

City Cooling to Greening Program

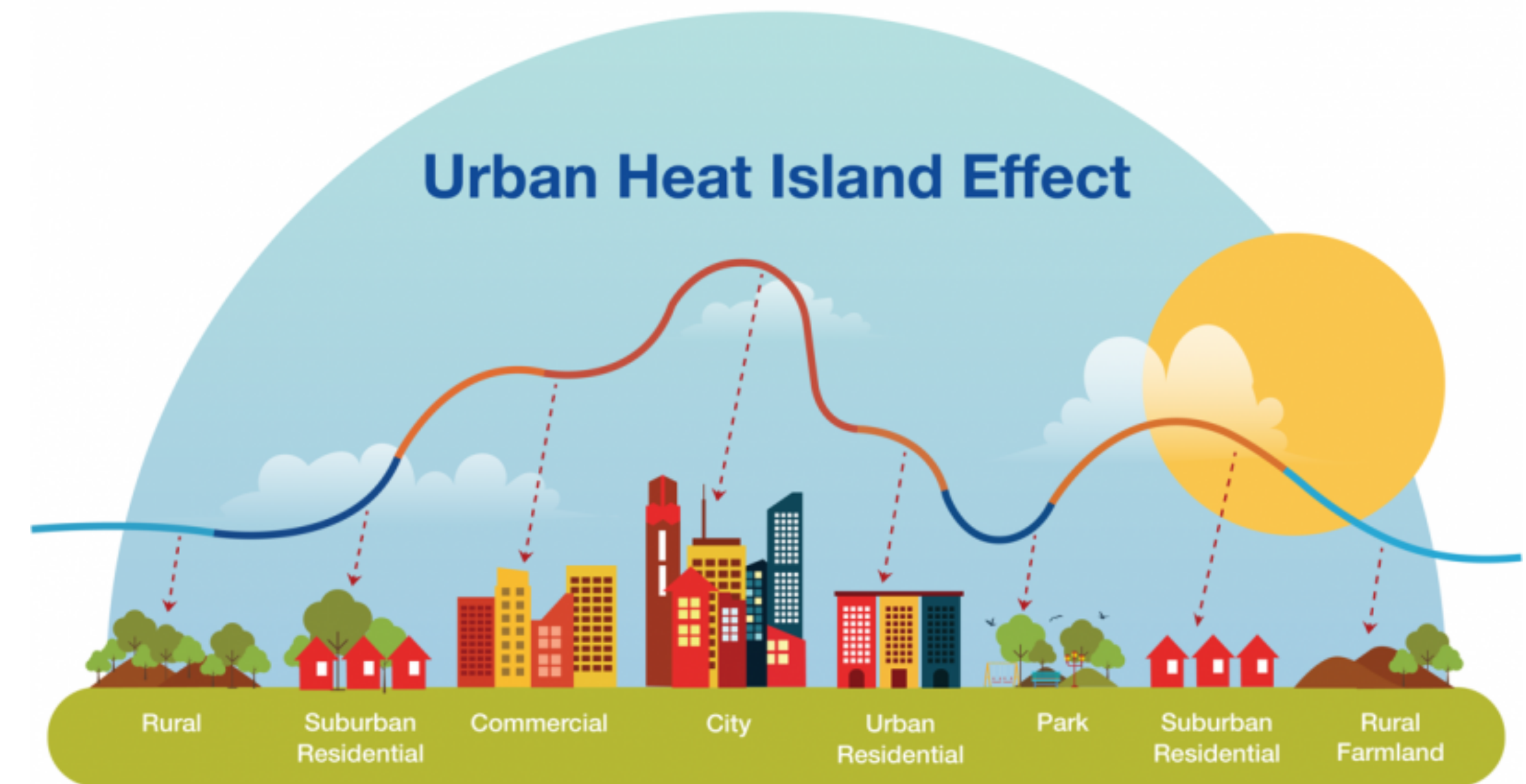
Thailand Initiative : Bangkok and Chiang Mai

TGO, PMUA, PDMO, World Bank

Agenda

Cooling and Greening Program

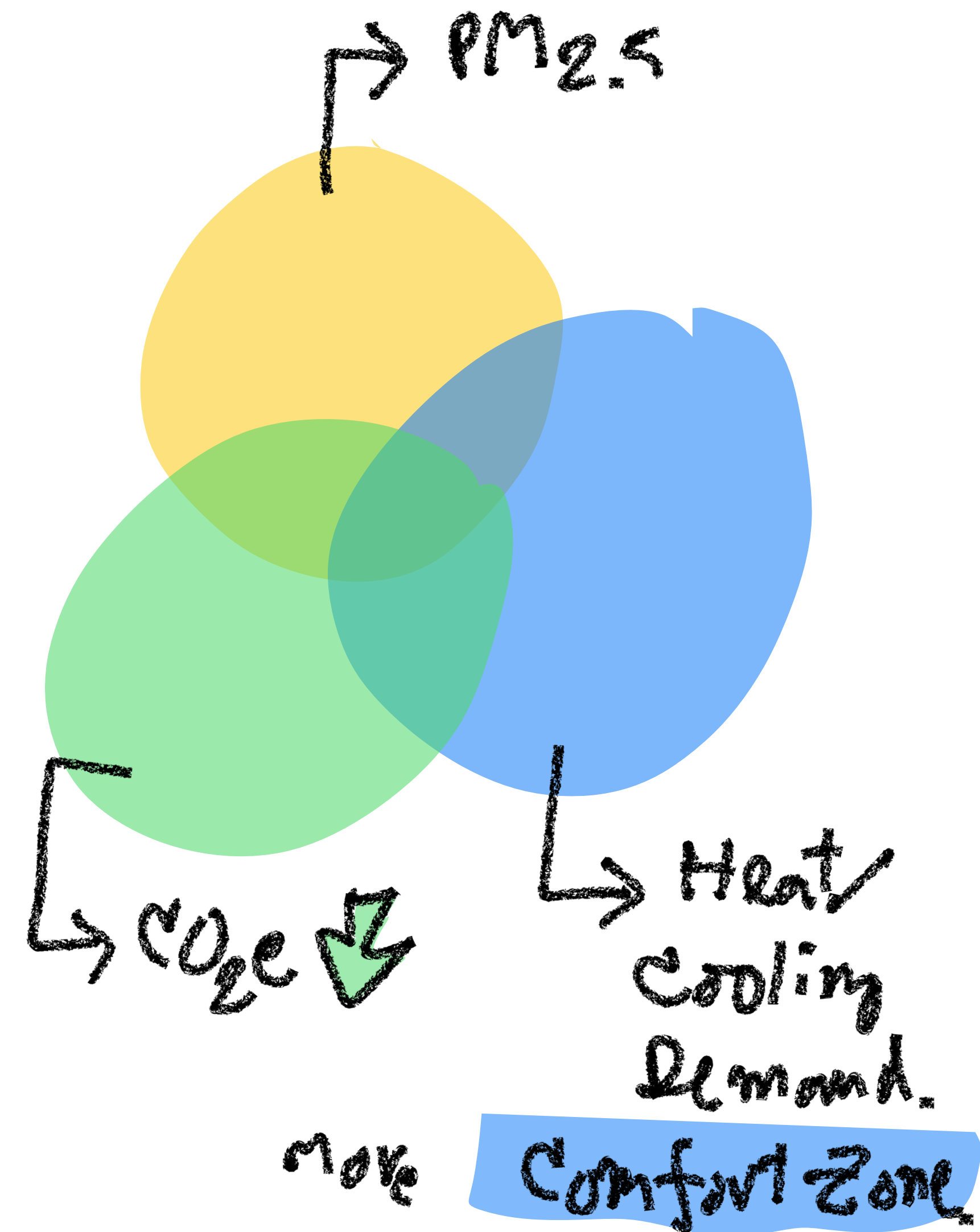
1. Background / Description of Challenge
2. Scope
3. Objective
4. Program
5. Possible Outcomes and Impacts
6. What's Next



Background & Challenges

City Cooling and Green Program

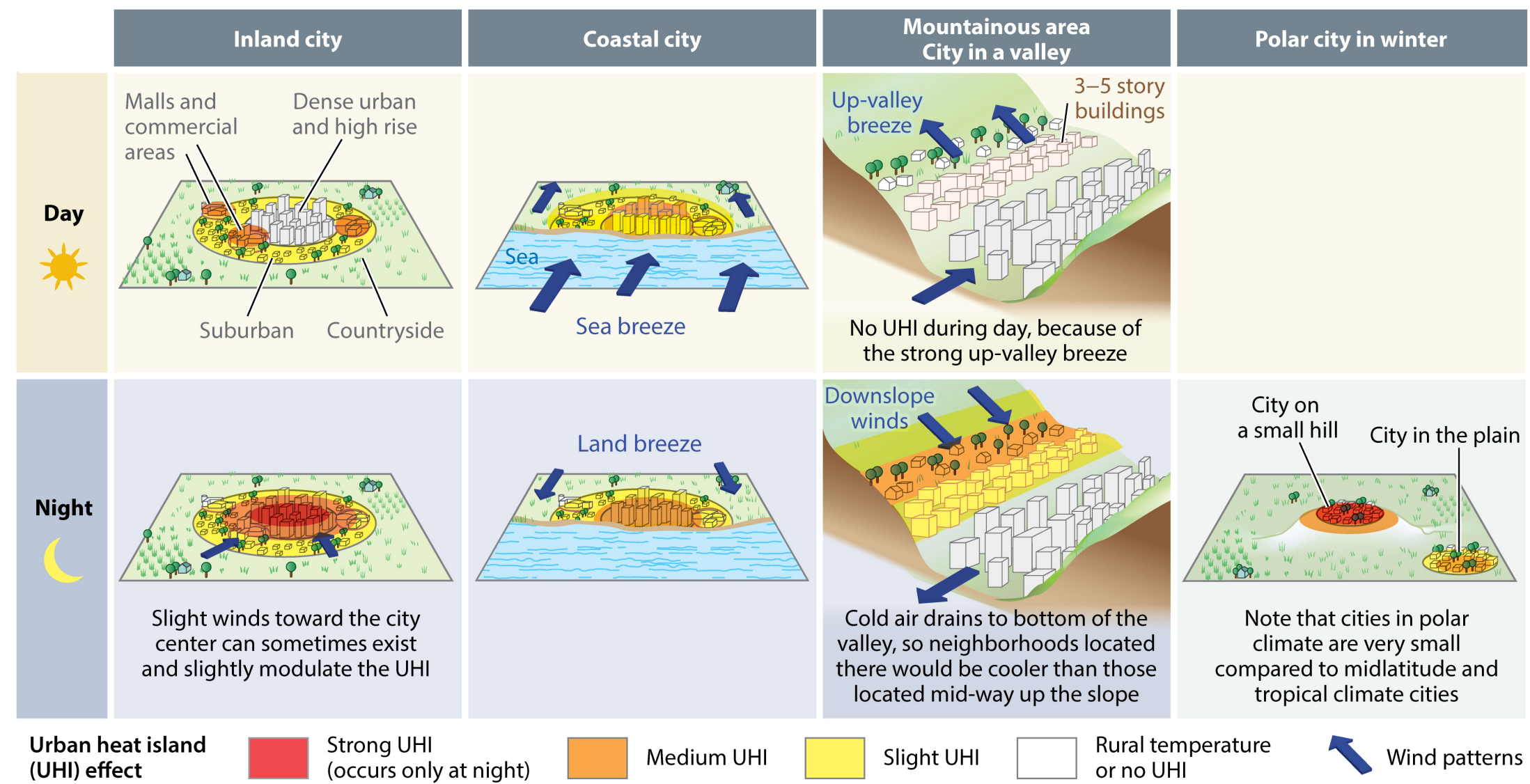
- More pressures from Global Climate Change such as more severe heat wave, extreme weather, etc.
- More climate forces policies, e.g. non-tariff, green supply-chain restriction.
- Technology readiness : New possible technologies for making city cooling and green programs feasible.
- Energy price is more sensitive. Heating leads more A/C installation, and demand of active cooling cost from A/C.
- Potential interlink between urban heat island (UHI), city terminal inversion, and air pollution (PM 2.5)



Objectives : Learning Goals

Cooling and Greening Programs

- Urban Heat Policies and Technologies from best practices.
- Networking for future collaboration



Key Taking Away

Technical Deep Drive : Policy Side

- UHI need holistic approach, not easy but necessary in near future.
- Awareness is a key stepping stone, therefore economic impact data and assessment is essence, e.g. economic impact coefficients.
- Need to have host in UHI issues and working on it continually, particularly working on policy and practical side. Also, the community need to engage closely at the early state.
- Urban planner plays a critical role in this process.
- Carbon Finance can be a core transition fund instruments.



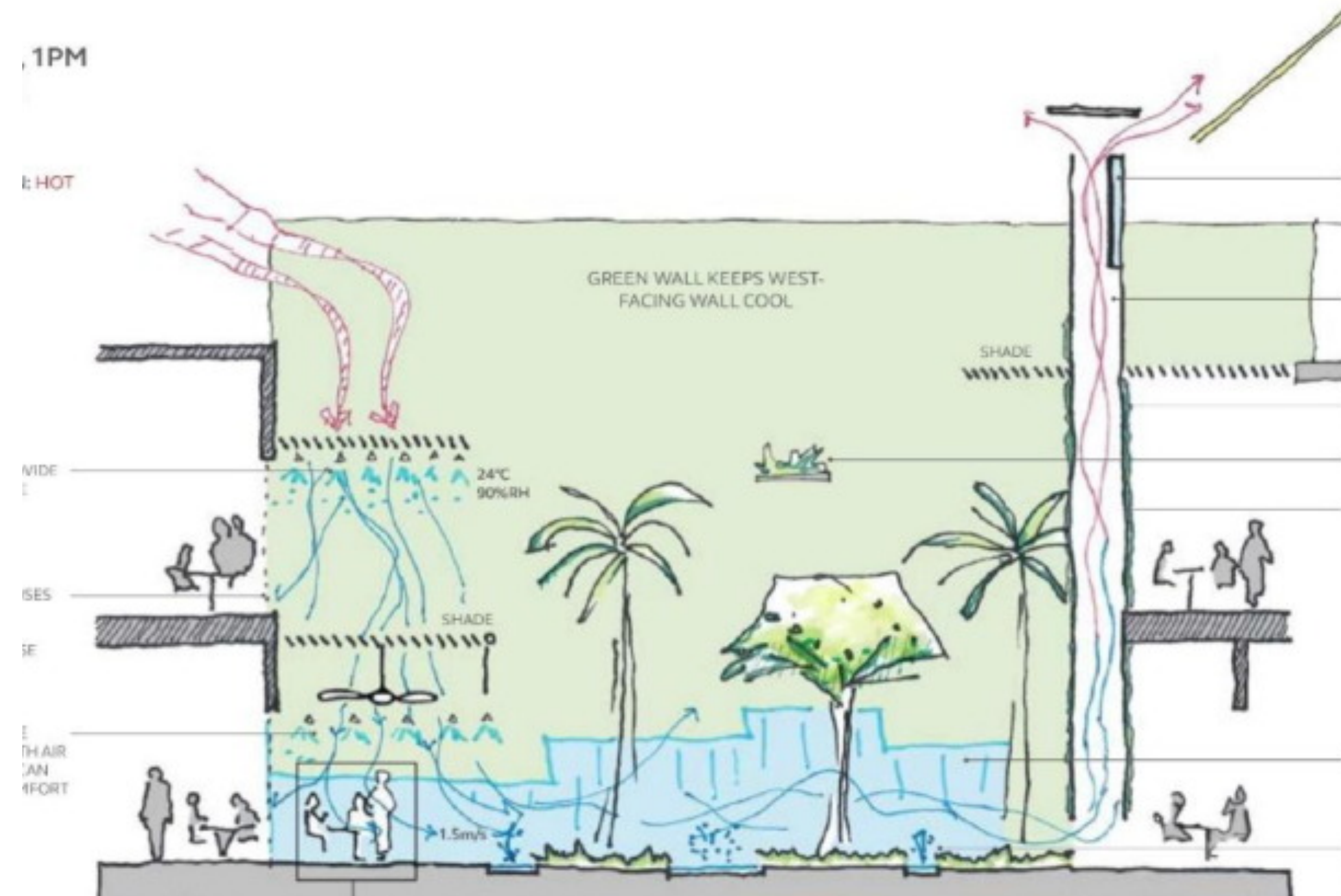
Singapore is an unusually green city

- A green environment as a cornerstone of Singapore's development approach
- Started 60 years ago during period of rapid urbanization
- Green city ideal had different names, different aspirations:
 - A Garden City
 - A City in a Garden
 - A City of Gardens and Waters
 - A Biophilic City in a Garden
 - *A City in Nature*

Key Taking Away

Technical Deep Drive : Technical Side

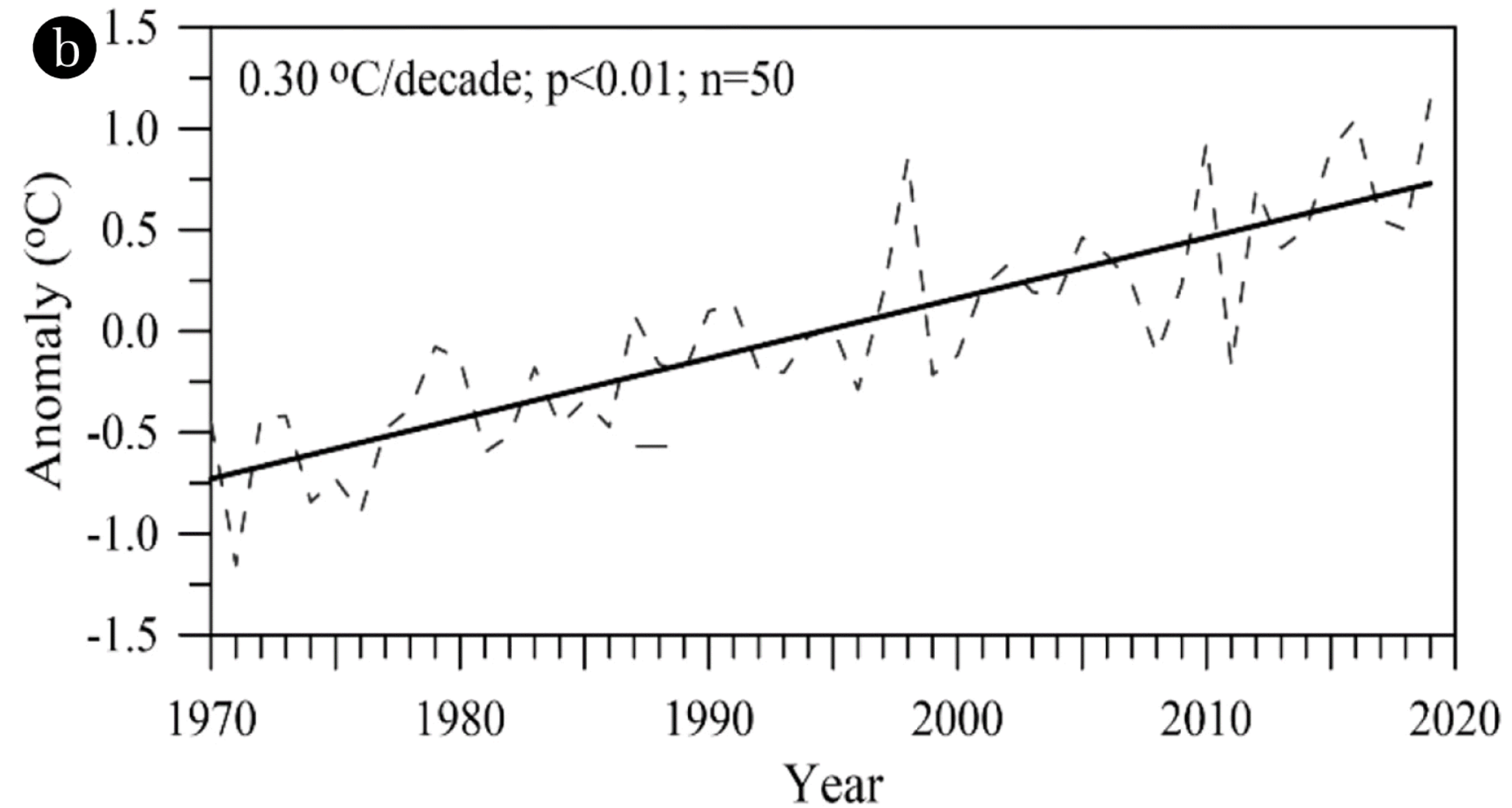
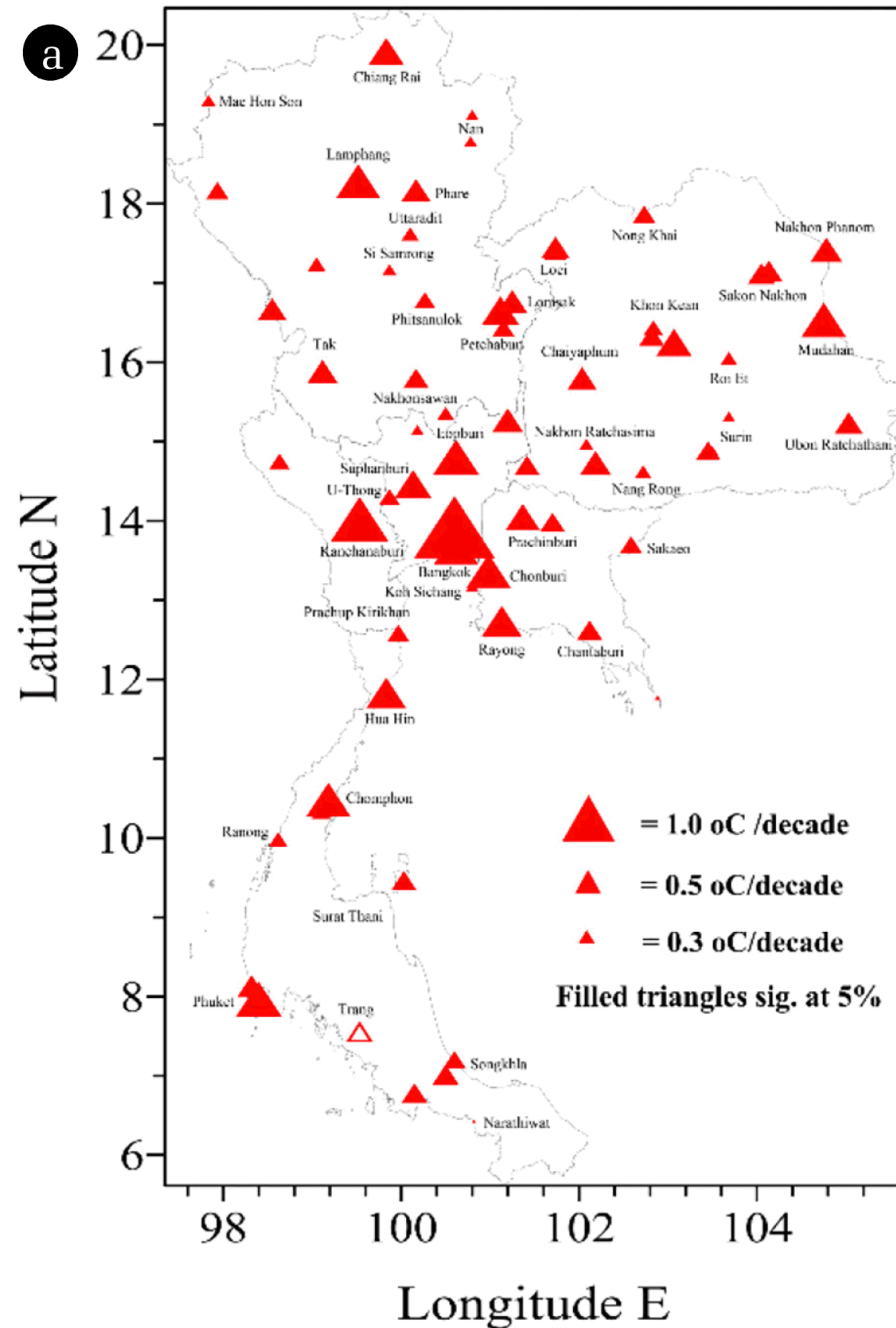
- UHI Data structure system is required. Data and Simulation is more available.
- Cutting edge of building design and technologies, e.g. active cooling and passive cooling, are possibly feasible, particularly in ecological planning.
 - District cooling technologies and policies is the future in these issues, as integrated UHI platform.
- Need to transform UHI research to city regulation and guideline.
- Need to apply them to appropriate technologies for each area.



Thailand Cooling and Green Initiative Program

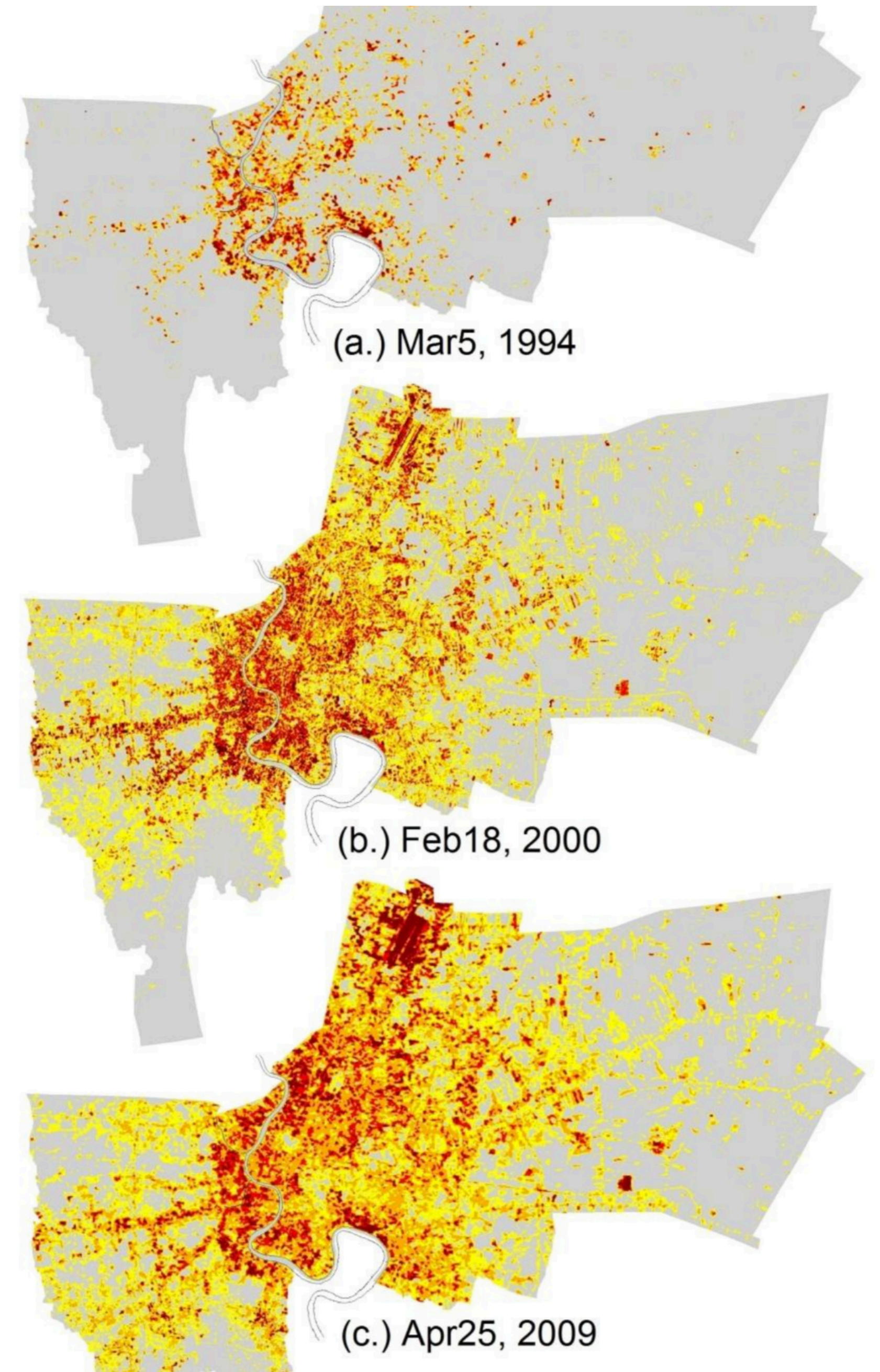
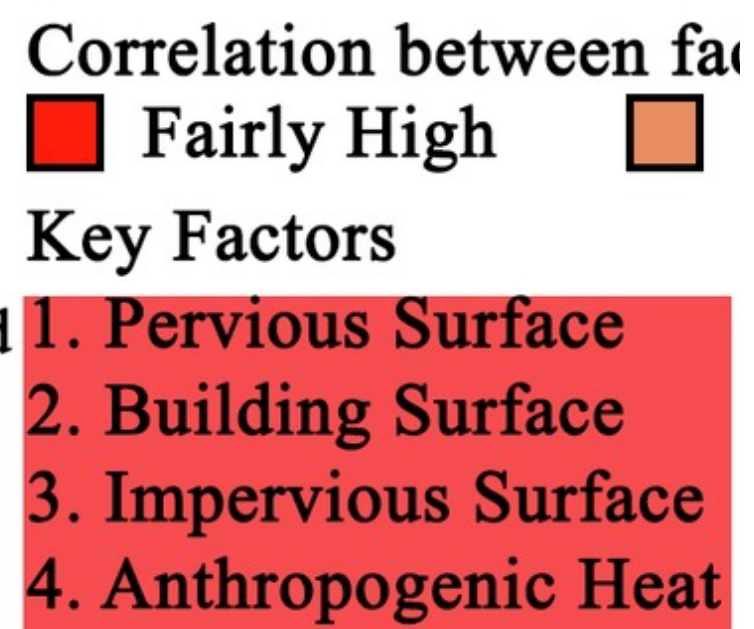
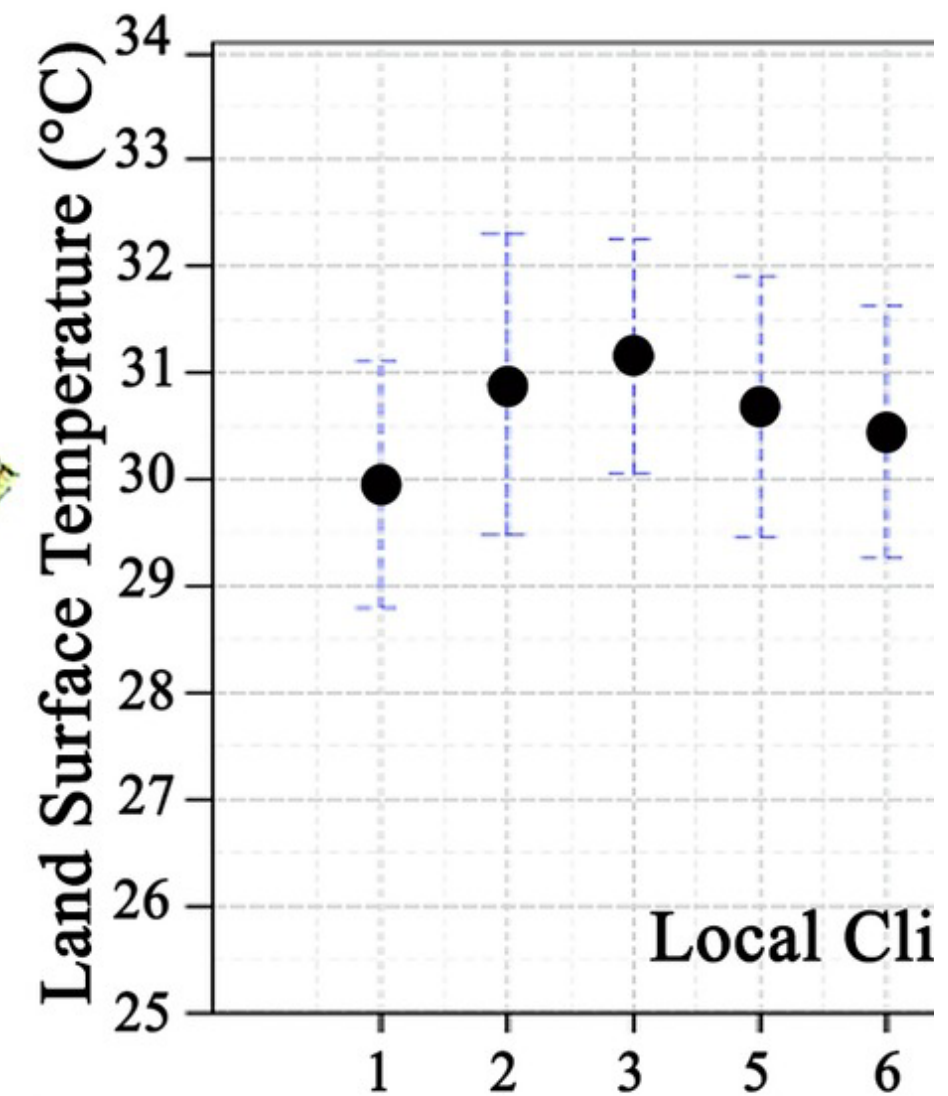
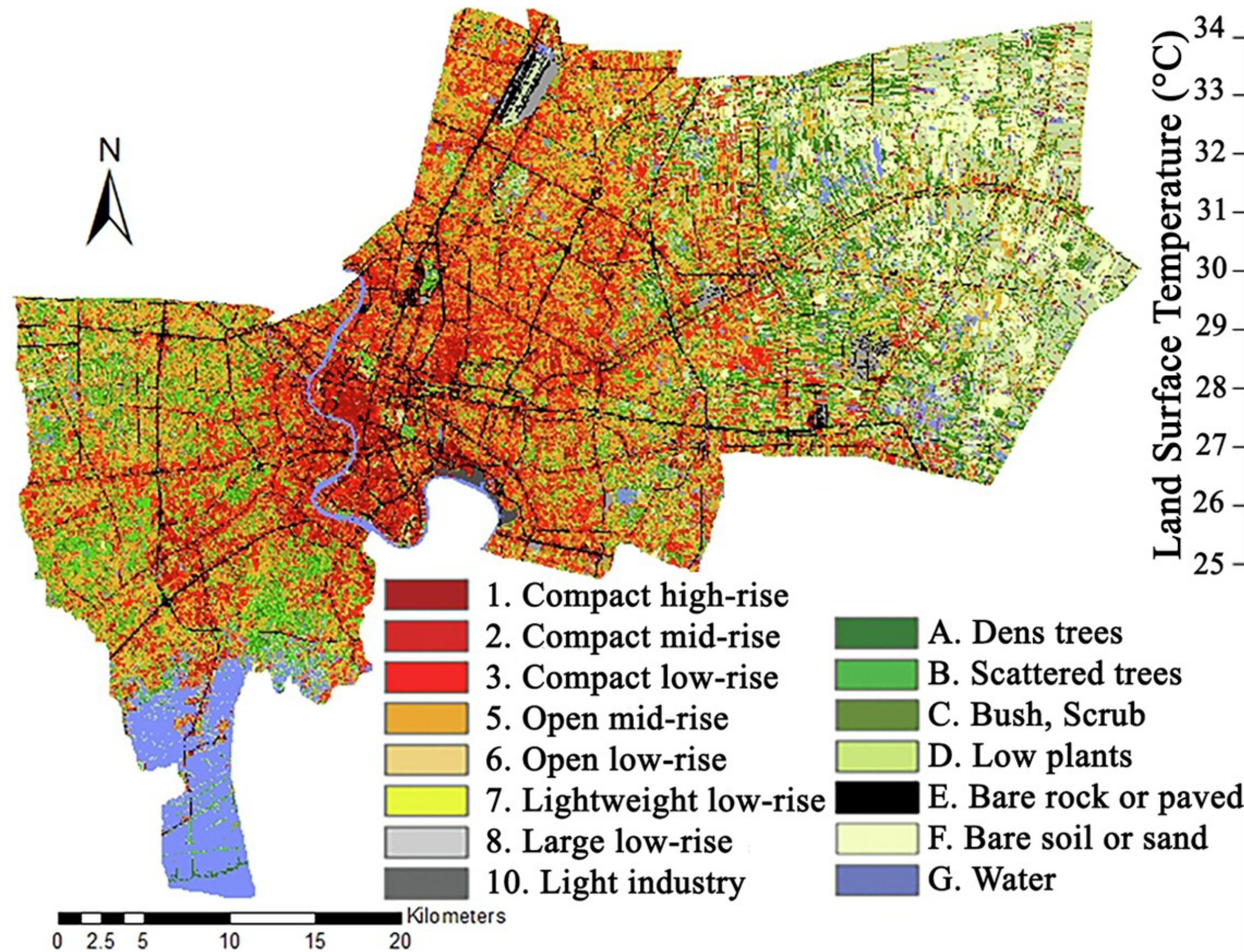
Urbanization effects on surface air temperature

Trends in Thailand during 1970–2019



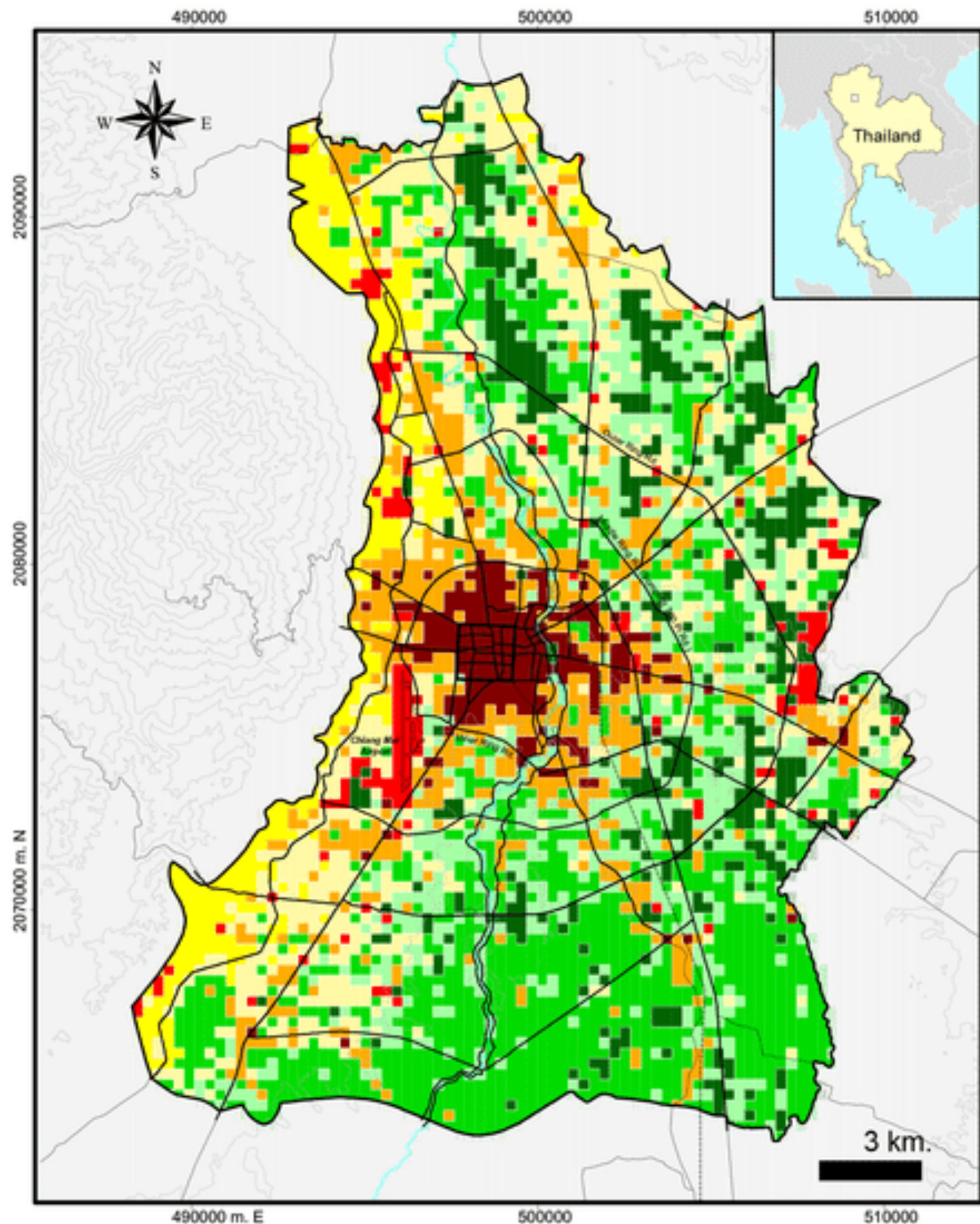
Situation of UHI

A Bangkok Case



Situation of UHI

A Chiangmai Case



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Smoke and Heat: Breaking Records in Southeast Asia

The long-range forecasts paint a bleak, hot outlook, with suffocating heat and smoky air across Myanmar, Thailand, Laos, and Cambodia.



By [Luke Hunt](#)

April 24, 2023



A record heatwave combined with intense smoke from burning off cropland has created the worst living conditions in memory across mainland Southeast Asia, amid long-range weather forecasts that this year's dry season will last longer than usual, to be followed by less rain than usual.

Temperatures are routinely exceeding 40 degrees Celsius in Myanmar, Thailand, Laos, and Cambodia, stoking fears that the heavy rains last year – which prompted the Mekong River Commission to [declare a](#) four-year drought over – were just a short respite.

Chiang Mai, hemmed in by mountains, has fared worse, with



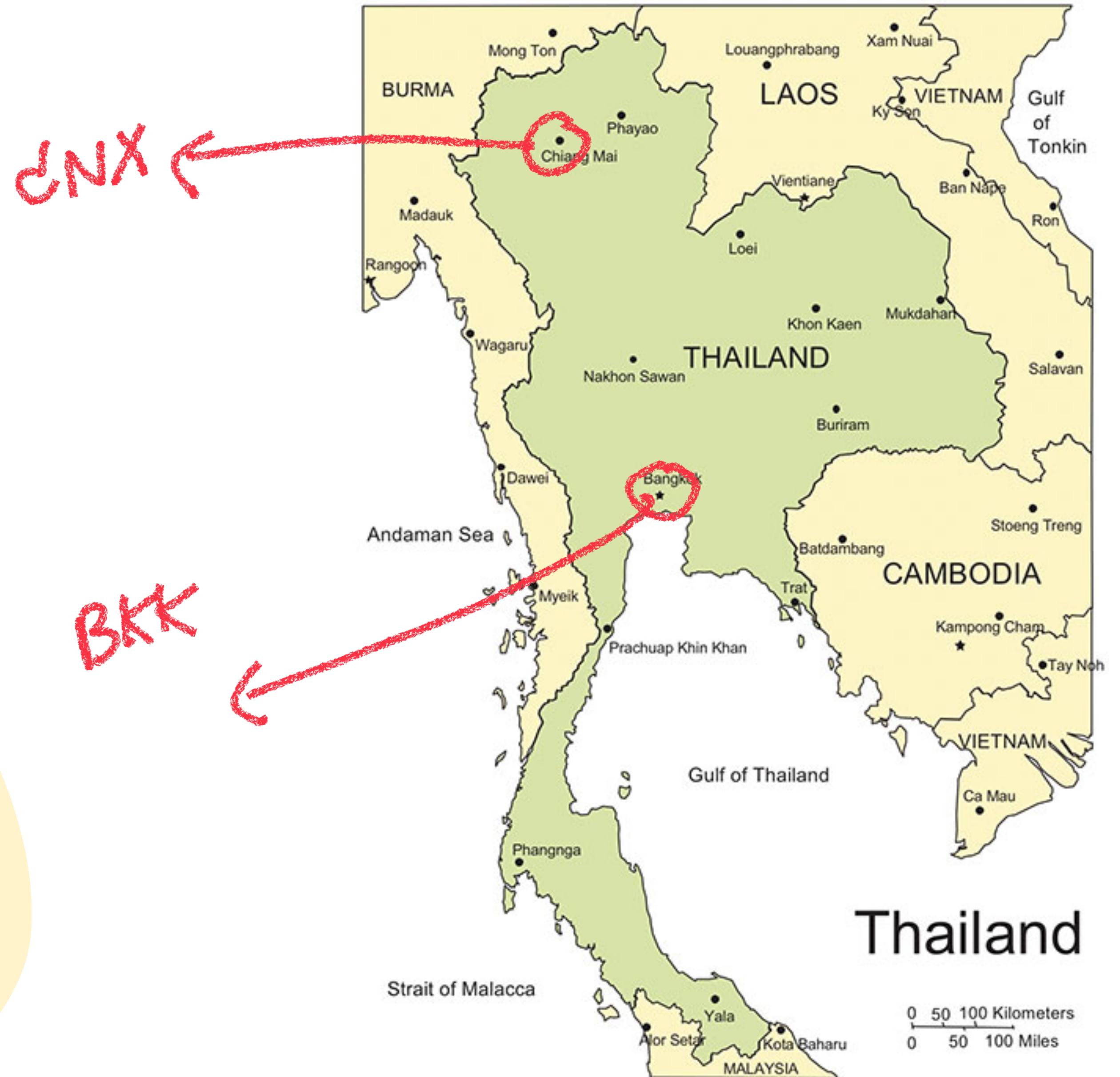
Credit: [Depositphotos](#)

Scope

Prioritized Areas

- Bangkok
- Chiangmai

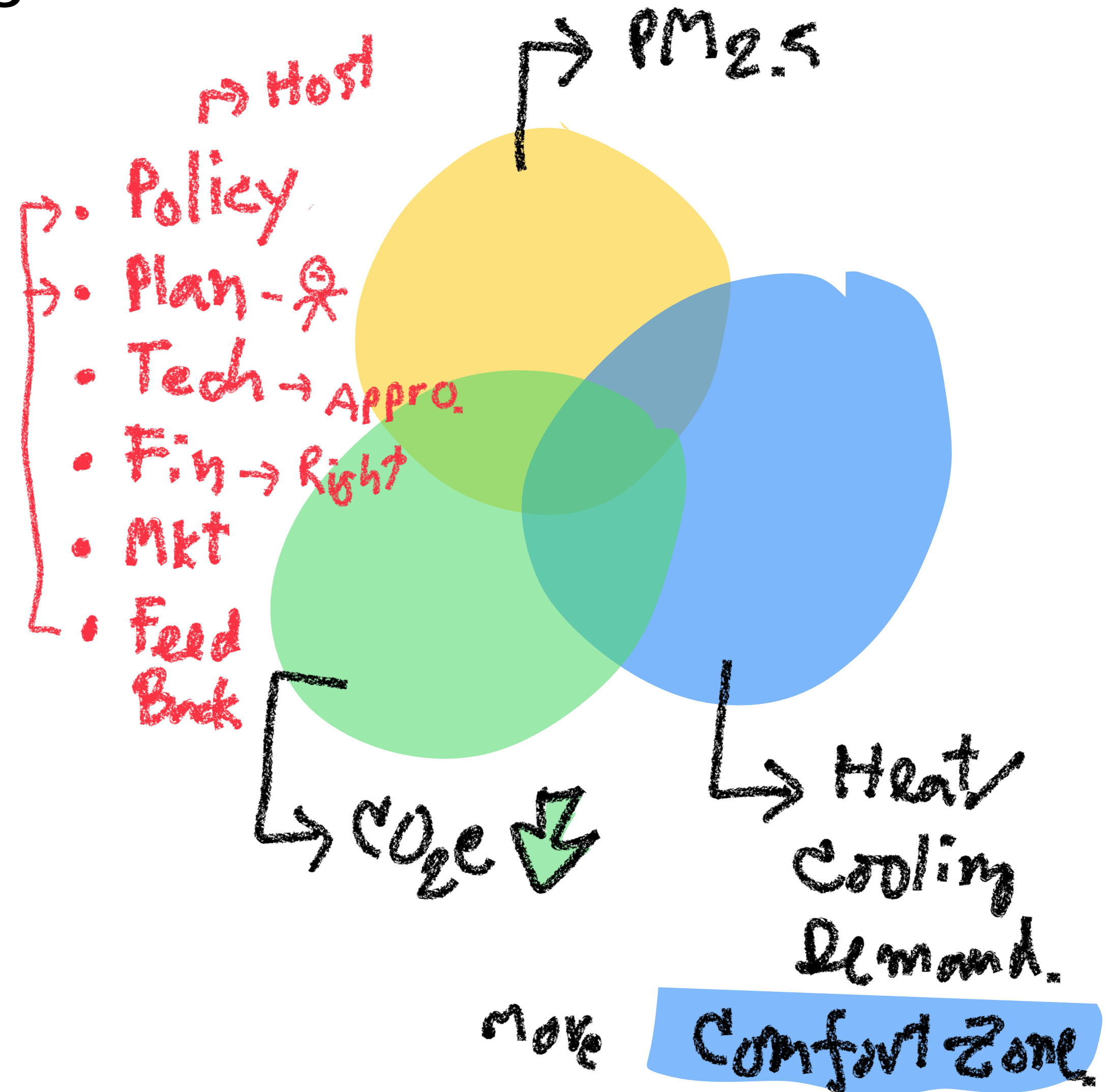
- Heat and Air Quality as Key Pain points
- Potential strong carbon inventory program



Cooling and Greening Program

Thailand Initiative : Bangkok and Chiang Mai

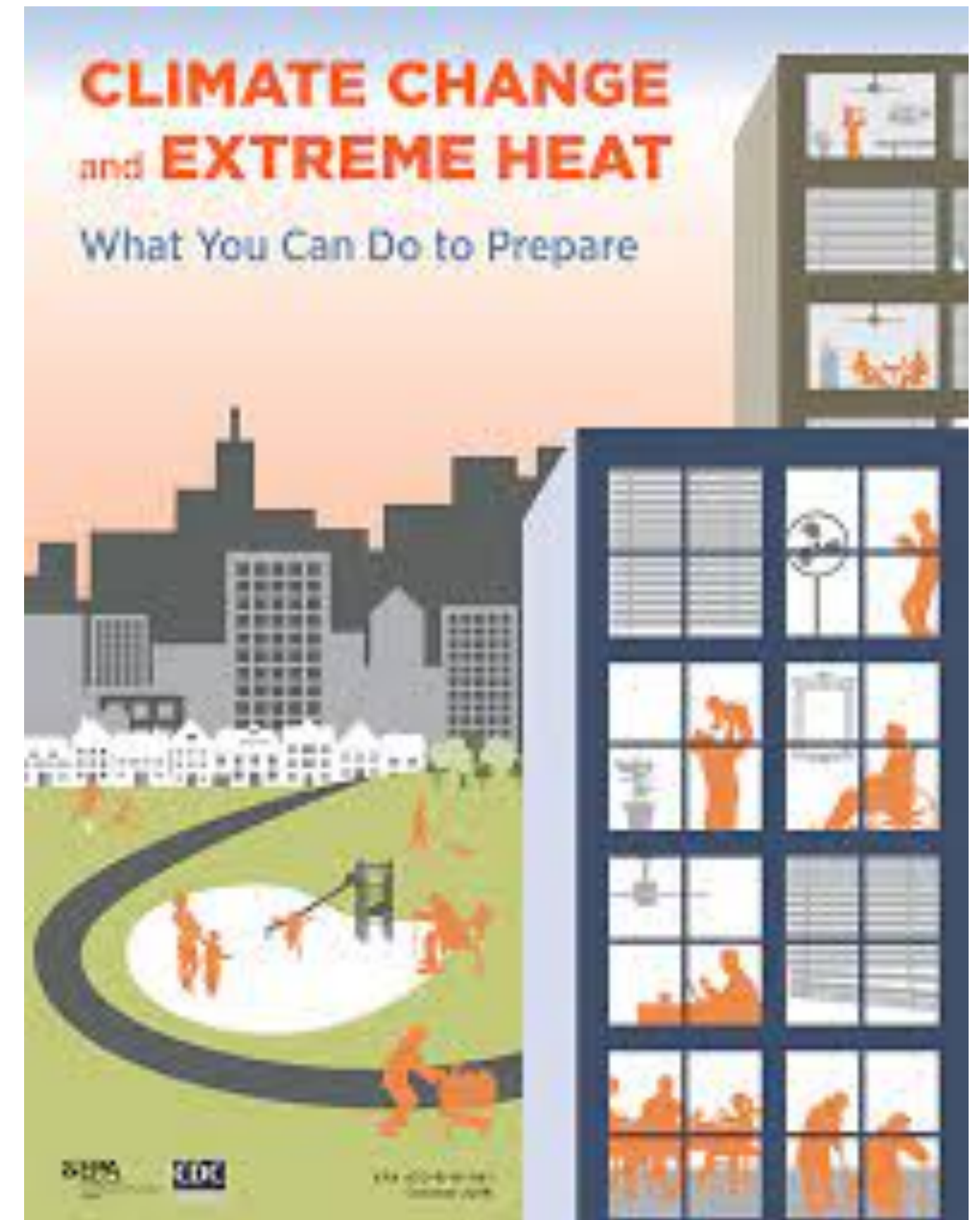
- City Climate Data Warehouse
 - Start from provincial and some city level (TGO x PMUA)
- Area Base Assessment and Bottom-Up Planning from strategic to operation level.
- Knowledge and Technology Linkages, Low Carbon Academy (TGO x PMUA) and our international network.
- Testing this program in carbon market sandbox, learning and improvement before scale up.



Barrier to Implement

Thailand Cooling and Green Initiative Program

- Awareness
- Host in local and National level
- Data and Core Information in this Agenda
- Local technologies, which have been adapted to local.
- Finance



Thailand Cooling and Green Initiative Program

Action Plan

- Setting up Knowledge hub in this issue - Low Carbon Academy (PMUA x TGO and Alliances) (May-June 2023)
 - Setup National and Local Data Center for UHI monitoring
 - Focus more research agenda in these issues
- Deploy TCGI Program at BKK, CNX, EEC, and other 10 cities in the first phase of implementing with WB and alliance. (July-Aug 2023)
- Soft opening this program in “Thailand Climate Action” and “Thailand Smart City Expo” around (Oct-Nov 2023)
- New Department of Climate Change will adopt this issue (Oct-Nov 2023)



Follow Up with SG Partners

Thailand Cooling and Green Initiative Program

