.

Ljubljana has implemented numerous urban green measures over the past decade including the planting of more than 2,000 trees on public areas and more than 12.000 trees in public forest, the building of five new parks and revitalization of the embankments of the River Sava. The largest of these parks is the Path of Memories and Comradeship. It is the longest tree-lined avenue in the city, with 7,000 trees and numerous memorials, rest points and other features. In addition, in 2010 the Slovenian city declared 1,400 ha of the territory as a forest of special purpose in being valuable as a CO<sub>2</sub> sink. In 2015, 74 % of homes in Ljubljana have already been connected to a district heating system or a natural gas network. Public transport is becoming increasingly accessible and user-friendly.

All these facts and figures are proof that the quality of life in the city is increasing significantly. And all stated achievements were recognized on an EU level, as in 2016 Ljubljana was named European Green Capital.

Bees represent an essential part of any ecosystem and are just as important for the survival of humankind. Ljubljana is strongly connected to beekeeping. Its' beginnings date back to the times of the first settlements in the area. Even more importantly, bee-keeping is still alive among Ljubljana's citizens. Around 350 beekeepers maintain more than 4 500 beehives. Analyses of honey have shown that it is of a very high quality – mainly because city greenery is not treated against pests. There are no pesticides, free acids or residues of heavy metals and genetically modified organisms. The honey is subsequently cleaner than honey from intensively cultivated agricultural areas. Bees are attracted to the city through the gradual planting of bee-friendly perennials in green public spaces.

The BEE PATH was opened in 2015 by the City of Ljubljana, a City well aware of the importance of pollinators for the sustainable future of cities. The path is designed in such a way that visitors can comprehend the importance of bees for our food security and preservation of biodiversity, discover the necessity of honey in our daily diet, but also find out more about the city's beekeeping culture. In fact, two-thirds of the total surface of the City of Ljubljana are rural areas, in which 826 farms operate. The City

puts great emphasis on food self-sufficiency and tries to ensure short and sustainable supply chains, thus ensuring food sovereignty.

#### SHORT BACKGROUND INFO ON BEEKEEPING IN SLOVENIA

In 1873 the Carniolan Association for Prudent Beekeeping was established in Ljubljana, which represents the beginning of the organization of the Slovenian beekeepers. Today the beekeeping organization is known as the Slovenian Beekeeper's Association. It includes 207 beekeeping societies and 14 regional beekeeping associations, with a total of about 7,500 beekeepers. Its main tasks include the education and training of beekeepers in the framework of lifelong learning, publishing the Slovenian Beekeeper monthly and various technical books, the preparation of exhibitions, discussions and symposiums, the organization of school clubs, beekeeping camps and workshops, raising the public awareness about the importance of bees in the preservation of the environment, the promotion of bee products in healthy nutrition, etc.

Bees and beekeeping are key for ensuring food security, as well as preserving the entire ecosystem and natural biodiversity and with four beekeepers per 1000 inhabitants, Slovenes are truly a nation of beekeepers. Slovenia is also putting important efforts to preserve and protect the bees throughout the European Union. Public awareness plays an important role and we attach great importance to young people. In 2006 "Slovenian Beekeepers' Honey for Breakfast in Kindergartens and Schools" was initiated as a healthy lifestyle and high-quality food standard on a national level. In 2014 it was successfully transferred to the EU level and presented as **the European Honey Breakfast** at the Agriculture and Fisheries Council in Brussels. The initiative was warmly welcomed by many ministers and the former Commissioner of Agriculture. Besides the EU Member States, candidate countries for accession to the EU and third countries have also shown an interest in participating. This was also an important, almost "ground breaking", step for the Slovenian Beekeepers' Associations' initiative for proclamation of World Bee Day within the framework of the United Nations. And it was again successful, as in December 2017 **United Nations proclaimed May 20<sup>th</sup> as World Bee Day**.

# PRESENTATION OF THE GOOD PRACTICE

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## DEVELOPMENT PROCESS

### **1.1.1 Step by step – BEE PATH development process**

Ljubljana was always a “green city” with large areas of urban forests, parks, gardens and other green areas. This green character was preserved throughout different historical periods. Even today the City of Ljubljana is not a classical – predominantly urban – Central-European capital. Due to geographical characteristics it encompasses a star-shaped urban centre, as well as vast forest and agricultural areas (representing almost two thirds of cities total area). In the last few decades this led to development of two approaches of the city territory – the urban and the rural one.

In the beginning of the 1970's Ljubljana encountered ever increasing process of urbanisation and sub-urbanization. This led to substantial enlargement of the urban city area at the expense of agricultural land, forests and urban green areas. Many villages around Ljubljana were incorporated in the urban structure of the city or became its' suburbs. Combined with ever increasing pollution (e.g. increasing traffic and energy demand for household heating, poor treatment of wastewaters, etc.) the situation resulted in substantially reduced quality of the environment and living conditions. Despite stated processes, traditional and conventional forms of farming prevailed all around the City of Ljubljana until the beginning of the 1990's.

In order to increase their production farmers used a lot of pesticides and insecticides, which unfortunately often caused bee colony collapses in rural areas. However, Ljubljana soon started to recognise its natural potentials and started developing different strategic documents, outlining more coherent, supportive and sustainable future development of both, rural and urban segments of the city. In urban areas – the first segment – Ljubljana recognized the value of its urban forests and green areas and decided to actively manage and preserve them - it started planting perennial plants on public areas, designed new tree alleys and parks, protected important natural resorts, preserved biodiversity, systematically reduced air pollution through reduction of traffic and introduction of new sustainable public- transport systems and started slowly pushing individual transport out of the city centre. Ljubljana widened the heating-gas network, connected majority of households to public heating system, re-designed wastewater collection and treatment system and systematically took care of water resources. Due to stated and many other efforts of the City and its' citizens, Ljubljana was in 2016 named the Green Capital of Europe.

On the other hand, more and more emphasis has been given to the development of rural areas – the second segment. Ljubljana started to implement different supporting mechanisms (co-financing), which enabled farmers to stay in rural area and continue to farm, while using more ecological and integrated farming approaches. Subsequently Ljubljana started to enlarge its own food self-sufficiency potential. Strategic outlines for rural development in Ljubljana were drawn firstly for the programming period 2007-2013 and then upgraded with Strategic guidelines for rural development in Municipality of Ljubljana for the programming period of 2014-2020. The new strategic plan set-out to increase production of farming (e.g. vegetable, fruit, honey products, etc.) and forestry products in order to increase local high-quality food and product self-supply.

First activities regarding bee preservation and awareness raising were scares, had no common goal and no foundations in strategic development documents. Bees were not recognised as crucial for food

self-sufficiency and biodiversity preservation. One of the main activities was co-financing of existing beekeeper's associations activities. Even though the urban beekeeping was on the rise, it was not recognised as an important environmental movement and it was left-out from any urban planning or development plans. Awareness of the Ljubljana citizens about the importance of bees for nature and food-production circle was low. City administration with its own activities (excessive use of pesticides/insecticides in green public areas) also didn't support the bee-friendly environment. Even though biodiversity was recognised as an environmental priority, no special emphasis was given to the bees and other wild pollinators. In fact, both topics were addressed separately. However, through time the CITY OF LJUBLJANA IDENTIFIED THE PROBLEM OF REDUCED POPULATIONS OF BEES AND OTHER WILD POLLINATORS AS A SERIOUS ENVIRONMENTAL PROBLEM. It was at this point that LJUBLJANA DECIDED TO FIND SOLUTIONS FOR BEE PRESERVATION IN URBAN AREAS.

In 2014 Ljubljana's Section for Rural Development (which operates within the Department for Environmental Protection in City of Ljubljana) started with a variety of activities (following also the guidelines of Beekeepers Association of Slovenia) for establishment of bee-friendly urban environment and active development of urban beekeeping. Due to the complexity of challenges, new approaches and new program contents, a project working group (consisting out of representatives of different key stakeholder groups) was established and tasked to realize the outlined goals. The working group prepared a working program, which was named "BEE PATH". The working programme is by character an action plan, implementing the Rural Development Strategy 2014-2020 of the City of Ljubljana in practice. Its activities were and continue to be financed from the City budget.

Described participatory approach – designed by City officials together with key stakeholders and backed up by experts and decision-makers, proved to be a good practice that allowed BEE PATH to become much more than just a project. It became the synonym for all activities linked to bees and beekeeping in Ljubljana.

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The implementation process of BEE PATH in Ljubljana was long and diverse. Therefore, it only makes sense to firstly point out key elements of its' step by step development. This is followed by a description of key internal and external challenges that the City needed to address.

Accordingly, to mention above, members of BEE PATH are divided into four groups – different departments in City of Ljubljana, honey producers and other companies, involved in the selling of honey and honey made products, companies and experts organizations and other organization (individuals and NGO's). With such wide focus the Ljubljana BEE PATH target public groups are also very diverse and we developed activities that address their concrete needs and expectations (citizens of Ljubljana, different companies, institutions, tourists and visitors...).

Today's Ljubljana BEE PATH operational model consists of several groups of stakeholders. Membership's annual work plan consists out of joint activities implemented on BEE PATH level and individual activities of BEE PATH members. Nevertheless, all of them are aligned with BEE PATH mission and goals. It is important to point out that operational model is in a permanent "work in process" mode, as there are constantly several issues to be addressed or improved at the same time.

In the Strategy for Rural Development of the City of Ljubljana (2014-2020), the quality of agriculture and forestry goods, with the aim of self-sufficiency, is one of the important goals which should be achieved also through an increase of beekeeping in rural and urban areas. There is a support system for bees in place and recommendations for all residents that want to keep bees in urban areas. Within the BEE PATH program, the urban beehives and bee stands have been designed to meet the demands

of urban space. The city is planting melliferous plants and trees with an emphasis on indigenous plants. Thus, the biodiversity has been maintained, and due to the higher number of pollinators, the self-sufficiency of the city has risen. The city administration and Ljubljana Tourist Board have created a bee-keeping education trail for tourists, which connects all main locations of Ljubljana's bee-keepers. Numerous promotional actions and presentations create bridges of understanding between beekeepers and citizens.

### 1.1.2 Key development elements

Before setting up BEE PATH in the City of Ljubljana it was important to have a clear vision of what we would like to achieve – to set our goal. But just as important are the following key elements we would like to point out.

**Key element 1 - Clear focus:** The key focus of BEE PATH is beekeeping in urban city area and programs for its residents and tourists in city centre (culture, environment, promotion, marketing, honey products ...). Special emphasis is also given to development of beekeeping in rural areas of Municipality of Ljubljana where the main focus is on food production and food supply of Ljubljana.

**Key element 2 - Key person:** As mentioned above and in the previous chapter, beekeeping was, to a various extent, always part of Ljubljana culture and tradition. However, the key milestone for BEE PATH, was the enthusiasm and active initiative of Ms. Maruška Markovčič, senior advisor at Sector for Rural Development at the Department of Environmental Protection of the City of Ljubljana. Development of the Ljubljana BEE PATH grew up from her personal beliefs and became a part of her official tasks in her professional work. This also means that it is essential for the City to ensure financial support to such initiatives (secured salary).

**Key element 3 - Historical and present evidence on bees and beekeeping:** It is important to establish a foundation for any such initiative. This is why staff searched for all historical, as well as present, evidence on beekeeping and bees in Ljubljana. Any connection between bees<sup>1</sup> and any aspects of daily life in Ljubljana – like ethnography, culture, environment, architecture, economy, geography, etc. was taken into account. All such links, documents and information are an important source for any promotional activities at a later stage.

**Key element 4 – Honey products - connecting city beekeepers:** We invited beekeepers from Ljubljana and beekeeper's associations to discuss key opportunities and problems of beekeeping in the city. They are the key group of stakeholders, as they produce honey products.

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<sup>1</sup> Some of such elements are: name of village Medovno (place where honey is produced / beekeepers live), wholesale honey market on Kongresni trg (end of 19. century), retail honey market on street today named Medarska ulica (Honey road); establishment of Carniolan Association for smart Beekeeping in Ljubljana Slon hotel (1873), company Medex (translation: honey-export) established in Ljubljana in 1954 for export of honey later also important in research and development of bee products; bee is also a part of logo of Kranjska hranilnica (Slovenia first savings bank) and emblem of bee is on façade of every buildings for which they approved loans, etc.

**Key element 5 – Bee connected activities - connecting institutions and companies:** As project key focus are residents and tourist in urban area, subsequently, institutions such as museums, companies, NGOs, etc. are also a very important group of BEE PATH members. They organize exhibitions and events, promote their “green orientation” through their public relations activities, they are setting up beehives on their business building roofs, etc.

**Key element 6 – Knowledge transfer – connecting educational and expert organisations and institutions:** Institutions as Faculties and other expert organizations in the field of agriculture, architecture, environment, etc. bring into membership new knowledge and can actively support members in solving professional challenges.

**Key element 7 – Strong support of the city administration:** First of all, the city administrations’ role is political – to promote and take actions connected to beekeeping. Its’ secondary role is technical - adopting legislation and procedures that support bee-friendly projects. Nevertheless, by providing funds for projects its’ role is also financial.

### **1.1.3 Key development challenges**

During BEE PATH development process, several challenges arose. Challenges, which can be addressed or overcome by action of BEE PATH members and city administration are further named “internal challenges”. The other group of challenges – named “external challenges” – are related to residents of Ljubljana.

Internal challenges:

- Empowerment of urban beekeepers and beekeeping in the city and acknowledgement of their importance in the environmental protection;
- Regulation of urban beekeeping in order to ensure professional beekeeping and reduction of possible conflicts (e.g. collecting bee colonies, building bee stands and beehives on public areas, etc.);
- Appropriate inclusion of beekeeping in the city – regarding urban forms of beehives and bee stands as a street furniture issue (taking into consideration also the heritage outlined by our architect Jože Plečnik; unlike usage of traditional beehive and bee stands forms typical for rural areas such as traditional Carniolan beehive);
- Maintaining active participation of BEE PATH members and inclusion of new members in order to continue further development.

Challenges related to residents of Ljubljana:

- Raising awareness among residents of Ljubljana about the importance of bees for our existence and for cities self-sufficiency;
- Appreciating bees as the indicators of a healthy environment;
- Seeing beekeeping in the city as a cultural, as well as a natural phenomenon;
- Reduction of beekeeping stereotypes where bees are recognized mainly as domestic animals which are producing honey and thereby help to improve the family economy;
- Introduction of beekeeping and bee products from Ljubljana to residents of Ljubljana and other tourists (e.g. packages, promotional activities, etc.).

## BEE PATH TODAY

### **1.1.4 BEE PATH elements**

Participatory approach, designed by City officials together with key stakeholders and backed up by experts and decision-makers, proved to be highly successful and allowed BEE PATH to become much more than just a project. It became the synonym for all activities linked to bees and beekeeping in Ljubljana. Subsequently BEE PATH represents the following elements:

- **IT IS A PHYSICAL PATH**, which was designed to connect urban and rural parts of the City into one strongly connected unit. Through it beekeepers, which are producing honey and other bee-linked products in rural and suburban areas of the City of Ljubljana, are connected with a network of different institutions and organizations related to bees and beekeeping in the urban part of the City of Ljubljana. In this way, visitors can get acquainted with both cultural and natural heritage linked to bees and beekeeping in Ljubljana, witness active beekeeping processes, as well as taste and buy honey and other bee-products;
- **IT IS A NETWORK** of beekeepers and their associations, cultural, educational and health organizations, enterprises, NGO's, as well as individuals interested in beekeeping and its development in urban areas;
- **IT IS A MOVEMENT** that connects all key stakeholders interested to maintain high environmental awareness, preservation of bees in urban areas, further develop urban beekeeping and are strong advocates of the international World Bee Day initiative;
- **IT IS AN EDUCATIONAL PROGRAM** devoted to raising awareness about the importance of bees amongst target groups, as well as promotion of holistic and sustainable management of urban and rural areas;
- **IT IS A "THINK-TANK" AND AN "INCUBATOR"** for development of new entrepreneurship ideas in the fields of beekeeping, bee-products and services.

The primary task of the BEE PATH group members today is to promote different activities regarding beekeeping and bees. They inform citizens about the importance of environmental protection, food self-sufficiency and preservation of biodiversity. This is how bees are becoming an increasingly important part of Ljubljana's everyday life.

### **1.1.5 Operational model**

BEE PATH is operating in Ljubljana, Slovenia's capital city, which is also its main focus. Nevertheless, the Ljubljana Urban Region, which encompasses 26 municipalities in central Slovenia is the region with the most knowledge and creative potential as key national, scientific, research, educational and cultural institutions are concentrated here. We believe that BEE PATH's (at least to some extent) impact area is the whole Ljubljana Urban Region.

From the BEE PATH point of view the geographical territory of the municipality of Ljubljana is divided into urban and rural areas. While the role of the rural area is the production of honey and bee-products, the emphasis in urban areas is related to the protection of natural and cultural heritage by various institutions. BEE PATH activities (common activities and individual member activities) are mainly concentrated in the urban centre areas, but rural contents are being developed as well (production of honey and honey products).

Establishment and development of BEE PATH can be divided into three phases:

- A. Establishment of working group and opening of BEE PATH ( December 2014 – October 2015)
  - Preparation of initial concept of BEE PATH (City of Ljubljana – Department for Environmental protection, Section for Rural development);
  - Verification and upgrading of the initial concept with beekeepers association members;
  - Preparation of the questionnaire for all the potential partners and its distribution – questionnaire was sent to different organizations and beekeepers;
  - Establishment of working group and agreement about working steps and approaches:
    - o Monthly meetings with workshops for the members;
    - o Reporting and constant informing of the members;
  - Creation of common graphic appearance of the project;
  - Honey day – first fair of BEE PATH members in the centre of the city – presentation and selling stands;
  - Marking of different points on the BEE PATH;
  - Creation of “Ljubljana honey” – protocol gift;
  - 7. October 2015 – Mayor of Ljubljana opened BEE PATH in Botanical garden of University of Ljubljana, where is also one of starting points of BEE PATH;
  - Enlargement of BEE PATH budget in the frame of City of Ljubljana for the activities in 2016;
- B. Up grading of BEE PATH (October 2015 – December 2016)
  - Meetings of working group – every second month;
  - BEE PATH calendar of activities – prepared with participation of all partners:
    - o Every partner prepared it’s own activities;
    - o Partners worked together and prepared activities and achieved synergy effects;
    - o City of Ljubljana prepared a program for itself – creation of urban bee stands and urban bee houses, Honey day, activities within Green Capital of Europe – month of July was dedicated to biodiversity and bees.
- C. Mainstreaming of BEE PATH (2017)

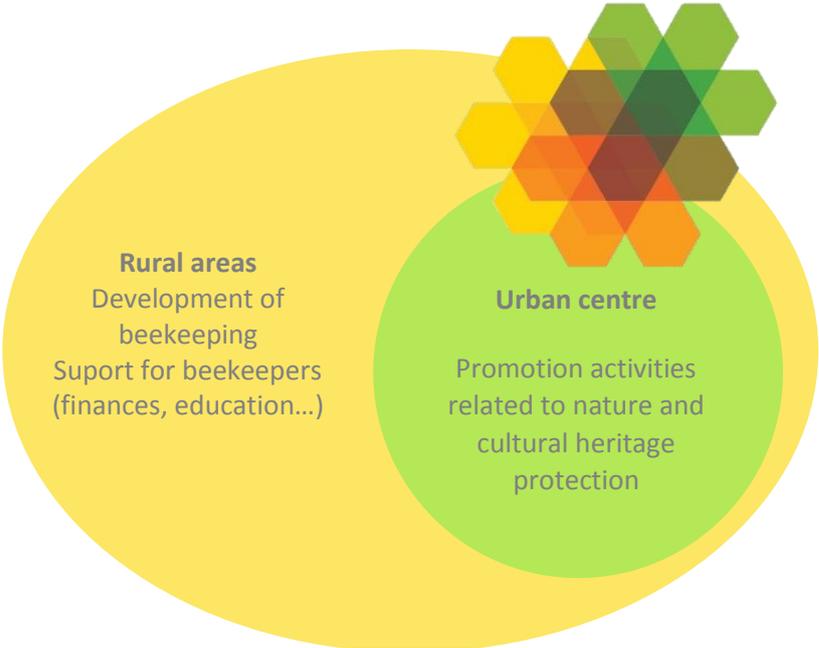
BEE PATH become a regular program in City of Ljubljana. It has it’s own budget, one person works on it on daily basis

  - Working group meets twice a year – in January to prepare a program for the whole year and in December to go through results and evaluate the work;
  - Programs and projects:
    - o City bee house in Botanical garden – one of the solutions that students of architecture prepared for urban bee-stands and bee houses;
    - o Honey day;
    - o Help the Bee in the City: Plant City With Flowers – project that connects many stakeholders and builds mainly on the ground of preserving natural environment in the city.
    - o Pedagogical programs for kindergarten and primary school children;
    - o Touristic programs;
  - Regulation of beekeeping on green public areas – recommendations (number of beehives per location, education, distance between beehives...);
  - Web page.

For all that has been done, was Ljubljana named The most friendly municipality to bees in 2017. Title was received from National Beekeepers Association.

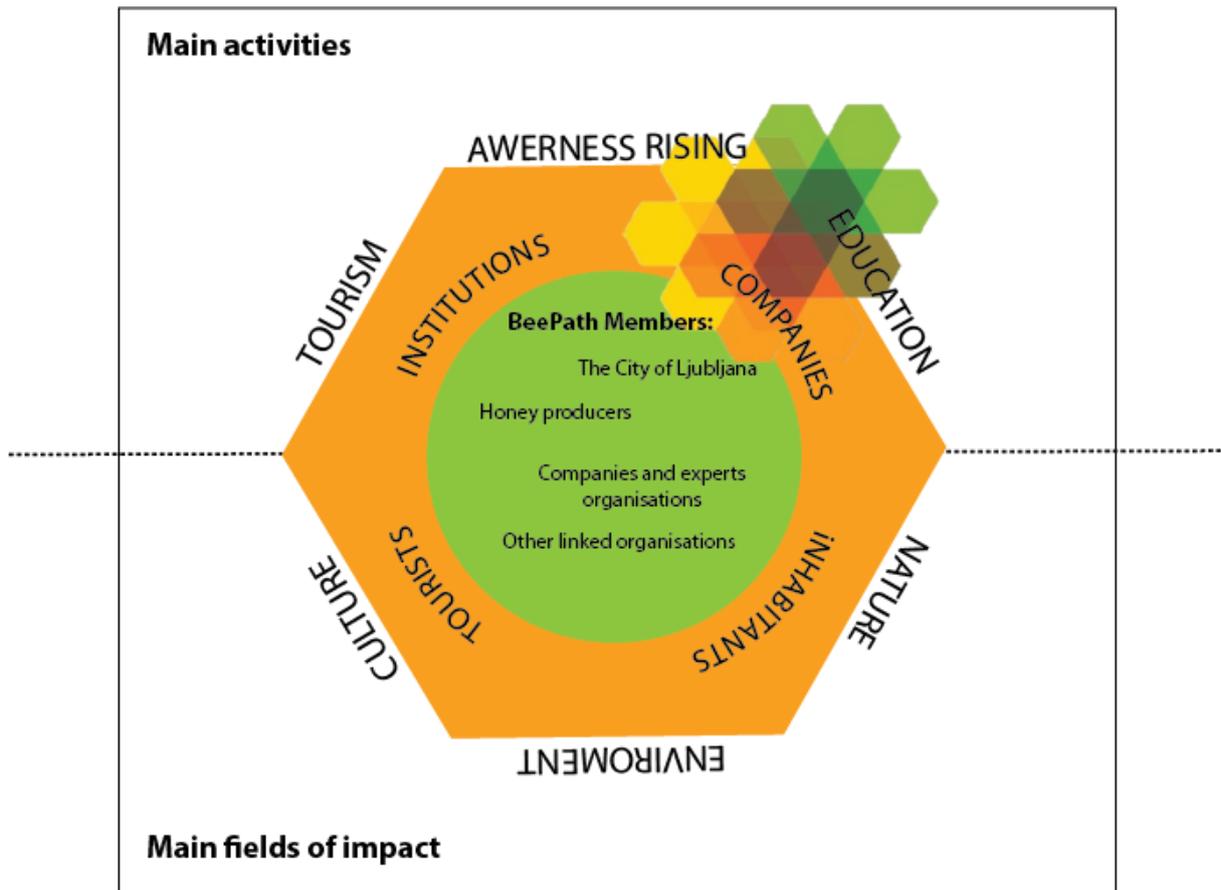
Every year new partners join BEE PATH. Until now, there are 35 of them. Membership is strictly on voluntary basis. Partners are encouraged to participate as much as they can and want. The main idea of the group is, as mentioned before, to achieve strong synergy effects.

**Picture 1.: Key roles of Ljubljana rural and urban areas**



**Picture 2: The operational model of BEE PATH**

Picture 2 presents main points of BEE PATH operational model. BEE PATH members are grouped in four focus groups which roles are in more detail described in chapter 2.4.1. Through their activities on different fields they reach their target groups, like inhabitants, tourists, institutions and companies, etc. (they are more thoroughly introduced in chapter 2.4.2). Focusing on nature, environment and culture, as main fields of impact, BEE PATH member's activities are predominately awareness rising, education and tourism orientated.



## BEE PATH STAKEHOLDERS

### 1.1.6 BEE PATH members

In addition to network management, which is provided by the City of Ljubljana – Department for environmental protection – Section for Rural development, members can be divided into three other groups:

- Honey producers and other companies involved in the selling of honey and honey made products
- Companies and expert organizations,
- Other organisations and individuals (NGO's...)

Members and their roles are presented in **table 1**.

**Table 1.: Ljubljana BEE PATH members**

	<b>Member</b>	<b>The role of members</b>
<b>Network management</b>	<b>The City of Ljubljana</b> , Department for environmental protection, Section for Rural development	<ul style="list-style-type: none"><li>– Network operation and coordination of members;</li><li>– Preparation of expert bases/group recommendations, standards, ...;</li><li>– Supporting members in the development of new products and services and expanding to other activities related to beekeeping;</li><li>– Technical and content support for members;</li><li>– Awareness raising and promotion activities of Ljubljana and network - also co-financing / joint implementation of activities with individual members;</li><li>– Managing the "Ljubljanski med" (Ljubljana honey) trademark;</li><li>– Coordination with other departments of the City of Ljubljana (more details in Table 2);</li><li>– Development of new content in the field of tourism and education (pedagogical programs);</li><li>– Connecting professional institutions and providers.</li></ul>

	Member	The role of members
Honey producers and other companies involved in the selling of honey and honey made products	<b>Beekeepers in Ljubljana:</b> APIPRODUKT – Čebelarstvo Žerjal, Čebelar Damir Škraban, Čebelar Franc Šivic, Čebelar Grega Brenko, Čebelar Iztok Holz, Čebelar Gorazd Trušnovec, Čebelar Milan Ovca, Čebelar Rok Čemažar, Čebelarstvo Petek – Pr`Nacet, Čebelarstvo Brenča, Čebelarstvo Jere, Fermedica, David Ferle s.p., Čebelarstvo Sandi Slanc, Čebelar Žiga Logonder	<ul style="list-style-type: none"> <li>– Production of honey for sale on the market and for its own needs;</li> <li>– Development of new bee-products and the expansion to other beekeeping related activities;</li> <li>– Awareness raising and promotional activities;</li> <li>– Safety for citizens – SOS line for collecting swarms (cooperation of beekeepers and firemen)</li> </ul>
	Legal entities with their own beehives: <ul style="list-style-type: none"> <li>– <b>public institutions:</b> Cankarjev dom, Center kulture Španski borci, Center urbane kulture Kino Šiška;</li> <li>– <b>companies:</b> BTC City Ljubljana, Hotel Park, SKB, A1, Gostilna pri Kolovratu</li> <li>– <b>societies:</b> Društvo Urbani Čebelar; Čebelarsko društvo Barje</li> </ul>	<ul style="list-style-type: none"> <li>– Production of honey and bee-products for business promotion and for use in their own restaurants;</li> <li>– Development of new products and the expansion to other beekeeping related activities;</li> <li>– Awareness raising and promotional activities;</li> <li>– Education of young people;</li> <li>– Planting of honey plants;</li> <li>– Implementation of honey in the culinary offer.</li> </ul>
	<ul style="list-style-type: none"> <li>– Other legal entities involved in the sales of honey: Pharmacy Ljubljana, Medex</li> </ul>	<ul style="list-style-type: none"> <li>– Sale of honey and bee-products;</li> <li>– Development of new products and the expansion to other beekeeping related activities;</li> <li>– Awareness raising and promotional activities.</li> </ul>
Companies and experts organisations (knowledge transfer, promotion...)	<b>Biodiversity and beekeeping:</b> Biotechnical Education Center Ljubljana, Botanical Garden of the University of Ljubljana, Agricultural Institute of Slovenia, Community Garden Beyond the Building Site, Zavod Eneja so.p.	<ul style="list-style-type: none"> <li>– Expert network support in the field of beekeeping;</li> <li>– Expert network support in the field of honey production and its use in nutrition, cultivation of honey plants, apitherapy, etc.;</li> <li>– Training and education of target groups;</li> <li>– Awareness raising and promotional activities.</li> </ul>
	<b>Cultural heritage:</b> Slovenian Ethnographic Museum, Plečnik's House,	<ul style="list-style-type: none"> <li>– Expert support to the network in the field of conservation of the cultural heritage of beekeeping in Ljubljana;</li> <li>– Training and education of target groups;</li> <li>– Awareness raising and promotional activities.</li> </ul>

	Member	The role of members
	<b>Architecture and design:</b> Faculty of Architecture, University of Ljubljana	<ul style="list-style-type: none"> <li>- Development of urban forms of beehives and stands with an implementation plan for the installation in the Ljubljana area and support in the field of architecture and design; some of these activities were developed by students;</li> <li>- Training and education of target groups;</li> <li>- Awareness raising and promotional activities.</li> </ul>
<b>Other linked organisations</b>	<b>Ljubljana castle</b> – city forest area with bee grazing opportunity	<ul style="list-style-type: none"> <li>- Awareness raising and promotional activities;</li> <li>- Importance of biodiversity in the city.</li> </ul>
	<b>Freelance creators</b> – Irena Pivka	<ul style="list-style-type: none"> <li>- Beekeeping as an inspiration for new creations in the cultural field.</li> </ul>

As the political, technical and financial role of the city administration is essential, information on the specific involvement of key departments is in more detail described in table 2.

**Table 2.: Involvement of the Ljubljana departments in BEE PATH activities**

Department / section / office	Role and Activities
Department for environmental protection, Section for Rural development	<ul style="list-style-type: none"> <li>- Management of BEE PATH.</li> <li>- Organization of common BEE PATH activities and cooperation in activities of its members.</li> <li>- Coordination with other administration departments.</li> </ul>
The Mayor and the Mayor's cabinet	<ul style="list-style-type: none"> <li>- Political support.</li> <li>- Making decisions on types of beehives and bee stands that are suitable in urban public space as well as support for its implementation.</li> </ul>
Department for Real Estate	<ul style="list-style-type: none"> <li>- Renting Ljubljana public green surfaces for beehives and bee stands. In that way, public surfaces get more contexts for city residents and users are able to conduct their educational, informative and other activities.</li> </ul>
Department of Urban Planning	<ul style="list-style-type: none"> <li>- Placement of beehives and bee stands in the spatial implementation plan of the city.</li> <li>- Suitability verification of the (size) beehives for placement in certain places where the activity of the beekeeping is permitted.</li> <li>- Supporting the investors and at the same time directing them to the standards set by the network (beehive design, focusing on organic beekeeping...)</li> <li>- Issuing permits for the organization of events on city public spaces.</li> </ul>

Department / section / office	Role and Activities
Department for Commercial Activities and Traffic	<ul style="list-style-type: none"> <li>- Planting of honey plants on public areas (perennials and trees). In general, intermittent plants require more work and a greater amount of water than conventional perennials and park trees. Expert support in the selection is carried out by the Botanical Garden of the University of Ljubljana (<a href="http://www.botanic-gardens-ljubljana.com/en/">http://www.botanic-gardens-ljubljana.com/en/</a>), which is also a professional partner in the network. This creates new areas for grazing bees.</li> <li>- Maintenance of public areas without the use of pesticides. This measure increases maintenance costs but significantly contributes to improving the living space of bees.</li> <li>- Issuing permits for the organization of events on city public spaces.</li> </ul>
Emergency Management Department in connection with the Fire brigade of Ljubljana	<ul style="list-style-type: none"> <li>- With the popularization of beekeeping, the number of swarms during the season has also increased. In such cases, Fire brigade of Ljubljana involves Swarm collecting Group that consist of 9 beekeepers, members of the network that are individually responsible for their region of the municipality. The work of beekeepers is voluntary, and their “prize” is a picked swarm of bees.</li> </ul>
Section for international relations and protocol	<ul style="list-style-type: none"> <li>- »Ljubljanski med« (Ljubljana honey) as protocol gifts</li> </ul>

### 1.1.7 Target groups

Activities on the BEE PATH are prepared in the way so that the widest range of target groups can be reached:

- Citizens of Ljubljana (children, adults, seniors, families...)
- Companies (“green” oriented companies, banks, shop centers...)
- Institutions (schools, universities, research institutions,
- Tourists and visitors of Ljubljana (Tourism Ljubljana, restaurants and hotels,

**Table 3.: Four key BEE PATH target groups**

Target group	Examples of activities for a specific target group
Ljubljana inhabitants (children’s, families, elderly...)	Education Programme for kindergartens and schools, demo and educational hay in the city park, sensory path, giving residents seeds of honey plants to plant them on their gardens, cultural and educational events, exhibitions explaining living of bees in Ljubljana, symposiums and lectures about bees, articles about bees...

Target group	Examples of activities for a specific target group
Companies (economy in general as well as gastronomy)	They are invited to be more “green”: put beehive or plant honey plant on roof tops or in front of their buildings; to develop new products (i.e. honey cake), to implement environmental and bee-related issues in their company appearance (promotion and public relations); To become Bee ambassadors!
Institutions	They are invited to be more “green”: put beehive or plant honey plant on roof tops or in front of their buildings; to implement environmental and bee-related issues in their programme, research, promotion and public relations; To become Bee ambassadors!
Tourists and visitors	Tourist guidance on BEE PATH, shops with honey and bee products; sweets with honey in Ljubljana hotels and restaurants,...

**Table 4.: The matrix of target public groups and activities**

Activities and target public groups	Ljubljana kids and youth	Ljubljana residents (general)	Visitors and tourists	Ljubljana companies	Ljubljana institutions
Encouraging of planting honey plants in gardens	x	x		x	x
Events and promotional activities	x	x	x	x	x
Movement for the benefit of bees in the city and promotion of sustainable orientation	x	x		x	x
Touristic programmes and cultural heritage and natural sights related content	x	x	x		
Pedagogic programmes for kindergartens and primary schools and sensorial paths	x				
Honey products with label “Ljubljanski med”		x	x	x	x

## 2 Scope for improvements

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Beekeeping in its broader context gives numerous possibilities for development and upgrading, therefore the BEE PATH model is in permanent state of "work in process". Below some of key opportunities for improvement and further development of Ljubljana BEE PATH are stated.

BEE PATH operation:

- Trademark »Ljubljanski med« – increasing the number of beekeepers involved, expanding membership outside the city ring to the rural part of the city of Ljubljana, marketing.
- BEE PATH tourist guides – to train a sufficient number of tourist guides (in cooperation with the Beekeepers Association of Slovenia and the Club of Professional Travel Guides).
- Promotion of developed tourist packages – guidance on thematic paths, implementation of activities in urban orchard.
- Implementation of developed pedagogical programs in kindergartens and schools.
- Inclusion of new ambassadors from all partner groups.
- Analysis of the recognition of the BEE PATH and its initiatives among the citizens.

Awareness raising and increase of integration of residents in activities:

- Raising awareness in all target groups of residents.
- Further improvement of education and promotion activities.
- Active inclusion of all groups of inhabitants (the continuation of the development of initiatives for planting honey plants in the gardens of the townsfolk, the development of the citizens' initiative to adopt the hive, etc.).

City management – city administration level:

- Further development of the implementation of "bee-friendly approaches" in all areas of the municipal administration (e.g. upgrading sustainable regulation of public spaces - omission of the use of chemicals for the regulation of public areas, planting of autochthonous honey plants, etc.),
- Use of honey under the trademark "Ljubljanski med" for protocol purposes.

Expert work and beekeeping support:

- Transfer of good practices and professional support to beekeepers and beekeeping from other cities.
- Development of the activities of the Group for the collection of swarms in the urban area of Ljubljana and the development of their equipment.
- Development and implementation of standards for beekeeping in the urban area of Ljubljana (introduction of the urban beehives system and upgrading recommendations).
- More targeted support for beekeepers in the area of Ljubljana (co-financing from the City of Ljubljana).

Cultural heritage:

- More active networking with professional institutions.
- Additional research on cultural heritage associated with beekeeping.
- Development of urban beekeeping related contents.

Economy and Institutions:

- Increase in number of companies and institutions, which build their “green” / environmental image through urban beekeeping.
- Get patrons/sponsors of the BEE PATH activities.

### 3 Good Practice transfer potential

The city of Ljubljana can provide good practice transfer and coach on the following content:

Package	Key elements
Active partnership establishment	<ul style="list-style-type: none"> <li>• definition of key actors and their roles</li> <li>• building enthusiastic atmosphere</li> <li>• definition of an action plan</li> <li>• coaching for action plan implementation</li> <li>• achieving synergy effects</li> </ul>
Support for higher municipality administration involvement	<ul style="list-style-type: none"> <li>• definition of key administration departments/sectors and their roles</li> <li>• gaining political support</li> <li>• definition of an action plan</li> <li>• coaching for action plan implementation</li> </ul>
Education programmes for kindergartens and primary schools	<ul style="list-style-type: none"> <li>• definition of education programmes</li> <li>• definition of education of beekeepers and other persons in pedagogic approaches</li> <li>• coaching for pedagogic programmes implementation</li> </ul>
Api-tourism	<ul style="list-style-type: none"> <li>• definition of beekeeping touristic points</li> <li>• definition of beekeeping path</li> <li>• definition of education of tourist guides</li> </ul>
Building companies and institutions »green« image	<ul style="list-style-type: none"> <li>• definition of key companies</li> <li>• definition of possible activities</li> <li>• coaching for activities implementation</li> </ul>
Involving higher education institutions and expert organisations	<ul style="list-style-type: none"> <li>• definition of key institutions and organisations</li> <li>• definition of an action plan</li> <li>• coaching for action plan implementation</li> </ul>
Awareness rising and promotion for citizens	<ul style="list-style-type: none"> <li>• definition of key elements (honey plants, environment,...)</li> <li>• definition of an action plan</li> <li>• coaching for action plan implementation</li> </ul>
Biodiversity maintenance	<ul style="list-style-type: none"> <li>• definition of key priorities and target groups</li> <li>• definition of an action plan</li> <li>• coaching for action plan implementation</li> </ul>
Residents social inclusion through urban bee-keeping	<ul style="list-style-type: none"> <li>• definition of key priorities and target groups</li> <li>• definition of an action plan</li> <li>• coaching for action plan implementation</li> </ul>

Results that live from year to year and are up graded:

- Active local group BEE PATH (35 partners)
- Program Help the bee in the City: plant meliferous plants;
- City bee house (apiary) with educational programs;
- Pedagogical programs;
- Tourist guidance on the BEE PATH;
- Honey experience (program in Ethnographical Museum of Slovenia);
- Honey day – every years activity for all partners;
- 20. Maj – Save the Bee Day – Honey calendar;
- Recommendations for beekeeping on public areas;
- SOS service for swarms;
- Promotion of the bees on the Municipality level;
- Open door days in urban apiaries;
- Urban beekeeping movement;
- ...