VASAB Summer School
“Sustainable Futures in the Baltic Sea Region”

Climate change Impacts on human settlements

Presentation by

Kätlin Põdra, Khondaker N. S. Tumpa, Nino Tabeshadze, Dana Eglīte

2022

Introduction to our theme

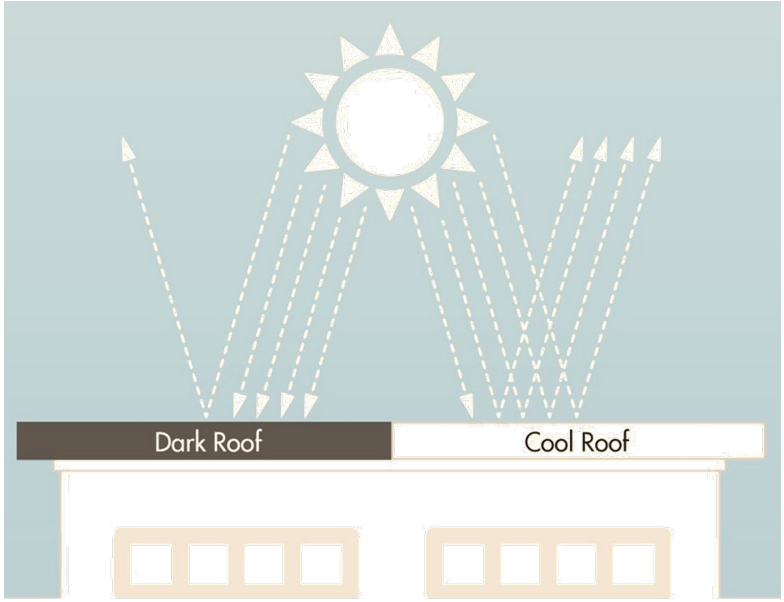
- ➔ Baltic Sea region has warmed in relatively faster pace than the global average by 0.5—1.0 °C and warm extremes are projected to become more pronounced.
- ➔ Cities are often 10-15 °C hotter than their rural surroundings.

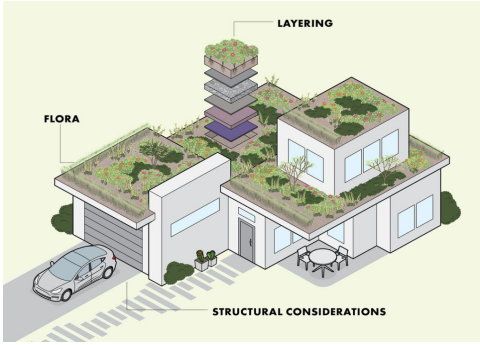
Human activities | artificial infrastructure

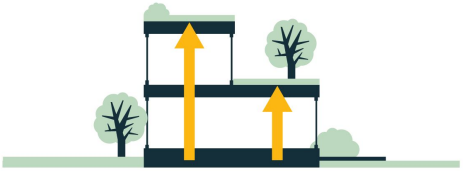
Baltic States Roof Planning Strategy

Inclusive strategy targeted to Baltic States

- ➔ Proper precautions are needed when planning a sustainable roof;
- ➔ Sustainable solutions and examples from all over the world;
- ➔ Understandable for everyone.







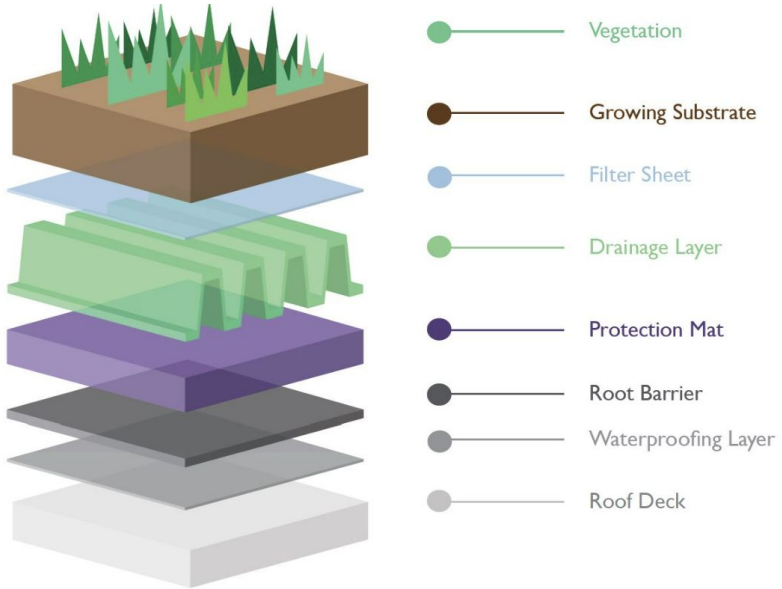
RECREATING THE DISPLACED
NATURAL LANDSCAPE GENERATES MANY
ENVIRONMENTAL AND WELLNESS BENEFITS

Framework

Green roofs
(intensive, semi-intensive and extensive)

- Increase Biodeversity
- Reduce flood and drought risk
- Reduce temperature at macro or micro scale
- Increase accessibility to green open spaces
- Enhancing sustainable urbanisation
- Saves energy and regulates the indoor temperature
- Reduce load to sewer system
- Air purification
- etc.

economic, ecological and social levels



Green roofs Diagram | Growing Green Guide

Cases

Western Harbour (Malmö)

- Extreme drought tolerance (7 weeks without rain in 2018)
- 90 % native plants
- Partly financed (40%) from the Swedish Innovation Agency

Vihreistä Vihrein (Helsinki)

- Biodiversity roofs and habitats for insects (for research purposes)
- Recreational use (community aspect)

Tranforming Jõgeva

- Polluted air
- Lack of new infrastructre (post-soviet buildings)
- Strategic location and availability

Stakeholders

Baltic State Roof Planing Strategy - stakeholders

Policymakers

→ Government officials, state actors, special advisers etc.

Citizens/ community

→ Community centers, non-profit organisations etc.

Insitutions and organization

→ Research centres, Innovation Agencys, universities etc.

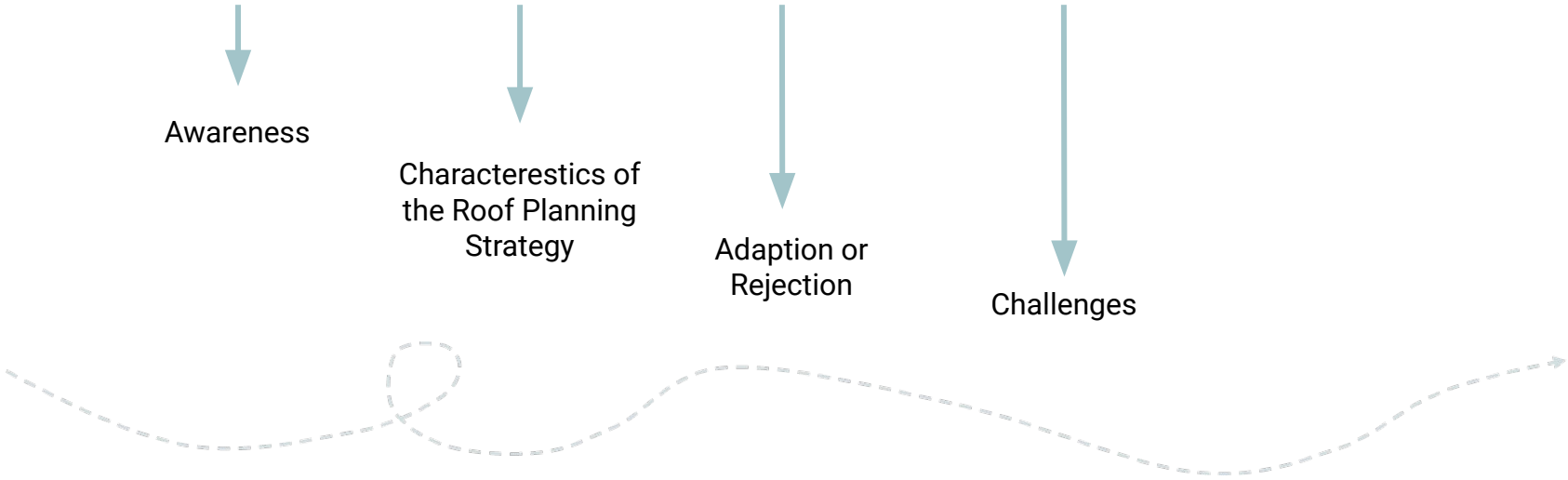
Planners

→ Professional experts working in the field - developers, architects and landscape architects etc.

Impact on the region

Implementation plan

1. Knowledge - 2. Persuasion - 3. Decision - 4. Implementation - 5. Confirmation



References

- https://www.archtoolbox.com/green-roof-systems/
- https://climate.copernicus.eu/demonstrating-heat-stress-european-cities
- https://climate.copernicus.eu/demonstrating-heat-stress-european-cities
- https://helcom.fi/wp-content/uploads/2021/09/Baltic-Sea-Climate-Change-Fact-Sheet-2021.pdf
- https://joint-research-centre.ec.europa.eu/jrc-news/cities-are-often-10-15-degc-hotter-their-rural-surroundings-2022-07-25_en
- https://oppla.eu/casestudy/19011
- https://landezine.com/vihreista-vihrein-the-greenest-of-the-green/
- https://www.ilmateenistus.ee/kliima/kuukokkuvotted/?lang=en
- https://worldgreeninfrastructurenetwork.org/different-green-roofs-for-different-local-needs-and-environment/

Thank you for your attention!