Drivers and Barriers for urban climate adaptation governance – lessons learned from Slovakia

Andrej Steiner, Alena Kozlayova, Michal Schvalb, Zuzana Jarosova
Carpathian Development Institute, Kosice, Slovakia

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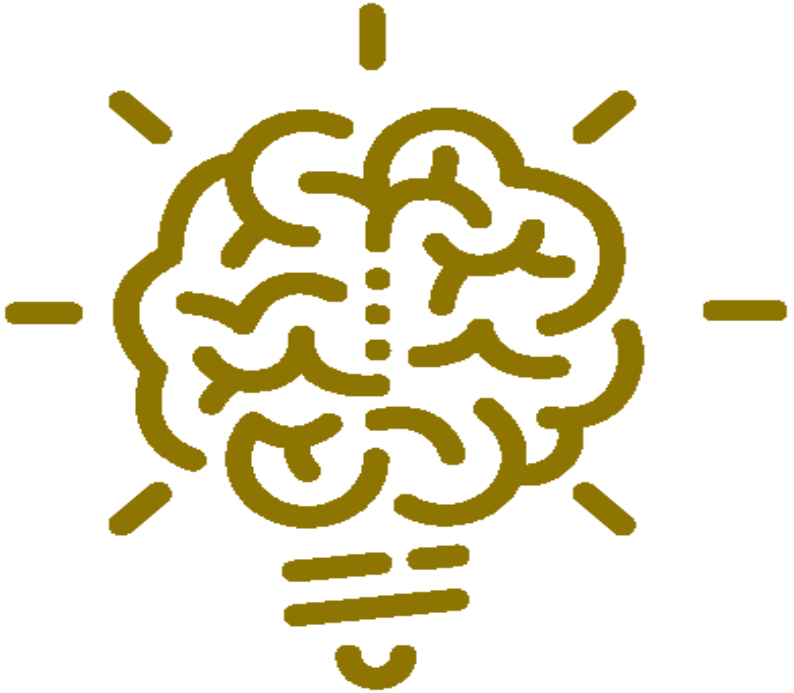
About CDI

Established in 2004 as the independent non-governmental think-and-do-tank organization

Key words: Socio-economic development of cities and regions, innovation of city/region governance processes, interconnection of research and application

In the field of reaction on CC in urban environmen (since 2010):

- ✓ 13 international and Slovak projects
- ✓ 8 urban and regional adaptation strategies
- ✓ 9 publications
- ✓ more than 20 presentations on Slovak and international fora



General barriers

- No clear political commitment/appeal on the national level to act in the area of urban adaptation
- National legal, strategy and institutional framework is lagging far behind
- The low level of feeling of danger resulting from climate change
- Economic losses and social consequences are underestimated
- Gap in scientific climate information provision
- Climate Messiahs negatively influencing public awareness

Barriers on the city level

- Cities' low preparedness to address CC
- Predominates ignorance of city public authorities in what and how to do to mediate CC impacts
- There is practically no public pressure on local government in this field
- There are no relevant available data at the city level
- Lack of positive examples
- Looking for so-called simple (an often cheap) solutions is not an efficient process
- Urban adaptation to climate change is perceived as an environmental issue and rarely linked to mitigation
- Difficulties in measuring progress in the city climate adaptability

National drivers –advocated by CDI

- In legislation introduce regulations safeguarding improvement settlements' resilience to climate change impacts
- Establishment of a national information system for the provision of climate information for cities' adaptation
- Expand the national lifelong learning system for public administration by the theme – Reaction on the climate change
- Develop a binding methodology that will be an effective basis for comprehensive assessment of climate change impacts in inhabited environment
- Set up a mechanism for professional support of cities in the adaptation process

Drivers at the city level – advocated by CDI

- Participative developed adaptation strategy, including concrete action plan projected into all urban planning, decision-making, permitting and budgeting processes
- Institutional transformation of city halls, responding urgency to address climate change cross-sectoral and with full force
- Screening of all investment intensions/plans in the light of changing climate
- Inclusion of citizens and business operating in the city into identification of climate risks and searching for solutions
- Looking for positive examples, by their nature close to the conditions of given cities and benchmarking
- **Right adaptation measure on the right place**

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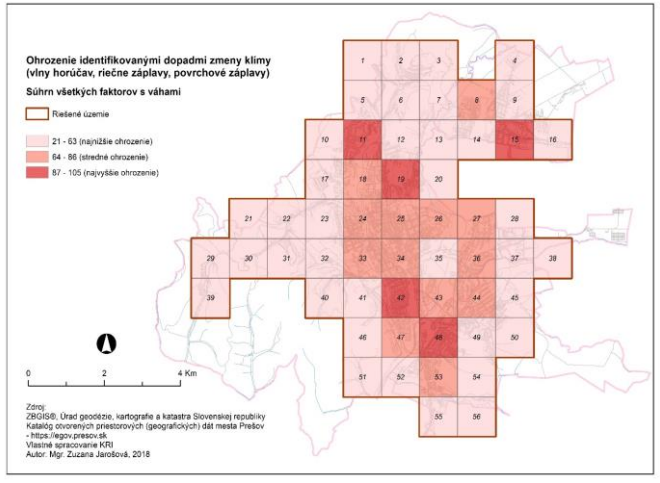
RIGHT ADAPTATION MEASURE

- Selection of vulnerability factors tailor-made for the given city
- Assessment of vulnerability of territory, including introduction of weighting coefficients
- Consider adaptation options (efficiency and effectivity)
- Choose the best feasible option



Cooling through vegetation

Cooling through water elements

Shading

Low thermal permeability of the building envelope

Cooling through spatial planning, urbanism and architecture

Shading transparent fillings of building openings

Green roofs

Using light colors and reflective surfaces on buildings

Ensure internal cooling premises

Building Interior Cooling

Green Walls

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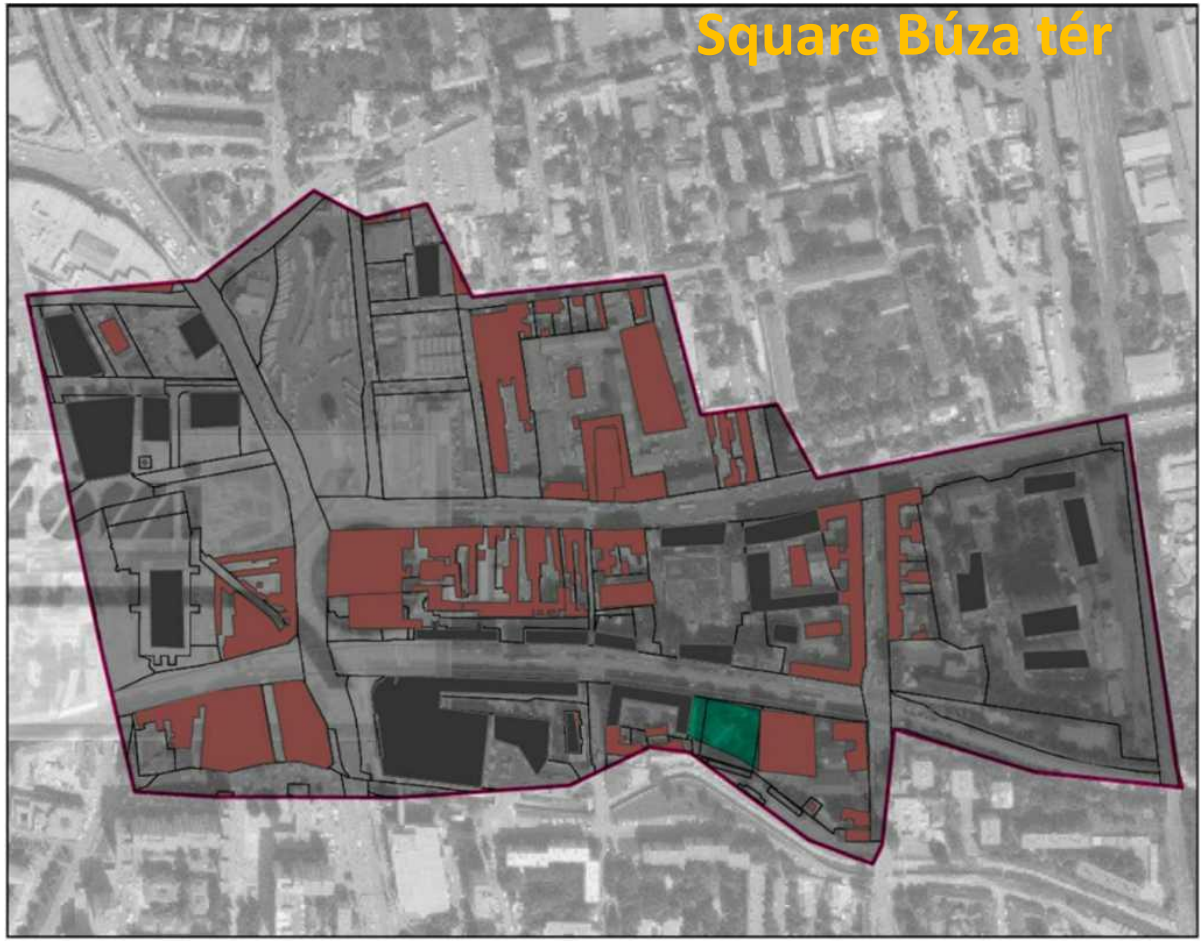
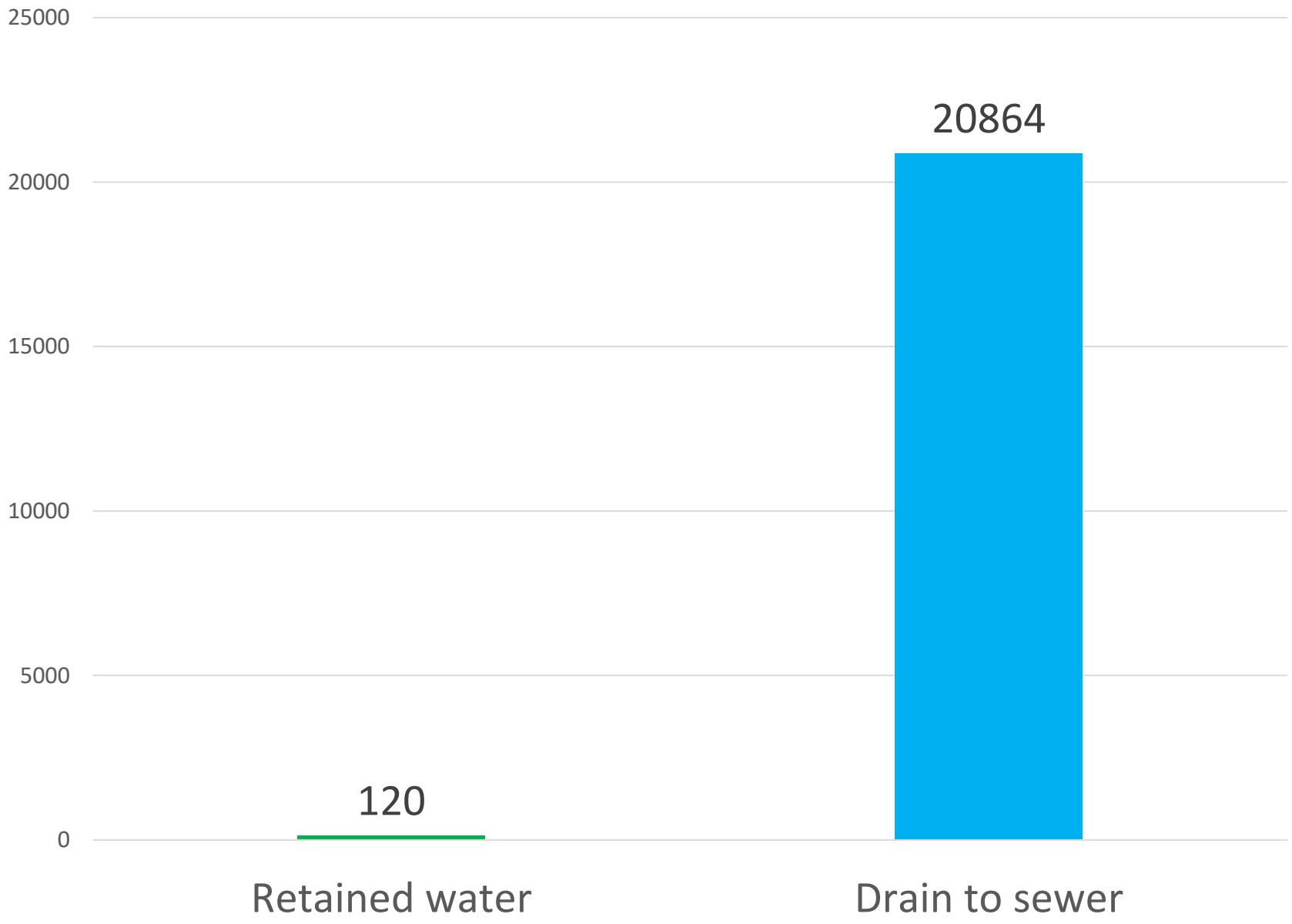
Example – city of Miskovec



Type of surface:
impermeable surfaces – 75%
buildings with flat roofs – 10%
buildings with not flat roofs – 14%
existing green areas – 1%

Model example:
Precipitation fallen in 1 hour.: 60 mm/m^2
Area: 349 741 m^2
Volume of water: 20 984 m^3

Current capacity to retain water



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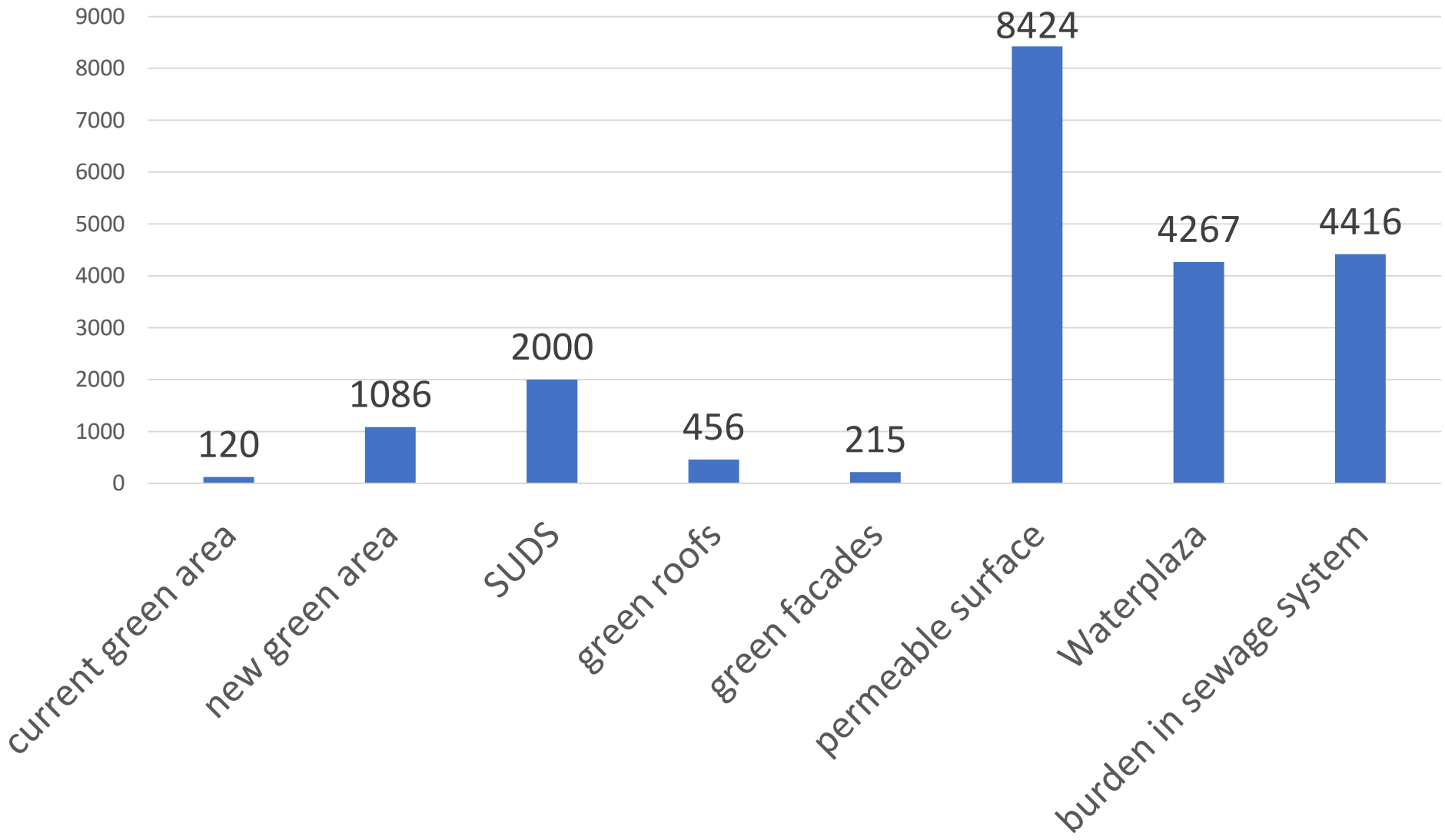
Proposed adaptation measures

- (current retention capacity)
- New parks
- Green roofs
- Green facades
- Change impermeable surface for permeable
- Multifunctional – waterplaza
- Sustainable urban drainage system

Calculated efficiency



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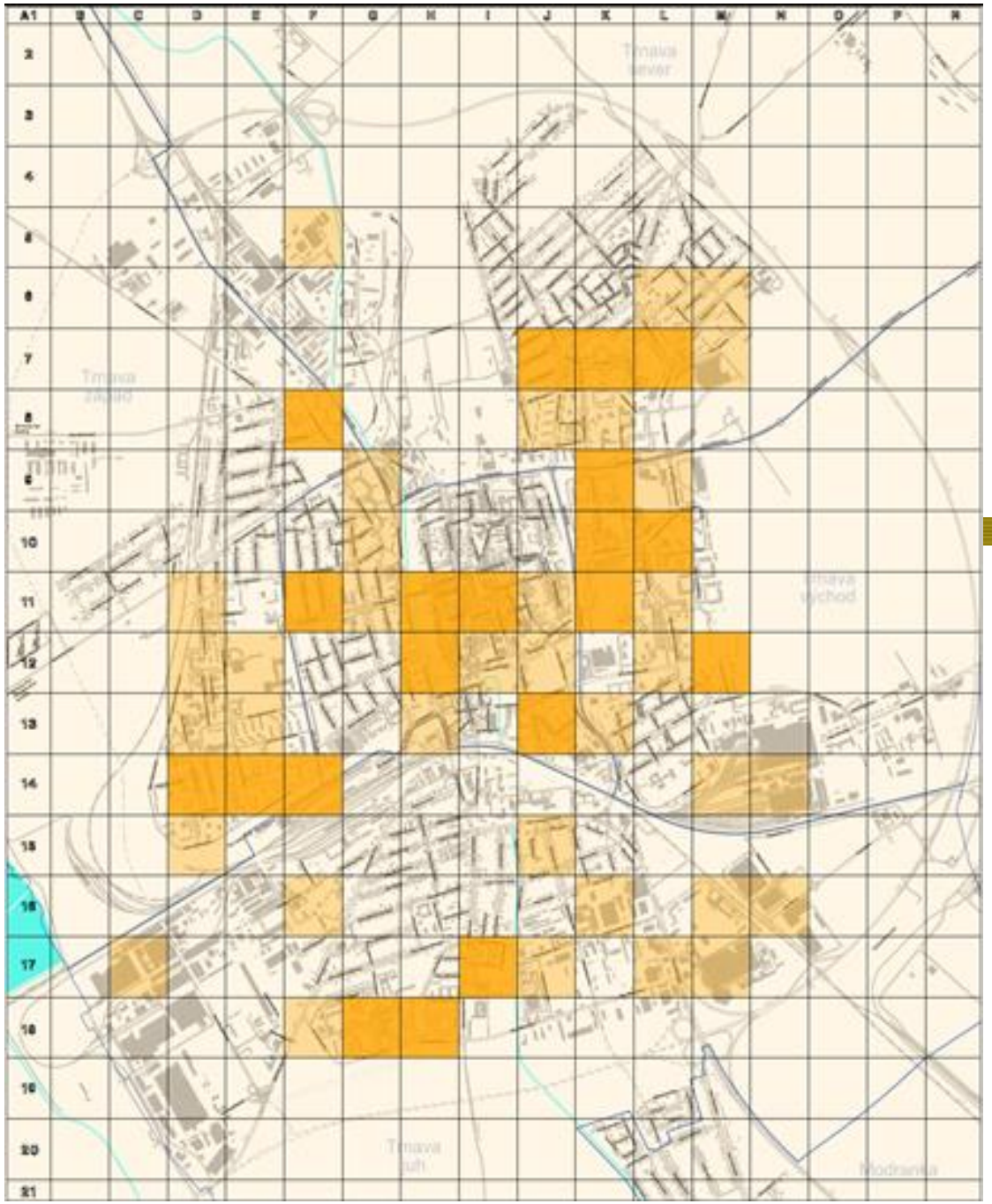
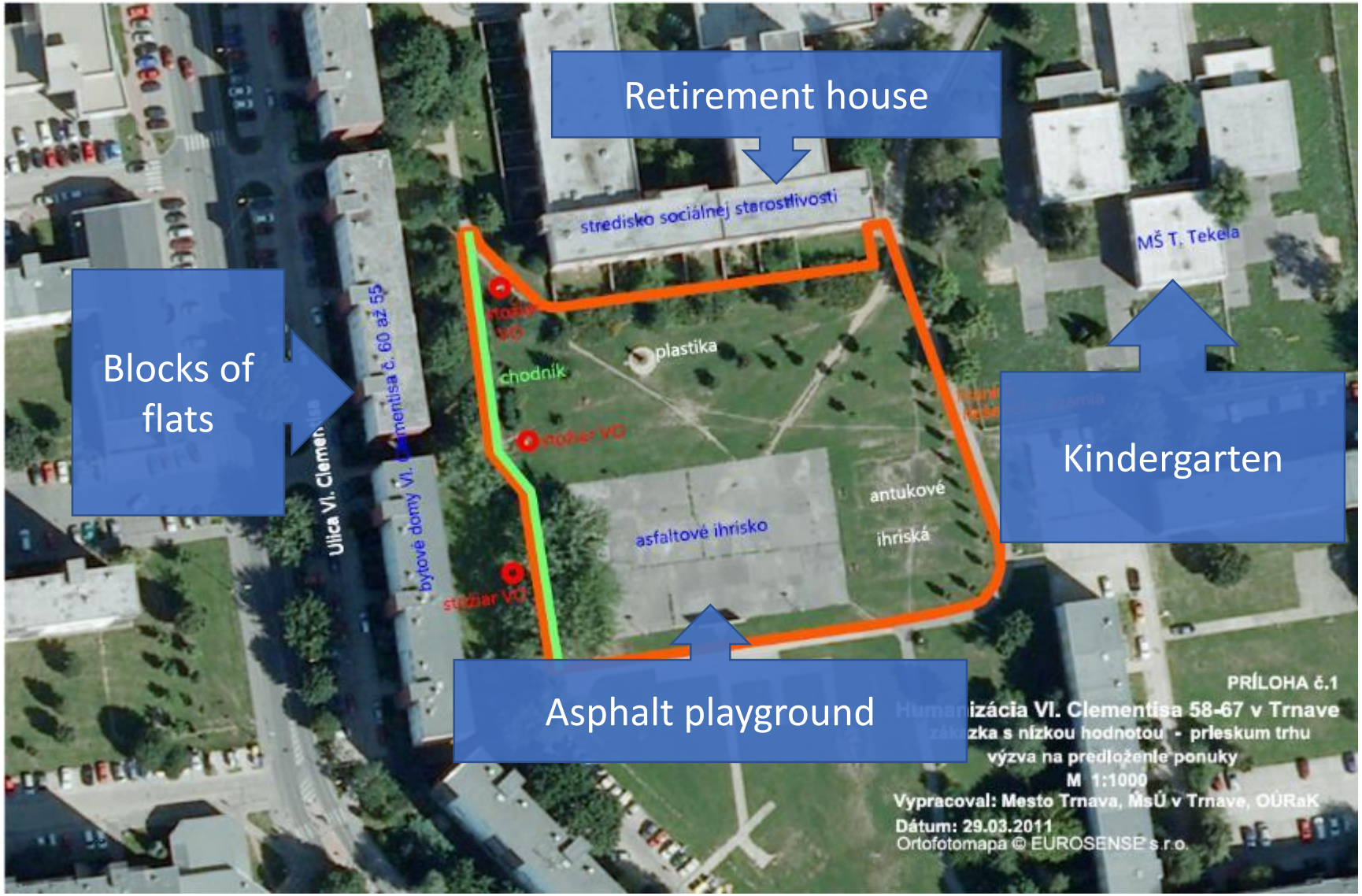
RIGHT PLACE FOR ADAPTATION MEASURE

- Consider social criteria
- Consider economic criteria
- Attack more issues at once
- Disseminate approach



Summary map of vulnerability of the Trnava city (heatwaves)

Pilot project Trnava city – before (1)



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Pilot project Trnava city – before (2)

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Pilot project Trnava city – now (1)

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Pilot project Trnava city – now (2)

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If only things were that simple

- Certain Uncertainty
- One Atmosphere vs. Many Desires
- „Pass the Buck“
- Facts matter

Thank you for paying attention to this topic

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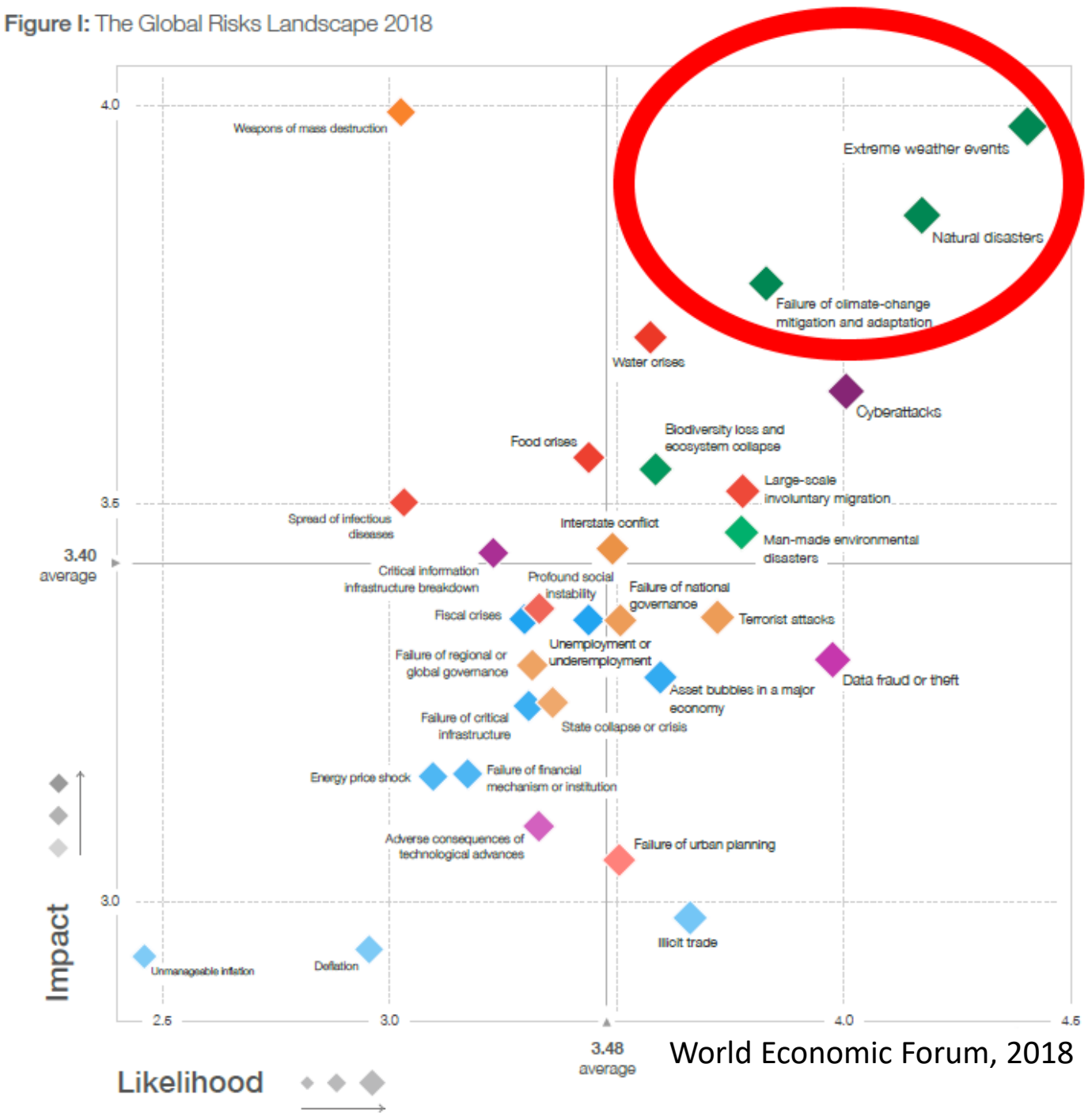

World Economic Forum, 2018