A Heat Stress Study in Faisalabad – Delhi – Dhaka

Tanya Singh (Alterra, WUR)

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Adaptation Futures 2016

Theme 1. Cities and infrastructure - Heat in the city

Heat Waves in South Asia

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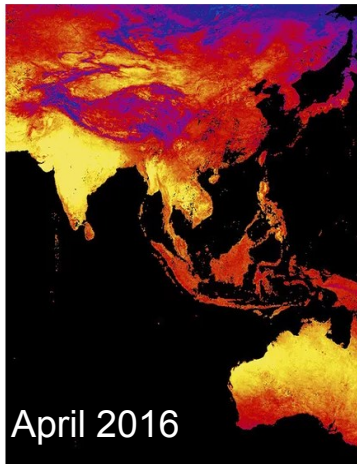
El Niño weakens, but India and south east Asia heatwave continue



Heat wave to go on for two more days

Senior Correspondent, **bdnews24.com**
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Summer sees a rising demand for water while agitations become frequent in different parts of capital Dhaka. Residents of Moghbazar's Wireless Gate area demonstrated demanding uninterrupted water supply on Sunday.

The mild to moderate heat wave blazing across Rajshahi and Khulna divisions along with Dhaka region may continue for two more days, says the Met Office.

The challenges...

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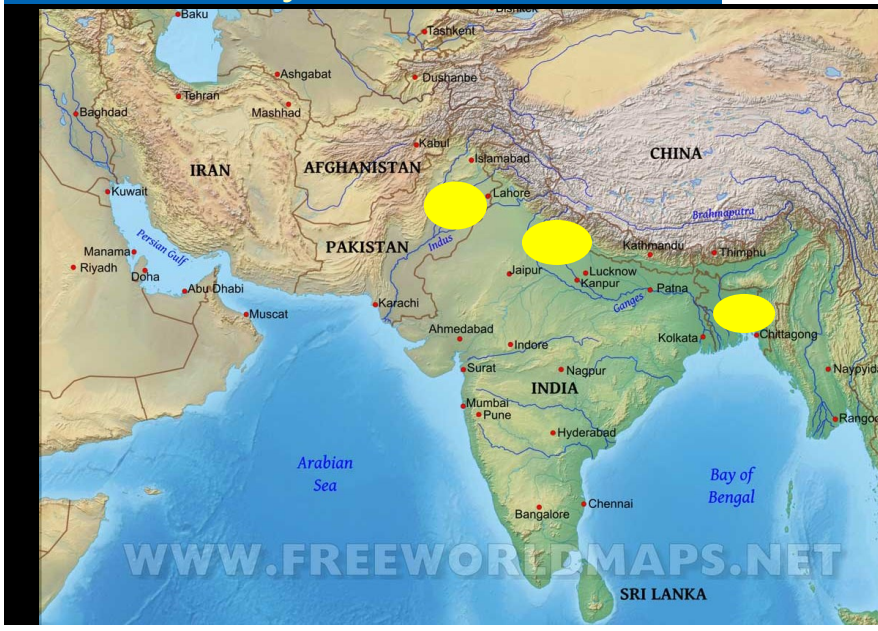
- To better understand the conditions in which vulnerable people, the urban poor people, actually live.
- What are existing alternatives to air conditioning (...and are those sufficient?)?
- How to make cities heat resilient?

Case Study Sites

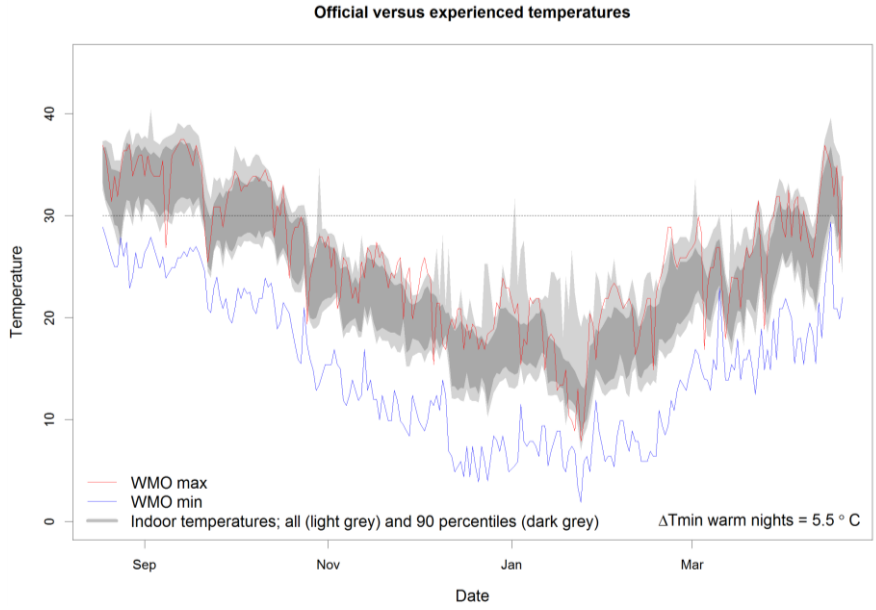


Set-up HI-AWARE

In each city (Faisalabad, Delhi, Dhaka):

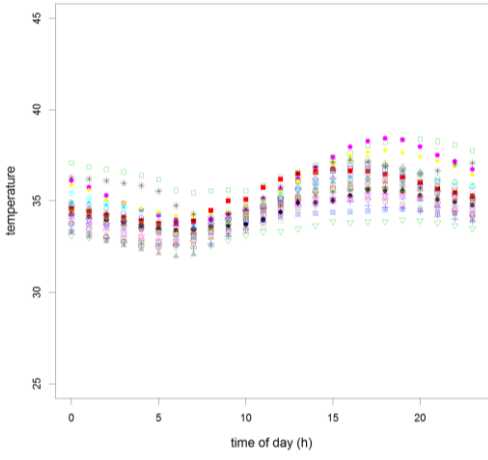
- 60 indoor temperature sensors
- 1 outdoor thermal comfort measurements along a fixed route
- 1 fixed automatic weather station
- Additional measurements with:
  - handheld device
  - thermal camera

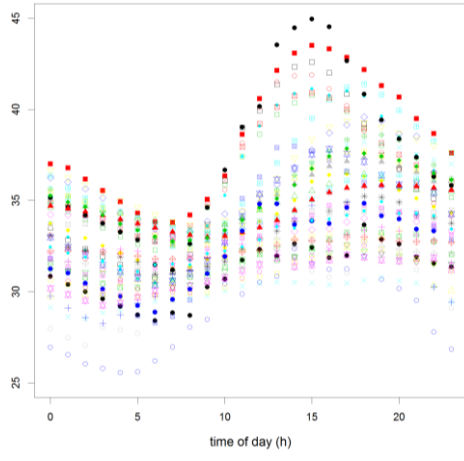
Faisalabad Exposure Level



Adaptation potential

Indoor Temperature spread Faisalabad & Delhi





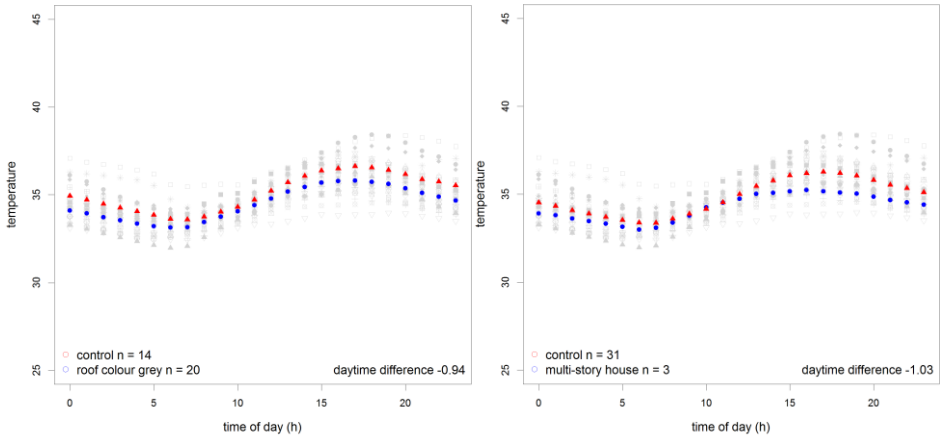
Faisalabad:

Mean diurnal variation of the indoor temperature in 34 houses, 07-09 Aug 2015

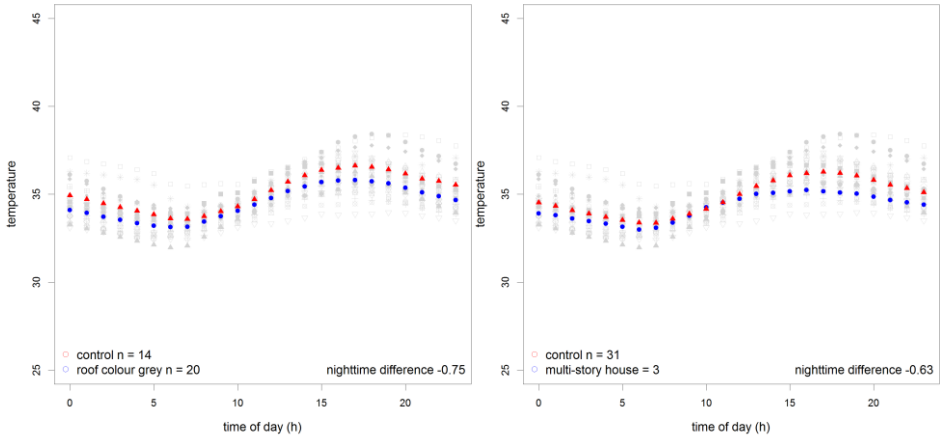
Delhi:

Mean diurnal variation of the indoor temperature in 41 houses, 15-17 April 2016

Differences Based on Housing Attributes Faisalabad (day)



Differences Based on Housing Attributes Faisalabad (evening)



Outdoor Measurements Fais.

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Outdoor Measurements Fais. II

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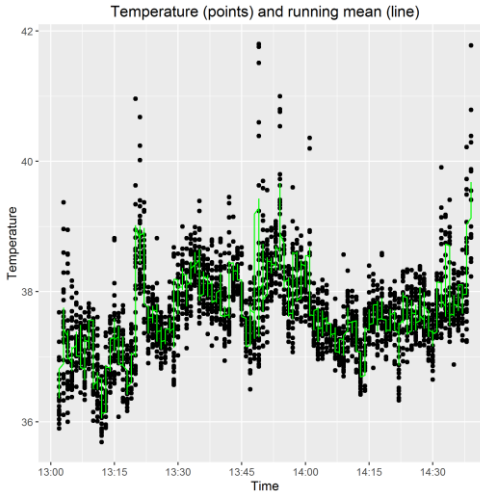
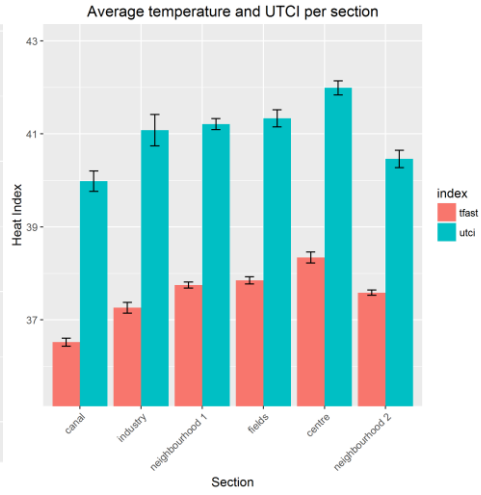
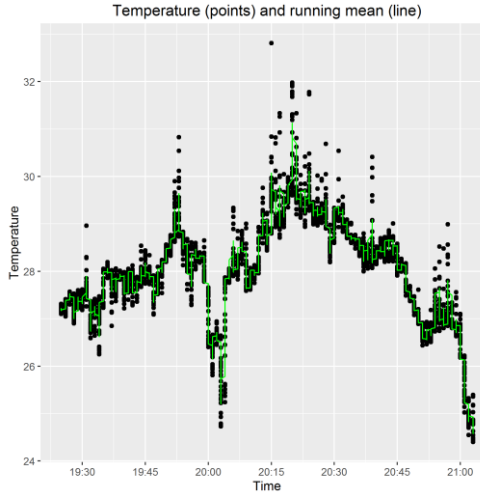
Afternoon Transect

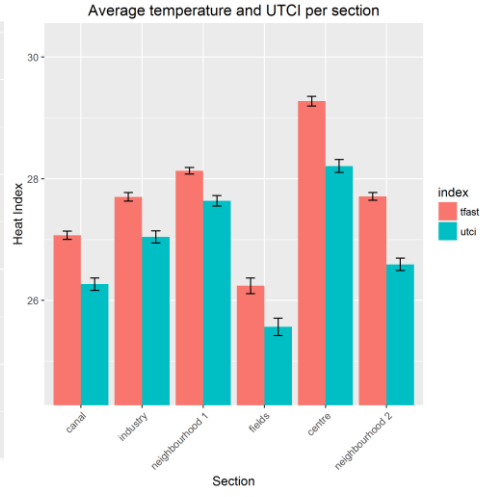




Faisalabad: *21 April 2016*

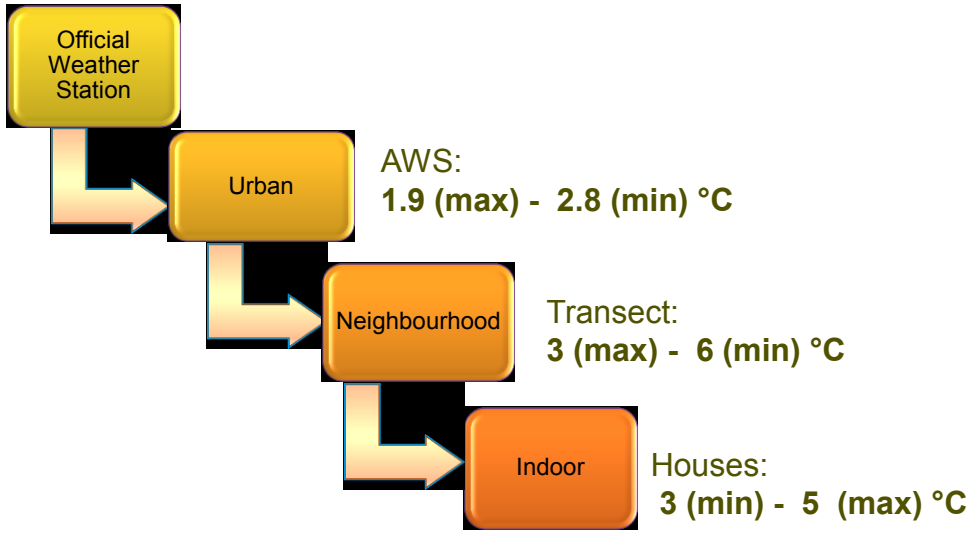
Evening Transect





Faisalabad: *21 April 2016*

Exposure Variation Faisalabad



Some thoughts

- Exposure levels vary a lot - there seems potential for adaptation
- Explore the combination of options
  - to adapt to extreme prolonged heat
  - to higher minimum temperatures
  - using low-cost low-carbon options (but will it be enough?)
- It is not only about mortality, but also about productivity and morbidity

Thank You

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Dhaka

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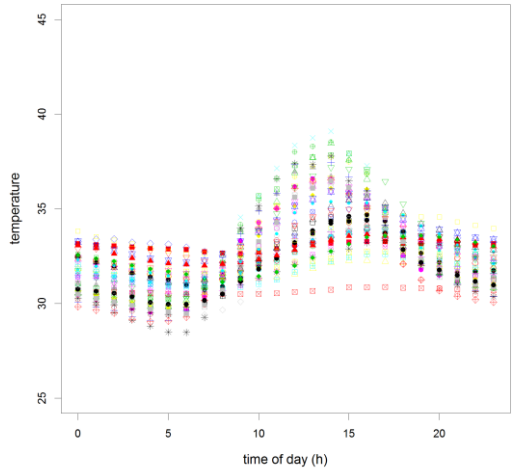
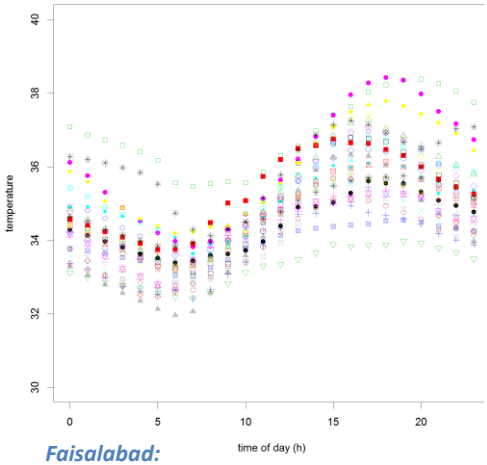
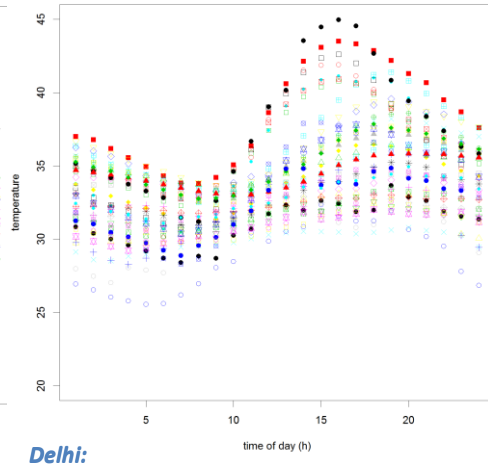


Mean diurnal variation of the indoor temperature at 50 differing houses, 11-13 April 2016

Indoor Temperature Spread Faisalabad & Delhi





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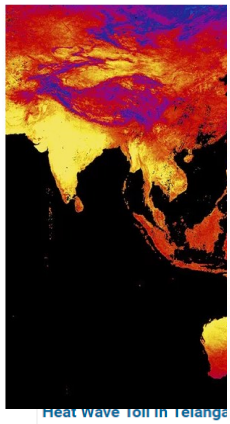

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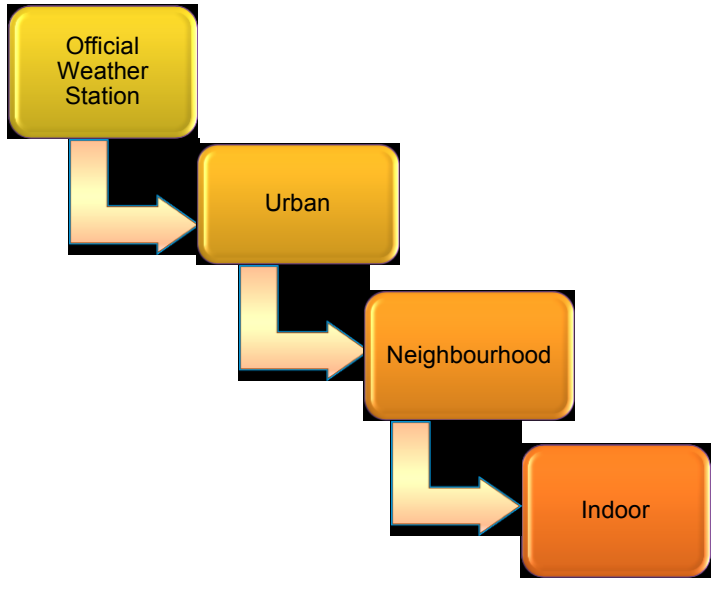
Telangana News | Indo-Asian News

The death to

Set-up

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