

Example - Benátky nad Jizerou

1) Why did we choose Benátky nad Jizerou?

We are in contact with active people from here who have shown an interest in the city's waste management improvement. But not only that. The city of Benátky reports a relatively high production of mixed municipal waste, almost 300 kgs per inhabitant per year. Because of that reasons we see great potential for improvement here.

2) What steps have we made?

a) City Waste management analysis

We got and analyzed data on municipal waste production and the costs connected with it. The summary on municipal waste production for the years 2013 to 2015 includes the following table.

| Kind of waste/Year | 2013 (tons) | 2014 (tons) | 2015 (tons) | 2013 (kgs/inh.) | 2014 (kgs/inh.) | 2015 (kgs/inh.) |
|--|----------------|----------------|----------------|--------------------|--------------------|--------------------|
| Paper | 90,12 | 81,92 | 89,44 | 12,2 | 11,1 | 12,1 |
| Plastic | 76,64 | 79,62 | 93,22 | 10,4 | 10,8 | 12,6 |
| Glass | 59,64 | 63,84 | 69,58 | 8,1 | 8,7 | 9,4 |
| Tetrapack | 5,36 | 3,86 | 4,46 | 0,7 | 0,5 | 0,6 |
| Iron | 6,87 | 4,04 | 6,8 | 0,9 | 0,5 | 0,9 |
| Biowaste - household | 199,24 | 547 | 492,3 | 26,9 | 74,3 | 66,4 |
| Biowaste - collection points + greenary | 120,26 | 74,42 | 67,48 | 16,3 | 10,1 | 9,1 |
| Wood | 28,06 | 37,42 | 56 | 3,8 | 5,1 | 7,6 |
| Electro | 14,1 | 15,24 | 24,86 | 1,9 | 2,1 | 3,4 |
| Mixed waste - collection | 2209,2 2 | 2169 | 2150 | 298,7 | 294,7 | 290,0 |
| Mixed waste - cleaning | 67,22 | 89,26 | 40,7 | 9,1 | 12,1 | 5,5 |
| Street garbage | 12,3 | 33,12 | 29,16 | 1,7 | 4,5 | 3,9 |
| Bulky waste | 235 | 197,78 | 257,08 | 31,8 | 26,9 | 34,7 |
| Total | 3124,0 3 | 3396,5 2 | 3381,0 8 | 422,5 | 461,5 | 456,0 |

The table shows that municipal waste production is relatively high in the city. Benátky in 2014 had the highest production of mixed waste compared to other cities over 5,000 inhabitants of the region. The average production of this waste in 2014 in the Central Bohemian Region was 240 kgs/inh., in the Czech Republic about 200 kgs/inh..

We looked for the reasons for the high production of mixed waste and found out some important facts. One of these is that households have a large volume of mixed waste containers. While municipalities with low waste generation have this volume of 2 liters/person/day, in Benátky it is 6.6 liters (the recommended value is 4 liters). Certain part of this waste is also produced by traders. According to Czech legislation, traders have to conclude a contract with the city or with the collection company directly. However, some businesses in Benátky do not have such a contract.

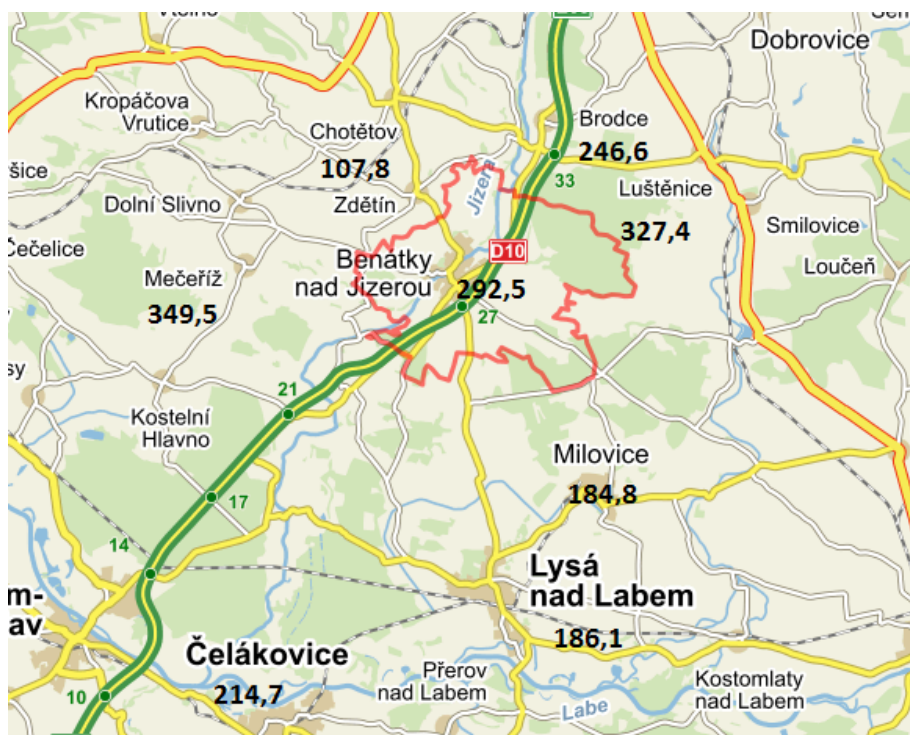
Another important factor influencing the production of mixed waste in the city is insufficient education. This was reflected, among other things, in the fact that, despite the city has introduced the collection of biowaste from the house, it did not lead to a significant decrease of mixed waste. Reduction of mixed waste is one of the results of biowaste collection in cases we know.

The level of municipal waste sorting increased from 20.5% to 27.7% between 2013 and 2015, mainly due to the amount of sorted biowaste. However we can mark it as an average level. The best cities in the Czech Republic already sort 50% or more and are able to sort over 60 kgs of paper, plastic and glass per capita. One of the major factors which prevents developing of waste sorting in the city is the high collection costs of sorted waste. These costs in similarly large cities are significantly lower. While in Benátky in 2014 it was 237.21 CZK/inh., elsewhere it was only 145.3 CZK/inh.. The table below shows the cost comparison for paper, plastics and glass.

| Kind of waste | Production Benátky nad Jizerou (CZK/ton) | Average costs Central Bohemian region (CZK/ton) | Average costs cities from 4001 to 10000 inhabitants (CZK/ton) |
|---------------|--|--|--|
| Paper | 6322,4 | 4802 | 3865 |
| Plastic | 12641,4 | 7685,8 | 6785,7 |
| Glass | 2521,2 | 1974,6 | 1732,6 |

b) Feedback to the City Waste Management Plan

Any city in Czech Republic whose production of other waste exceeds 1000 tons must prepare a waste management plan. While discussing the plan, we proposed to reduce the volume of mixed waste containers. The collecting company agreed with our argument also. For the city and the public, we have also prepared a comparative study of Benátky and Lysá nad Labem, a city of similar size, but with a significantly lower production of mixed waste (see map, production in kgs/inh./year). Lysá collects waste from family houses once in every 14 days unlike Benátky, where it is every week.



c) Questionnaire survey among inhabitants of Benátky nad Jizerou

In cooperation with volunteers we have made questionnaire survey among inhabitants. What we found out was that the common inhabitant of the city is not able to evaluate the condition of waste management in the place he lives. Nevertheless a row of impressive facts showed:

- 86.4 % of respondents was satisfied with current situation
- Roughly half of respondents would not use a mailbox sticker because of add papers they read or postpone to children to paper collection days in school (organized by schools). Note: amount of paper advertising prepared for mailboxes in Czech Republic rose after becoming a member of EU treetimes (aprox. 20 kgs per 1 mailbox)
- 55.2 % respondents would change current waste tax per capita in accordance with real production (PAYT)
- 72 % respondents would welcome more information about city waste management, composting options and waste prevention

d) Informing the public about the state of waste management of the city

We summed up information we got in form of simple leaflet for public. Leaflet distribution was provided by locals.

e) Cooperation with elementary school „Otevřeno - Open“

We cooperate with elementary school Otevřeno - Open in Benátky, there was clothing bazaar two times during the project. School also has recycling nook for children to learn more about how and what to sort.



3. Studies, links

<http://arnika.org/priklad-benatky-nad-jizerou>