



Co-design in Zagreb

Co-design of the nature based solutions in
proGireg project in Zagreb
Iva Bedenko, City of Zagreb



City of Zagreb



Zagreb is a middle sized southeastern European city, and the capital of Croatia.

It is situated in the continental climate zone, between the foothill of Medvednica mountain and the plain of river Sava.

Zagreb is a green city, surrounded by nature and penetrated by green areas that stretch deep into the urban core.

City of Zagreb



GEOGRAPHICAL AND CLIMATE DATA

HEIGHT ABOVE SEA LEVEL



SOURCE: PMF, Department of Geography



SMALLEST CITY DISTRICT

Donji Grad 301.6 ha

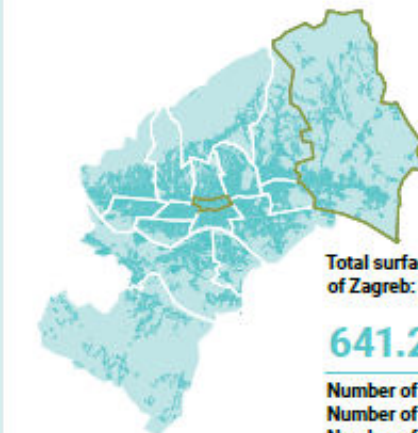
4.7% of the total population of the City of Zagreb lives on an area of 0.5% of the City's total surface area.



LARGEST CITY DISTRICT

Sesvete 16 524.5 ha

8.9% of the total population of the City of Zagreb lives on an area of 25.8% of the City's total surface area.



Total surface area of the City of Zagreb: 64 124 ha, or

641.24 km²

Number of settlements: 68
Number of city districts: 17
Number of city assemblies in City districts: 218

proGInreg in short

Financed by the Horizon 2020 programme

Project duration: **June 2018 - November 2023**

Project coordinator: **RWTH Aachen University**

Local coordinator: **City of Zagreb, City Office of Economy, Environmental Protection and Strategic Planning**

Dortmund, Torino, Zagreb, Ningbo (China)

Local partners in Zagreb:

City of Zagreb

Zagreb School of Architecture

City Bureau for Physical Planning

Green and Blue Sesevete NGO



Codesign process in Zagreb

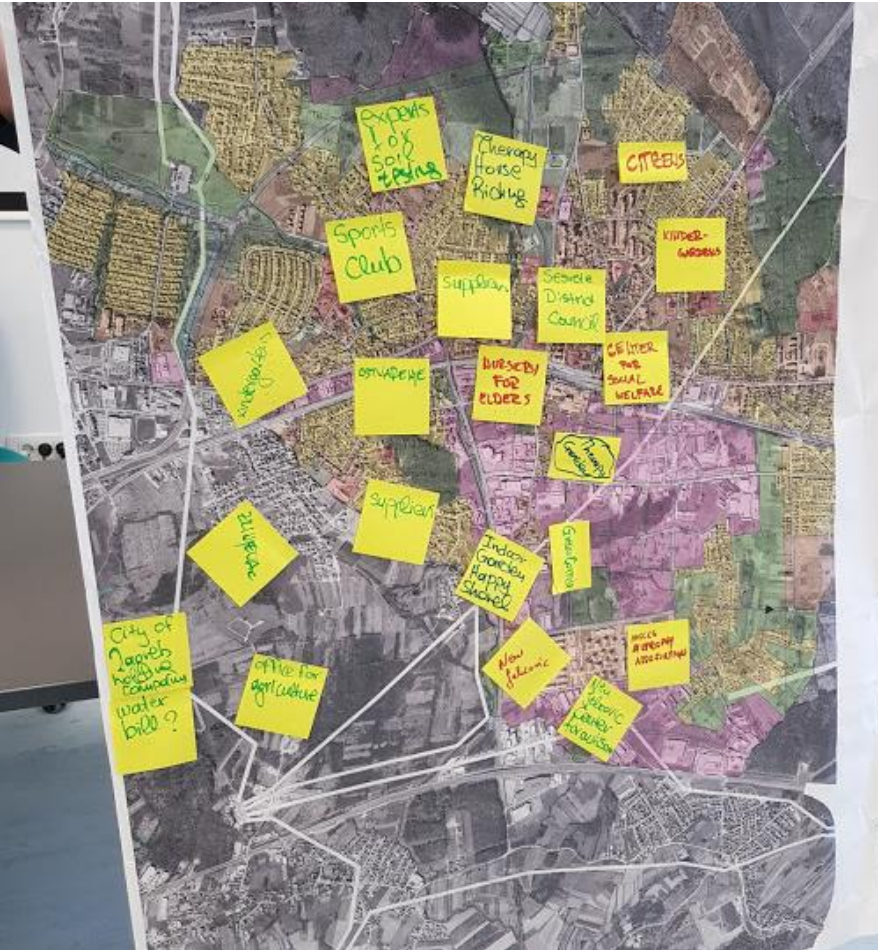
3 codesign workshops to initiate the process

Local stakeholders were all invited

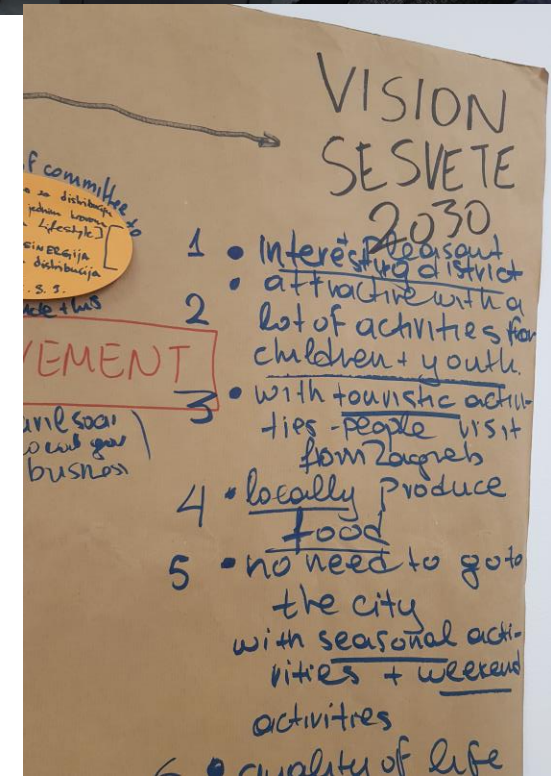
Specific groups were invited to follow-up meetings



Codesign process in Zagreb



- Local self government
- Roma community
- Elementary school and music school
- Local museum
- Local sports clubs
- Assisted living community
- etc.



Info point



Info point of the project is located next to the LL area, and is used as a meeting, exchange and information point for the local community.

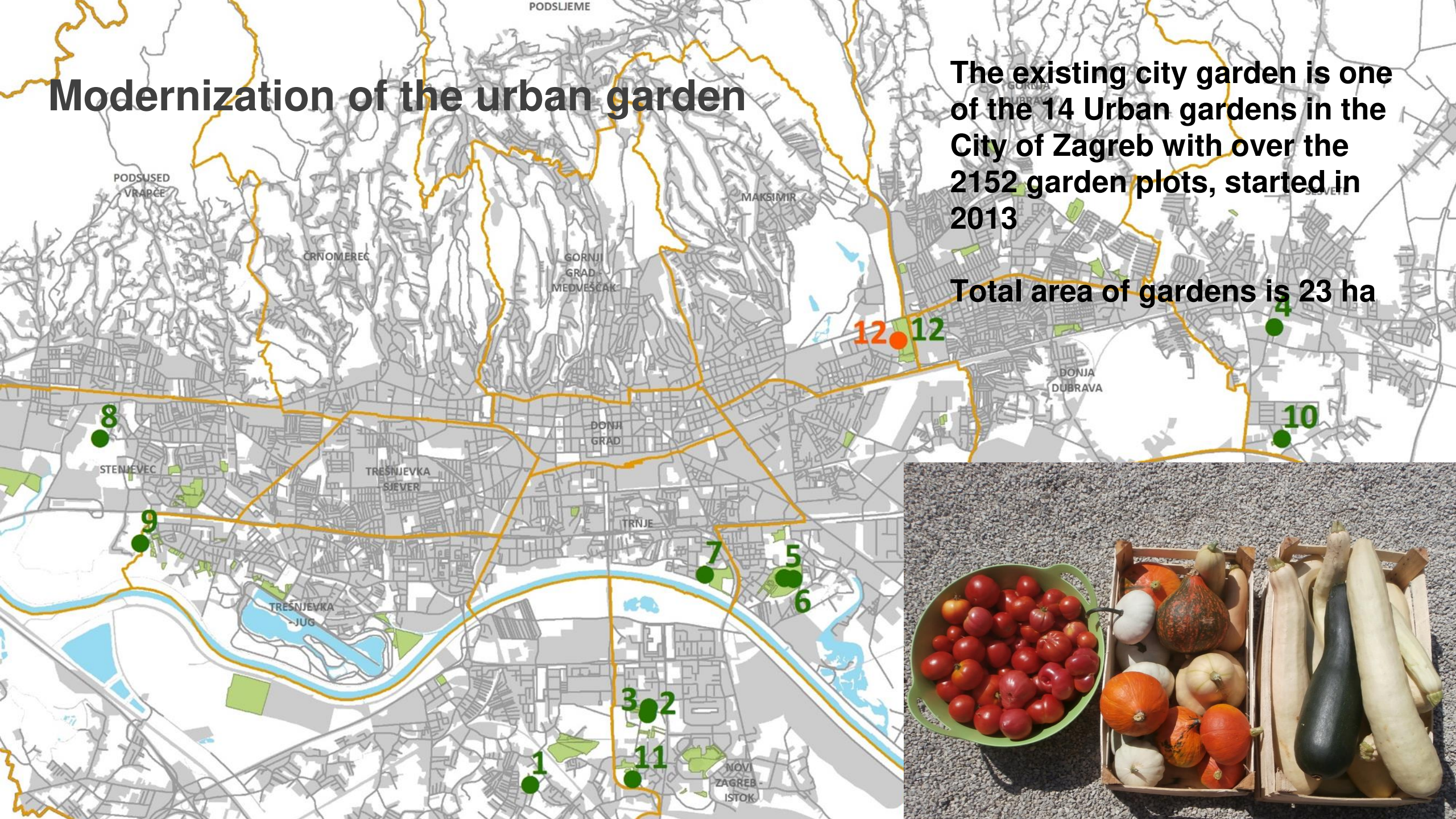
The info centre has been refurbished and is becoming a central meeting place for the district and is in the process of becoming an attractive hotspot for Sesvete young population. It is shared with a local chess club and operates as an art gallery.

It also serves as a meeting point for the proGIreg partners and a host space for the co-design and replication workshops.

Modernization of the urban garden

The existing city garden is one of the 14 Urban gardens in the City of Zagreb with over the 2152 garden plots, started in 2013

Total area of gardens is 23 ha



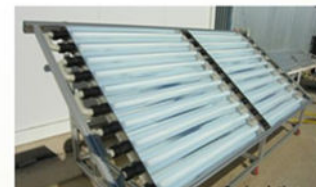
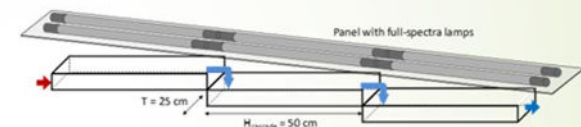
Modernization of the urban garden

The existing city garden currently are watered using manual pumps

New pumps will be operating on solar power

Installation of distribution network which will bring water to individual plots

Water will be purified by solar photocatalysis



Therapeutic garden



Designed with the input of future users (therapists) within the co-design process

Therapeutic garden



Workshops with the users of therapeutic garden



Therapeutic garden - social inclusion



Modular urban farm

Aquaponics integrate aquaculture and hydro-culture into a circulatory system that saves resources and mimics the natural cycle of nitrogen.

Very little water is consumed, pollution is minimal or nonexistent, and the product is vegetables and fish that are grown without chemicals.

Modern green roofs and walls are building elements designed to support living vegetation in order to improve a building's performance.



Modular urban farm



Modular urban farm connects these technologies and provides public access and knowledge transfer to all the interested parties (local residents, farmers, entrepreneurs)



New cycling path



A new pedestrian and cycling path in the corridor of a local road named „Road 6” was planned within the project. The route was modified recently to cross the LL.

The path will be made of eco materials and with accompanying green and cycling infrastructure.

Integration of decarbonization measures in regulations



A proposal of guidelines of low-carbon development planning, created in accordance with European green policies, is one of the key project results.

These guidelines foresee a new procedure for spatial plans including participatory process with citizens, and a turn towards low-carbon development and energy transition.

decarbonisation of the energy system, use of sustainable materials and circular economy, renewable energy sources, green infrastructure, sustainable water management, nature-based solutions, and re-naturalisation of urban centres.

Monitoring - Living Lab general questionnaire



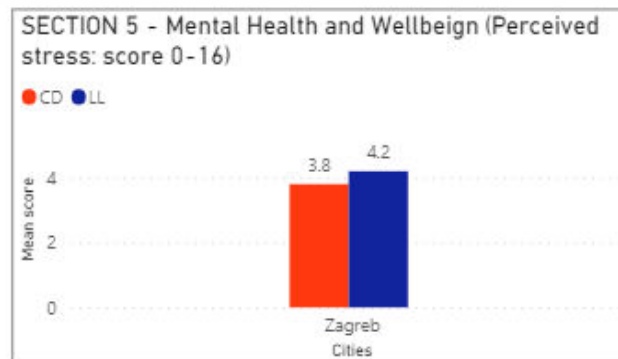
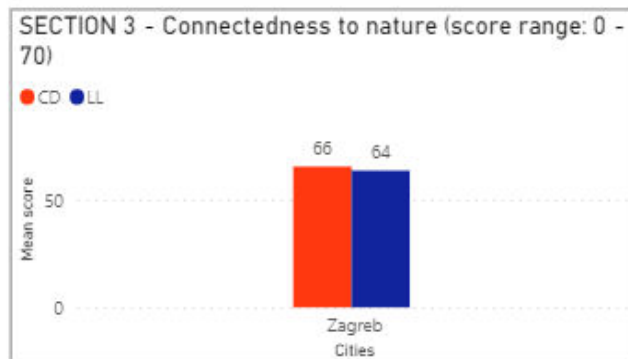
HOME LOGIN



City
 Dortmund
 Turin
 Zagreb



- Human health
- Inclusion
- Ecology
- Economy



Therapeutic garden monitoring

- Many of the therapeutic garden users are non-verbal

- Word cloud is being created with therapists' input

proGieg Word Cloud - Excel

File Home Insert Page Layout Formulas Data Review View Acrobat Tell me what you want to do... Iva Bedenko Share

Normal Page Break Page Custom Ruler Formula Bar Gridlines Headings Zoom 100% Zoom to Selection New Arrange Freeze Hide Split View Side by Side Synchronous Scrolling Switch Windows Macros

Optimizing muscle tonus through activity

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Code	Age	Gender	Role (parent/therapist)	Education (in years)	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10													
2	1. Paola.K.	21	F			Various intense smells																						
3	2. Luka.J.	28	M			Movement on different surfaces																						
4	3. Lucija.J.	25	F			Open-air activity																						
5	4. Nina.B.	24	F			Gardening experience (soil work, harvesting, watering)																						
6	5. Fran.J.	25	M			New intense flavours																						
7	6. Andela.H.	22	F			Higher mobility range achieved through activity																						
8	7. Maja.S.	25	F			Encouraging bilateral integration																						
9	8. Bernard.C.	16	M			Optimizing muscle tonus through activity																						
10	9. Mirna.J.	22	F			Sensory stimulation																						
11	10. David.P.	22	M			Socializing																						
12	11. Marm.M.	17	M			sun outdoor a socializin gardening flowers rest fun fresh air happiness																						
13	12. Ivana.A.	28	F		high school (3 years)	gardening exercise rest play socializin singing fresh air happiness fun																						
14	13. Paolo.A.	22	M		high school (3 years)	work dancing play exercise strolling fun socializin happiness fresh air rest																						
15	14. Alma.B.	35	F		high school (3 years)	relaxation happiness fun work play socializin commun flowers a rest																						
16	15. Linda.B.	41	F		high school (4 years)	fun relaxation socializin exercise strolling work play happiness rest																						
17	16. Kata.B.	57	F		no education	watering vegetable fruits socializin fresh air sun play herbs																						
18	17. Ivona.B.	27	F		high school (3 years)	sun outdoor a socializin gardening flowers rest fun fresh air happiness																						
19	18. Matea.B.	27	F		high school (3 years)	planting watering fresh air happiness play strolling herbs flowers tomatoes																						
20	19. Sara.P.		F		elementary school (8 years)	work soil work planting harvestin fresh air movemen food fun happiness rest																						
21	20. Mirela.D.	54	F			exercise work play socializin fun fresh air happiness rest dancing strolling																						
22	21. Jasmin.H.	22	M		high school (3 years)	work play socializin rest happiness dancing exercise movemen singing socializing																						
23	22. Marija.H.	49	F		high school (3 years)	fun play work happiness music socializin dancing food fresh air strolling																						
24	23. Bruno.I.	29	M		high school (3 years)	fresh air smells soil work planting harvestin watering fun exercise																						
25	24. Nikola.J.	38	M			rest relaxation socializin exercise fun fresh air happiness food singing play																						
26	25. Sandra.M.	37	F		elementary school (8 years)	work enjoymer rest singing pride happiness play fun fresh air																						
27	26. Mihael.K.	29	M		high school (3 years)	fun socializin peace happiness work play exercise fresh air rest food																						
28	27. Jure.K.	23	M		high school (3 years)	exercise work play socializin fun fresh air happiness rest dancing strolling																						
29	28. Kristijan.F.	38	M		high school (4 years)	sun outdoor a socializin gardening flowers rest fun fresh air happiness																						
30	29. Kristina.N.	26	M		high school (4 years)	strolling muzika work play socializin exercise rest fresh air happiness singing																						
31	30. Josip.P.	33	M		high school (3 years)	work happiness fun socializin exercise pride fresh air rest singing food																						
32	31. Ana.R.	27	F		high school (3 years)	work dancing play exercise strolling fun socializin happiness fresh air rest																						
33	32. Vanja.R.	33	F		high school (3 years)	planting fruits vegetable watering herbs lavender rosemary fresh air socializin learning																						
34	33. Ivana.S.	28	F		high school (3 years)	learning planting weeding herbs watering socializin fun relaxation fresh air sun																						
35	34. Franika.S.	19	F		elementary school (8 years)	happiness gardening singing socializin rest exercise watering																						
36	35. Tin Ivan.N.	23	M		high school (3 years)	planting rosemary smells watering socializin usefulness fruits and music singing																						
37	36. Lucija.T.	32	F		high school (3 years)	planting watering herbs socializin fresh air hrana harvestin singing fun																						
38	37. Maja.W.	66	F		high school (4 years)	planting outdoor socializin gardening flowers rest fun fresh air happiness																						

sun outdoor activity socializing
 gardening flowers rest fun
 fresh air exercise play
 happiness fun
 work dancing play
 exercise strolling
 happiness fun work play
 socializing communication
 flowers and fruits
 harvesting rest fun

Replication process



- Two replication workshops in 2022
- Local and regional/international
- Various scales of replication
- Greatest interest in therapeutic garden

Therapeutic garden in use





Thank you for your attention!

**Iva Bedenko
City of Zagreb, City Office of Economy,
Environmental Sustainability and
Strategic Planning**

