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Concrete solutions for our greatest challenges

NBS for climate mitigation and resilience_Croatian case

Experiences and lessons learnt

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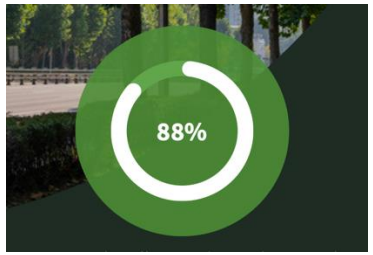
Zagreb case – baseline related to urban heat!



Increase of medium heat impact related to urbanization and climate change (diff between 1961. – 1990. and 1991. – 2020.

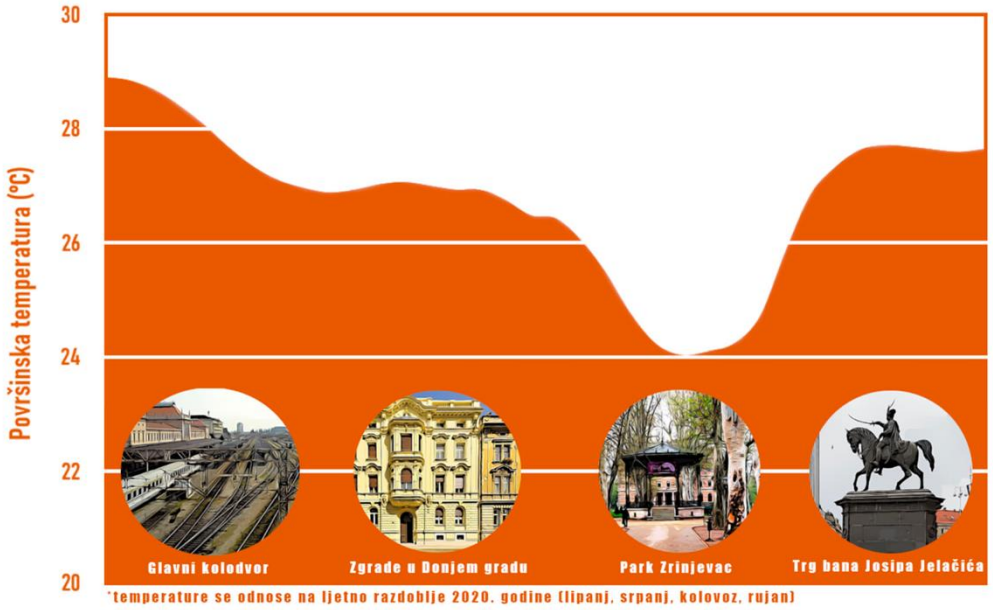
Key facts:

1. Impact of heat is significant (average daily temperatures, increase of min and max temperatures, rise of heat indexes…)
2. Urban heat increase is a combination of global climate change and rate of urbanization
3. Buildings inhabited by vulnerable groups are concentrated in densly built areas of the city, thus more exposed to the heat
4. Urban heat island is present on the level of the city, but some areas are more critical
5. Zagreb has officially reclassified climate class. **From Continental moderate to Mediterranean**

Urban heat assessment!

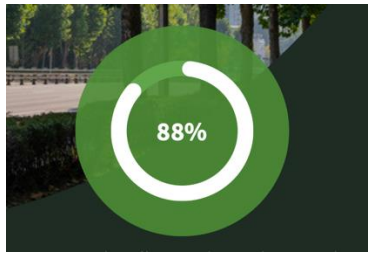
Assessment was far to general – more detailed assessment needs to be performed!

Detailed heat pressure analysis was performed!



- Heat pressure is not equaly distributed
- Temperature parameter is mostly dependant on atmosferic/climate influence but local conditions can modify them
- Synergistic effect of those parameters can cause amplification, for example heat vawes
- Heat pressure in the City is extreme

Urban heat!



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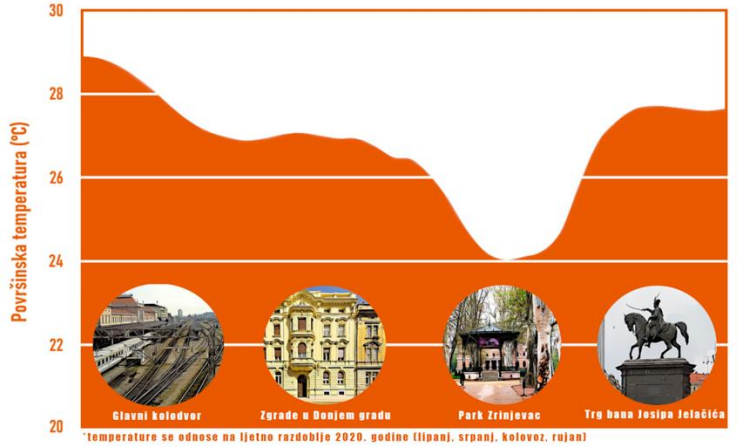
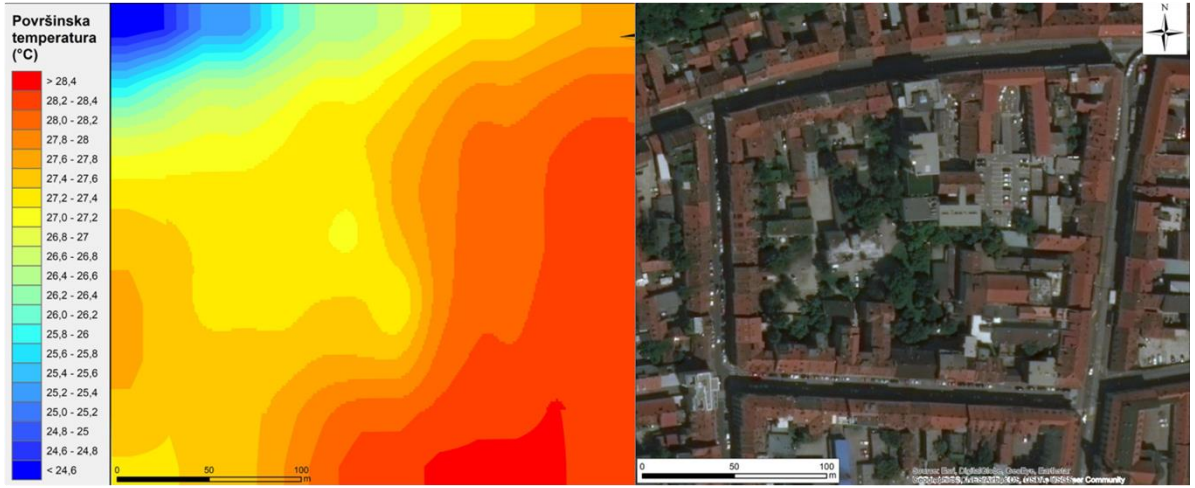


Key facts:

1. **Impact of heat is significant** (average daily temperatures, increase of min and max temperatures, rise of heat indexes…)
2. Urban heat increase is a **combination of global climate change and rate of urbanization**
3. Buildings inhabited by vulnerable groups are concentrated in densly built areas of the city, thus more exposed to the heat
4. Officialy changed climate classes



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Key barriers identified

- Unvillingnes to accept the fact that climate is changing
- Silo approach in handling the process
- Lack of data
- Lack of sectorial specific analysis
- Separated budgeting (if any) for “climate related” projects – adding on the silo approach
- Spatial plans obstacles
- Lack of knowledge and capacity

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What did we learn?

- Mainstreaming of adaptation is crucial for success
- Enabling conditions related to strategies and spatial plans need to be in place
- Every budget line in the city budget needs to be assessed towards adaptation (common sense assumed)
- Approach needs to be systemic (VRA is just a small part)
- We have to re-think everything, innovations are key
- Adaptation is not just a cost, is also an opportunity for growth and development

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What do/did we do?

- Our **resilience plan is in constant update** (climate dynamics asks for constant update) – but phasing it out.
- We are undertaking **systemic approach to mainstream adaptation** in all processes and budgeting
- **Updating spatial plans to set ground for resilience projects**
- Developed a guideline to climate proof all projects – **it is a part of permitting process**
- Using the research and innovation projects results to implement and upscale solutions
- Raising awareness and building capacities

Actions – Spatial plans as a backbone – new plan

Feature / Change	Description / Implication
Explicit integration of green infrastructure (GI) into GUP	The 2025 amendments make green infrastructure (ZI) a formal part of the regulatory spatial plan.
Normative/Regulatory directives	The plan gives guidance and constraints (normatives) for future urban (detailed) plans (UPU) to include green infrastructure elements.
Identification and mapping of priority areas	The plan (and associated local action plans) stipulate that existing green spaces, biodiversity hotspots, water bodies, and corridors must be identified and mapped, so that future development can respect and connect them.
Zoning for different GI / blue-green elements	The GUP systematizes zones (or types) for green and blue infrastructure, such as parks, riparian (river) zones, green corridors, green roofs / walls, and vegetated linkages. i
Strengthened connectivity (“networking”)	A core idea is to treat GI not as isolated patches, but as an interconnected network (linking existing green areas, rivers, forests, urban parks) so species, water, and ecological functions can flow through the city.

IN-Plan practice

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Actions – Green infrastructure as fundamental building material

REGEA's Green Deal guidance redefines *green infrastructure* not as an optional add-on, but as a **fundamental building material** – on par with concrete, steel, or bricks – in both new construction and renovation projects

- ✅ **Mainstreamed from the start:** Green infrastructure is embedded into design, permitting, budgeting, and construction workflows rather than treated as a separate "green" layer.
- 🏗️ **Integral, not decorative:** Elements such as green roofs, permeable surfaces, rain gardens, tree planting, and habitat corridors are considered essential structural components of buildings and sites.
- 🤝 **Cross-sector integration:** By positioning GI alongside traditional materials and systems, the guidance overcomes institutional and professional *silos* and fosters collaboration between architects, engineers, landscape planners, and ecologists.
- 🌍 **Multi-benefit outcomes:** This approach enhances resilience to climate change, improves stormwater management, reduces heat stress, and supports biodiversity — while becoming a standard part of construction practice.

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From piloting to upscale – MLG is the key

🏙️ The **City of Zagreb and other cities functions as a dynamic testbed** for piloting innovative approaches across technical, financial, social, and governance dimensions, creating real-world evidence for climate transition solutions.

💡 These pilot actions are **supported by EU innovation funding instruments** such as **Horizon Europe, LIFE, and Cohesion Funds**, enabling experimentation with cutting-edge solutions and new implementation models.

🧭 **REGEA plays a pivotal enabling role**, coordinating activities, facilitating capacity building, and ensuring that local innovations are aligned with national policy priorities and funding frameworks.

📈 Proven solutions and governance models are then **scaled up and embedded at the national level** through collaboration with ministries, national companies, academia, and civil society, accelerating systemic transformation across Croatia.

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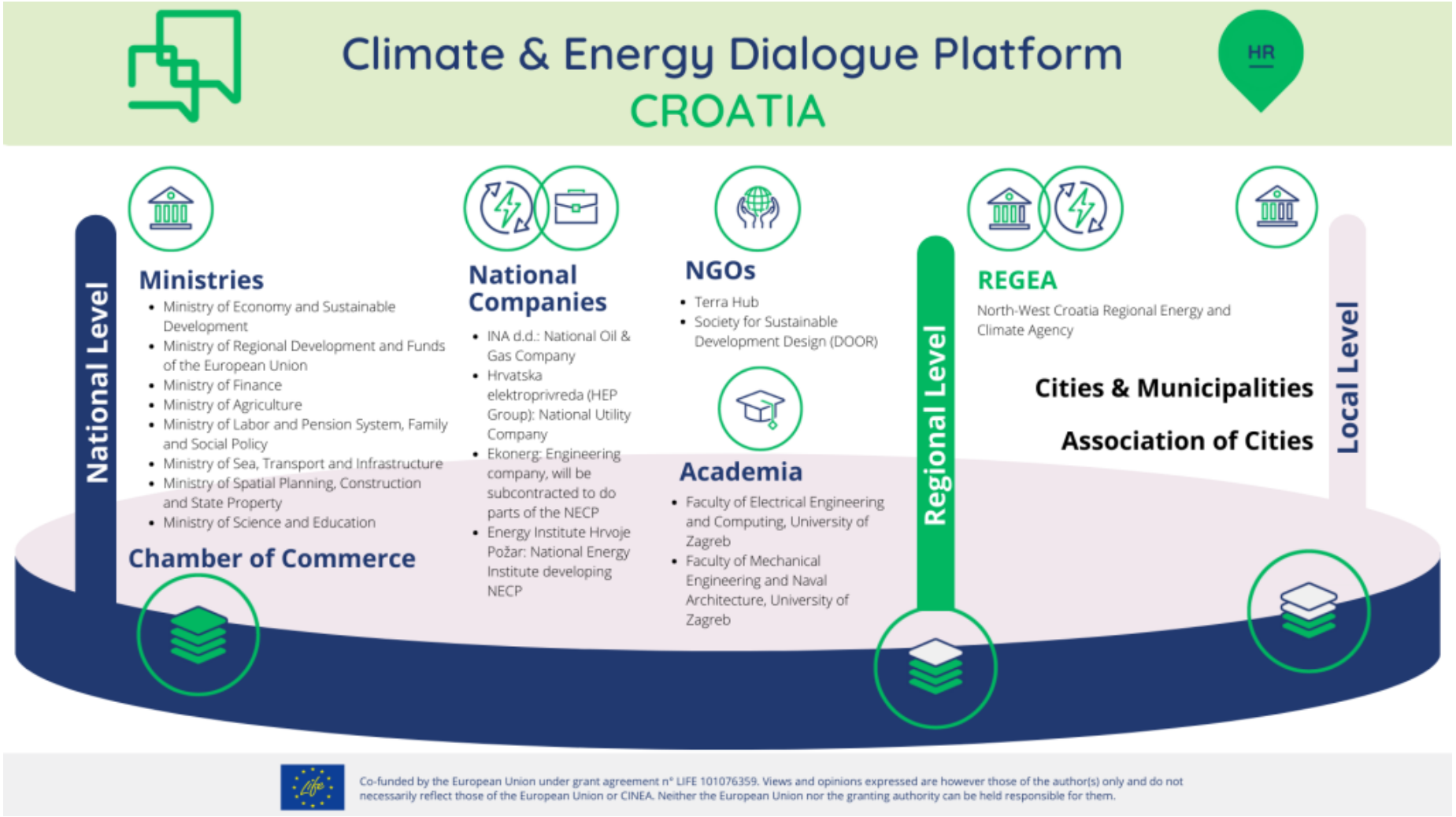
Inspiration for AdaptationHubs



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Adaptation Hubs: A Future-Oriented Approach to Multilevel Climate Governance

Why adaptation hubs? Policy context and needs

- A shift from REACTIVE to SYSTEMIC adaptation and resilience
- Governance gaps remain between **EU, national, regional, and local levels**
- **Art. 11 of the European Climate Law** calls for permanent multi-level climate dialogues - yet few MS have achieved this
- AdaptationHubs directly supports the **EU Adaptation Strategy**, the **European Green Deal**, and the **Mission on Adaptation to Climate Change**
- **Key message: agile, connected governance structures are needed to accelerate adaptation action across Europe.**