



INTERNATIONAL SAVA RIVER BASIN COMMISSION

NBS way to a healthy city

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Some Civilization Challenges...

- Cities around the world **face major challenges**, which put urban areas under a lot of stress to provide environments that support Public Health (PH) and Wellbeing (WB).



- By 2050 70% of people will be living in urban areas / high density, non-sustainable living, **increased pollution** due to intensive human activities
- The **rise of inequalities**: access to food, amenities, transportation, good jobs
- Physical activity, risk of respiratory **diseases**, allergies, alimentary problems...



- Pressures on the City living even more pronounced with **Climate Change** (more heat waves, floods, droughts)





NBS address challenges...

Urban floods



Water quality



Air Quality

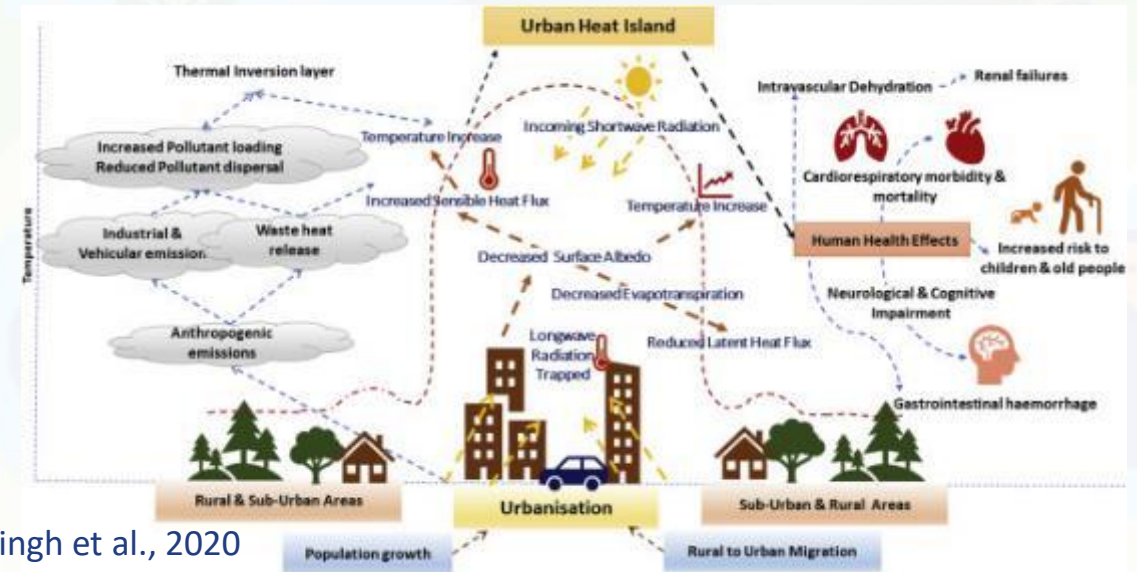
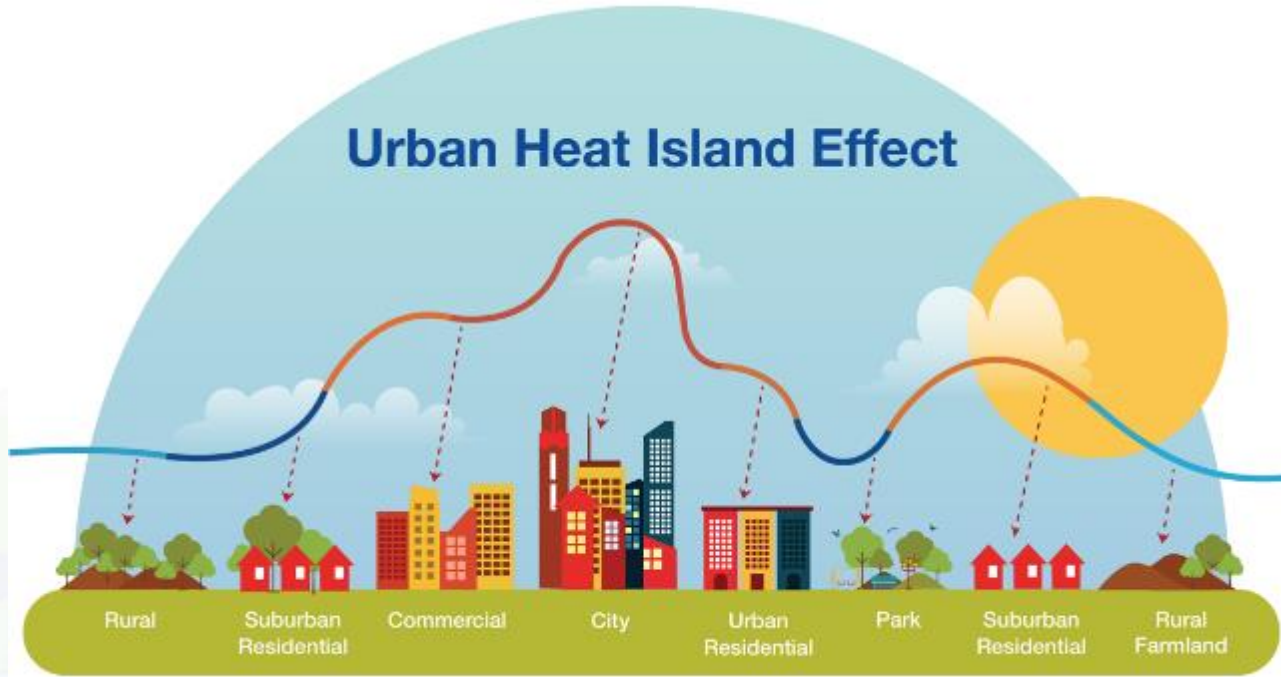




NBS address challenges...

Urban Heat Island (UHI) effects

Urban Heat Island Effect



Singh et al., 2020





NBS address challenges...

Increasing greenery / biodiversity / recreation / farming





Characteristics of NBS in urban places

- Usually, small-scale systems
- Usually designed to have multiple purposes and provide many benefits
- Connect People and Nature
- Try to decrease Climate Change effects
- Increase recreational, esthetic, productive value of urban space and can increase surrounding property values
- Even when not planned – NBS improve overall public health





euPOLIS sites – Sava basin

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





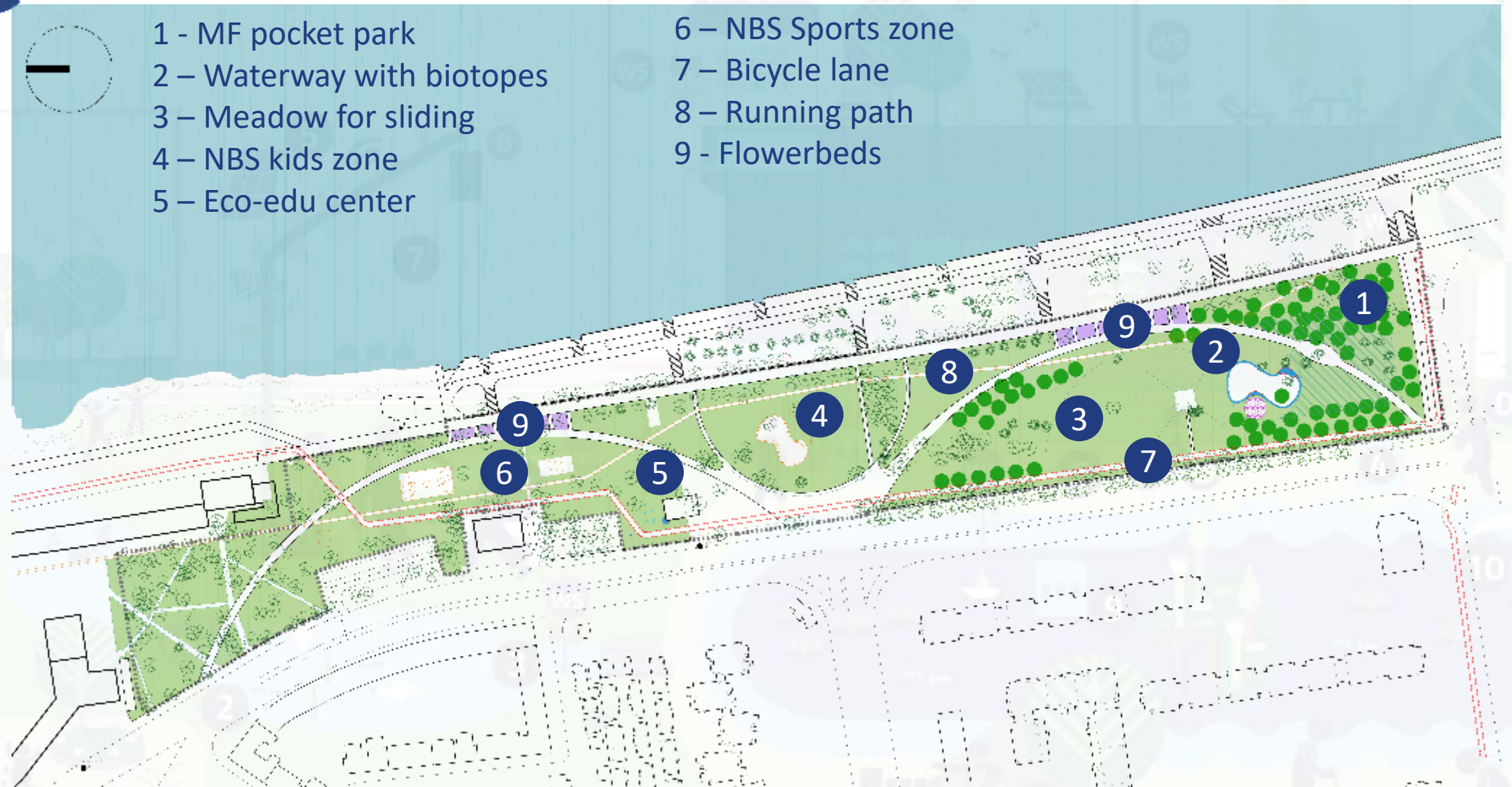
Belgrade site #1 Zemunski kej – conceptual design

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Belgrade site #1 Zemunski kej – conceptual design





Belgrade site #1 Zemunski kej – POCKET PARK

- 1 – Shaded bicycle lane
- 2 – Shaded pedestrian path
- 3 – Corridors of trees in direction of summer wind
- 4 – Waterway with aquatic biotopes
- 5 – Evergreen trees that protect from the winter winds
- 6 – Kids playground and gathering areas – ground cooled with underground water, surface waterway and evaporative cooling
- 7 – Biofilter connected to waterway
- 8 – Location of the well to provide underground water for cooling and irrigation





Belgrade site #2 Linear Park – vegetation zones





Belgrade site #2 Linear park / Cardiovascular



Quercus sp. European oak *Fagaceae*
a.2.



Crataegus monogyna Jack. Hawthorn *Rosaceae* Juss.



Rosa rugosa Thunb Rugosa rose *Rosaceae* Juss.
a.4.



Tilia cordata Mill. Small-leaved linden *Mlvaceae*





Belgrade site #2 Linear park / Respiratory system



Sambucus nigra L. Elder Adoxaceae



Gleditsia triacanthos L. Honey locust Fabaceae



Pinus sylvestris L. European red pine Pinaceae





Belgrade site #2 Linear park / Metabolic



Metasequoia glyptostroboides –
The dawn redwood Sequoioideae

Acer platanoides - Sapindaceae Juss



Larix decidua, Mill., European larch Pinaceae



Quercus petraea (Matt.) Liebl.
Fagaceae Sessile oak





Take home messages

- NBS in cities are usually small-scale systems
- Multiple small systems provide improvements on a large-scale
- Greening the spaces – more physical activity and socialization: decreased risks for cardiovascular, metabolic, respiratory diseases, improving mental health
- Managing water / no floods, no droughts, no infection outbreaks, water reuse
- Regenerating ecosystem / good soil health, urban farming, biodiversity





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