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Cultivating Climate Resilience: Communal Gardens as Socio-Ecological Infrastructure

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INTRODUCTION & AIM

Urban areas are increasingly exposed to climate related challenges.

Nature-Based Solutions are widely recognized in climate adaptation strategies, yet their socio-ecological and governance dimensions remain underexplored.

AIM

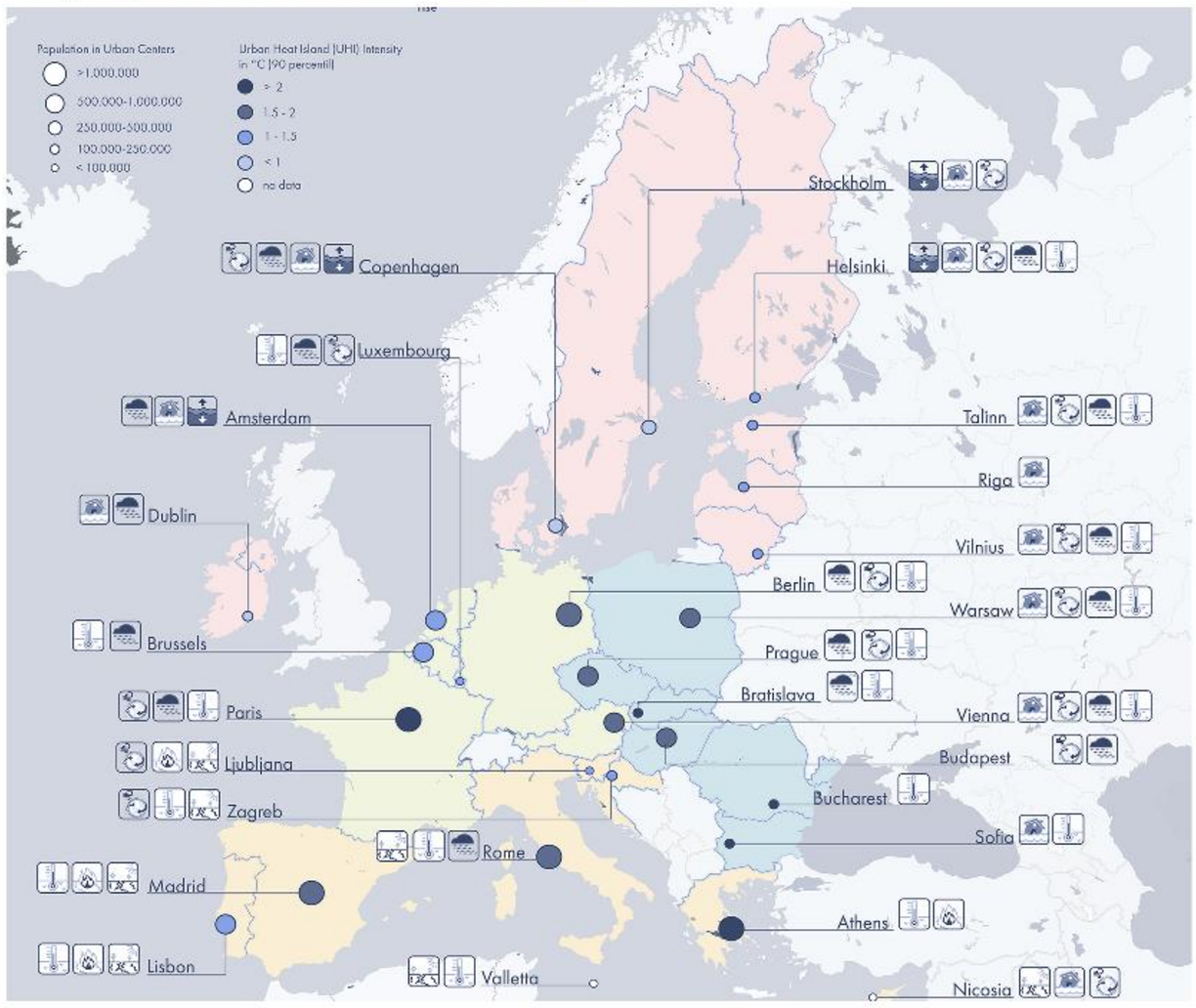
The study re-conceptualizes urban green infrastructure and gardens as a socio-ecological infrastructure integrating ecological adaptation, social cohesion and collective governance across European Capital Cities.

METHOD

Analyzing the Reports

ipcc | Copernicus | European Environment Agency

Analyzing 27 Climate Action Plans of EU capital cities



Selected Vulnerable Capital Cities

Copenhagen

Berlin

Madrid

Multi-Scalar Analysis

Review of Climate Action Plans and Governmental Reports of the Cities

Mapping and interpretation of Green Infrastructure

Case Study Selection

Strong climate adaptation policies

Presence of communal garden practices

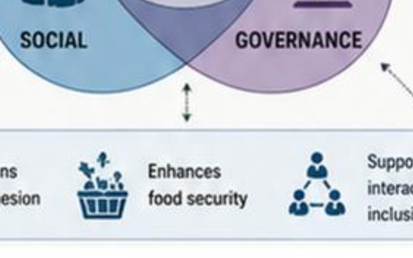
Geographic diversity within Europe

RESULTS & DISCUSSION

City	Copenhagen	Berlin	Madrid
Urban Scale Climate Adaptation Approach	Cloudburst Management Plan Integrated blue-green climate planning	Cooling areas (parks, green corridors, shaded areas) 'Sponge city', small oases and wellness places Rainwater management	Tree canopy, Mobilizing resources, improving water Distribution Drainage Systems
Governance Model	Interdisciplinary collaboration (public–business–knowledge sectors) Green transition City as a "green lab" for future-oriented solutions	Multi-level governance Participatory planning Regional cooperation networks	Green infrastructure–based resilience planning Citizen engagement in policy processes Polycentric and multi-level governance
Green Infrastructure Integration	Storing rainwater in parks and rain gardens	Community gardens Participatory green infrastructure	Parks, street trees, and river corridors Reducing urban heat, improving stormwater management, and enhancing air quality
Socio-Ecological Role	Linking socio-economic inequality Physical/mental health, and perceived accessibility	Collective identity Urban commons	Gardens act as protest space, collective care, food system

Copenhagen | Berlin | Madrid

Scandiage
Rainwater management and recreational park



Intercultural Community Garden

Madrid RIO

CONCLUSION

Key Findings: Three Dimensions of Impact