Extreme heat impacts on food security in Africa

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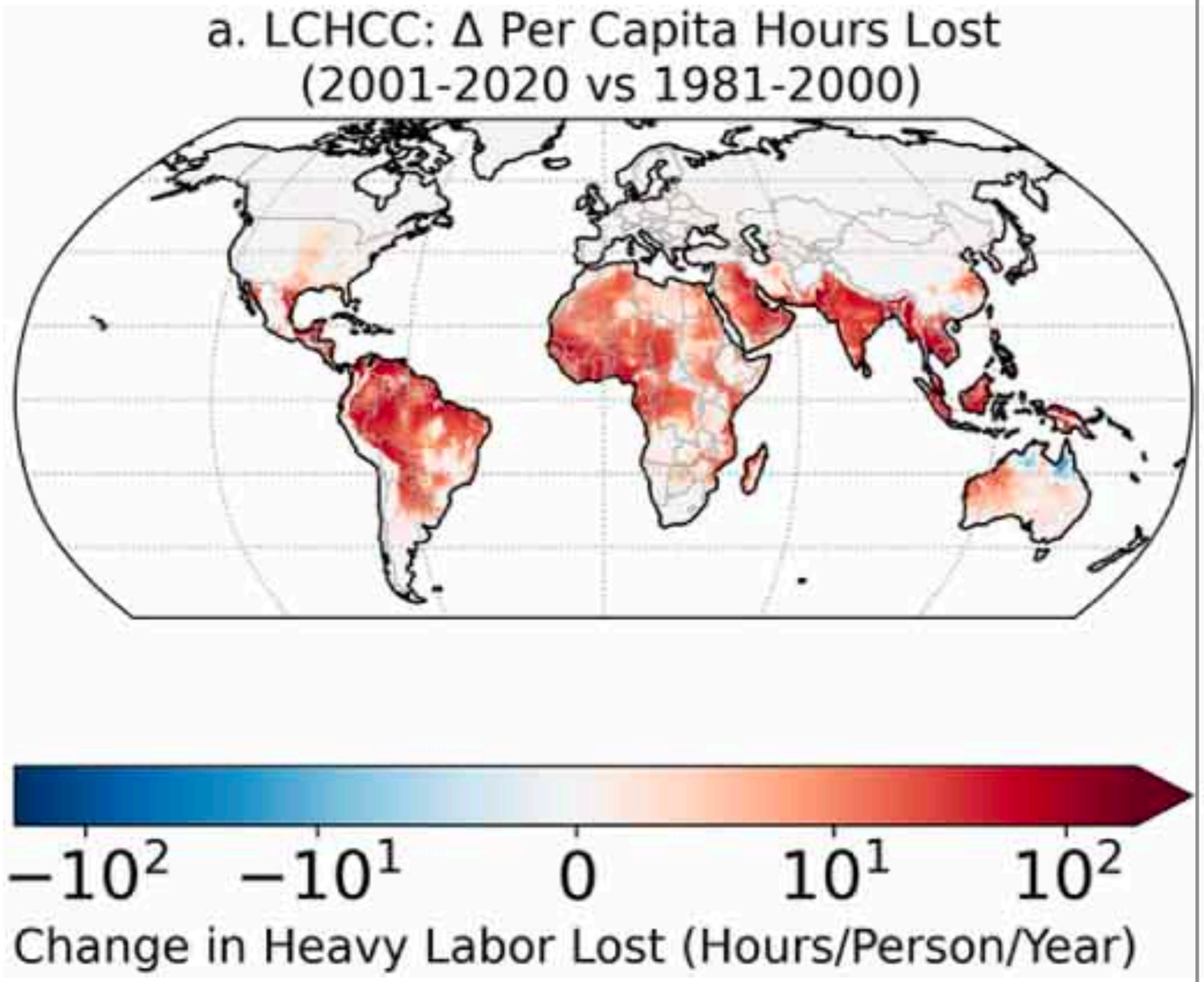
… and from tireless effort of colleagues around the world.

Thank you.

Context

- Extreme hot-humid heat is reducing labour productivity across Africa.
- Low-income urban households across African cities regularly experience food insecurity.
- Urban food security depends on labor output and price … many in cities work outside.
- Smallholders depend on non-mechanized labour for both self-consumption and sale.
- Hot-humid can make happier crops but less happy rural workers.

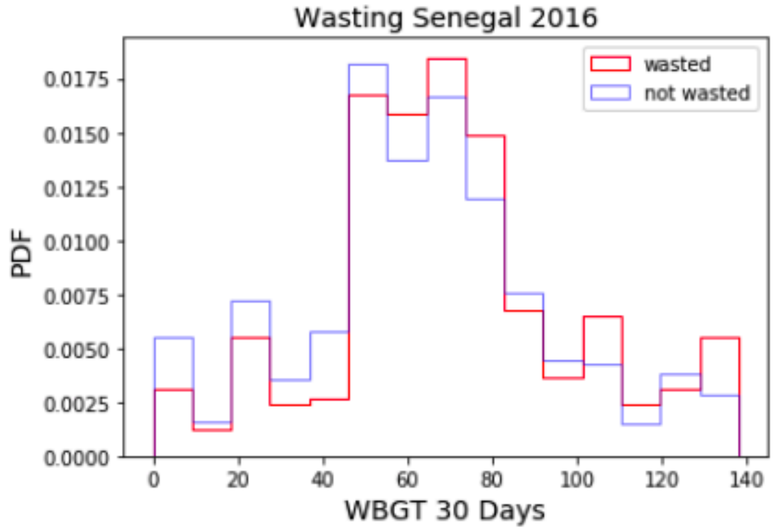


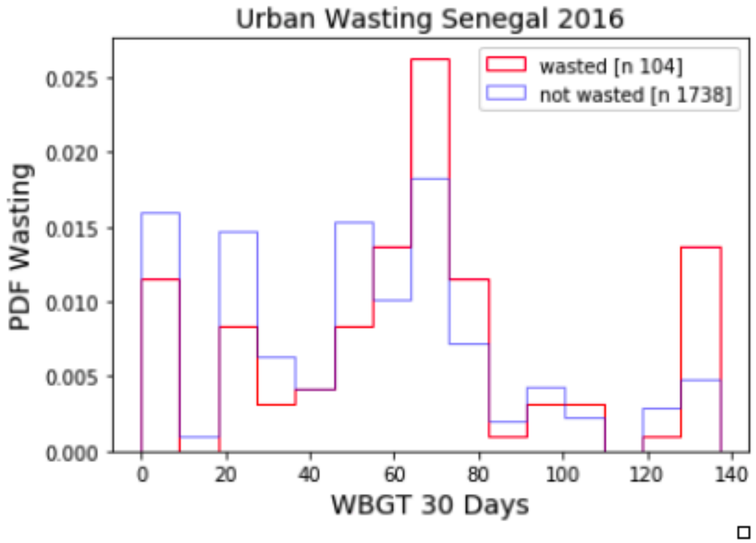
Parsons *et al.* 2022

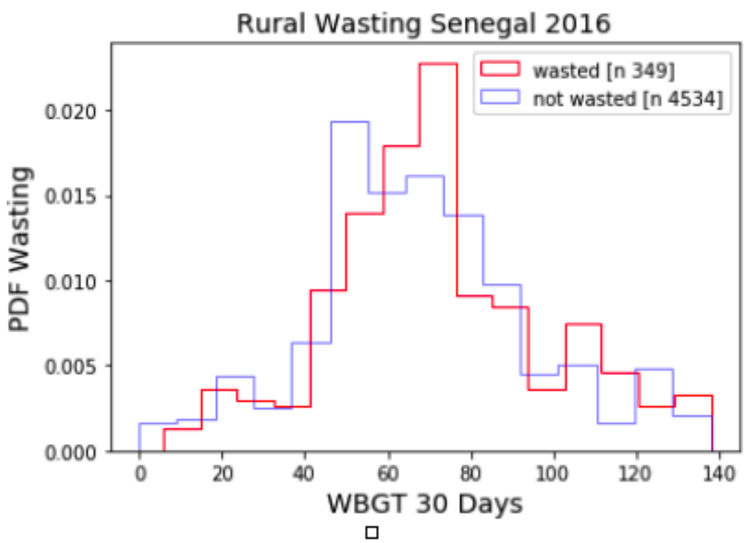
Tuholske et al 2020; Bleckking et al. 2020 Davies et al 2021

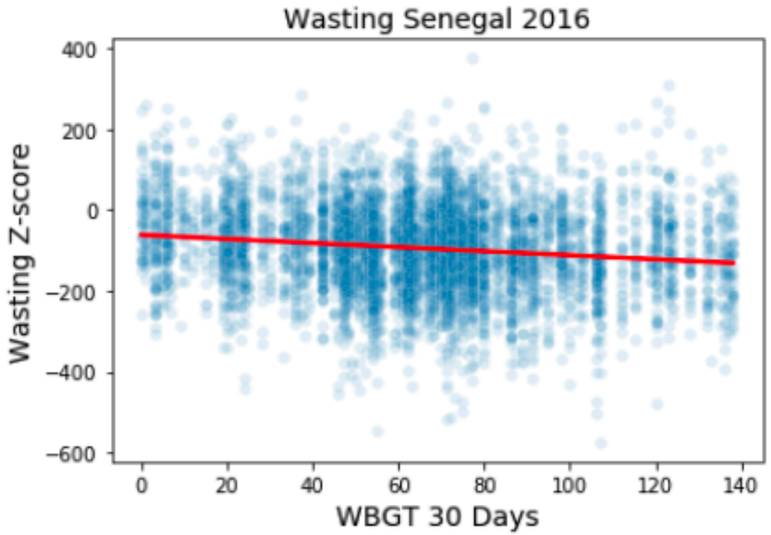
How does extreme hot-humid heat impact food insecurity across urban and rural households?

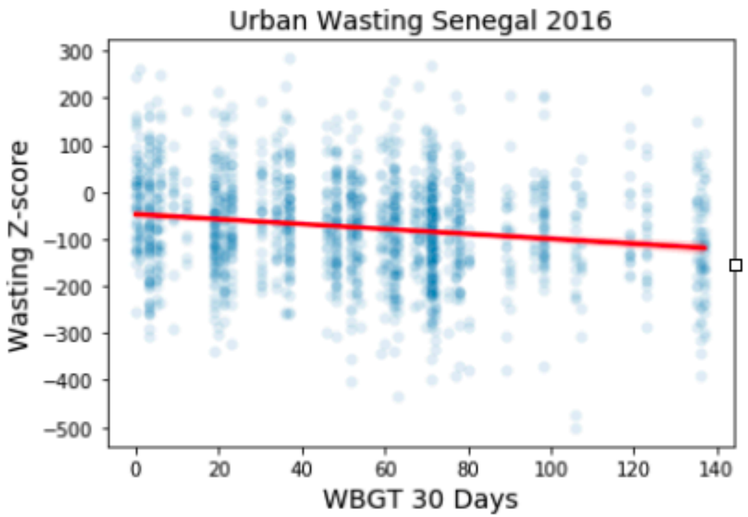
Preliminary Results: Senegal 2016

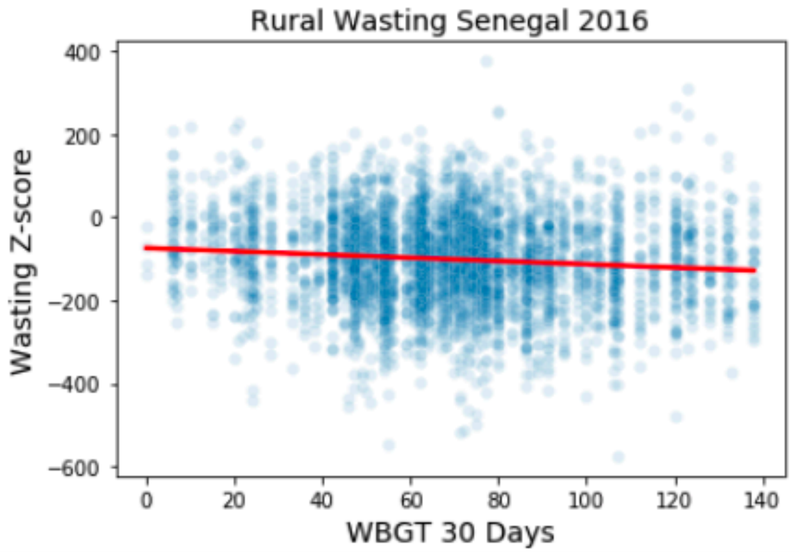






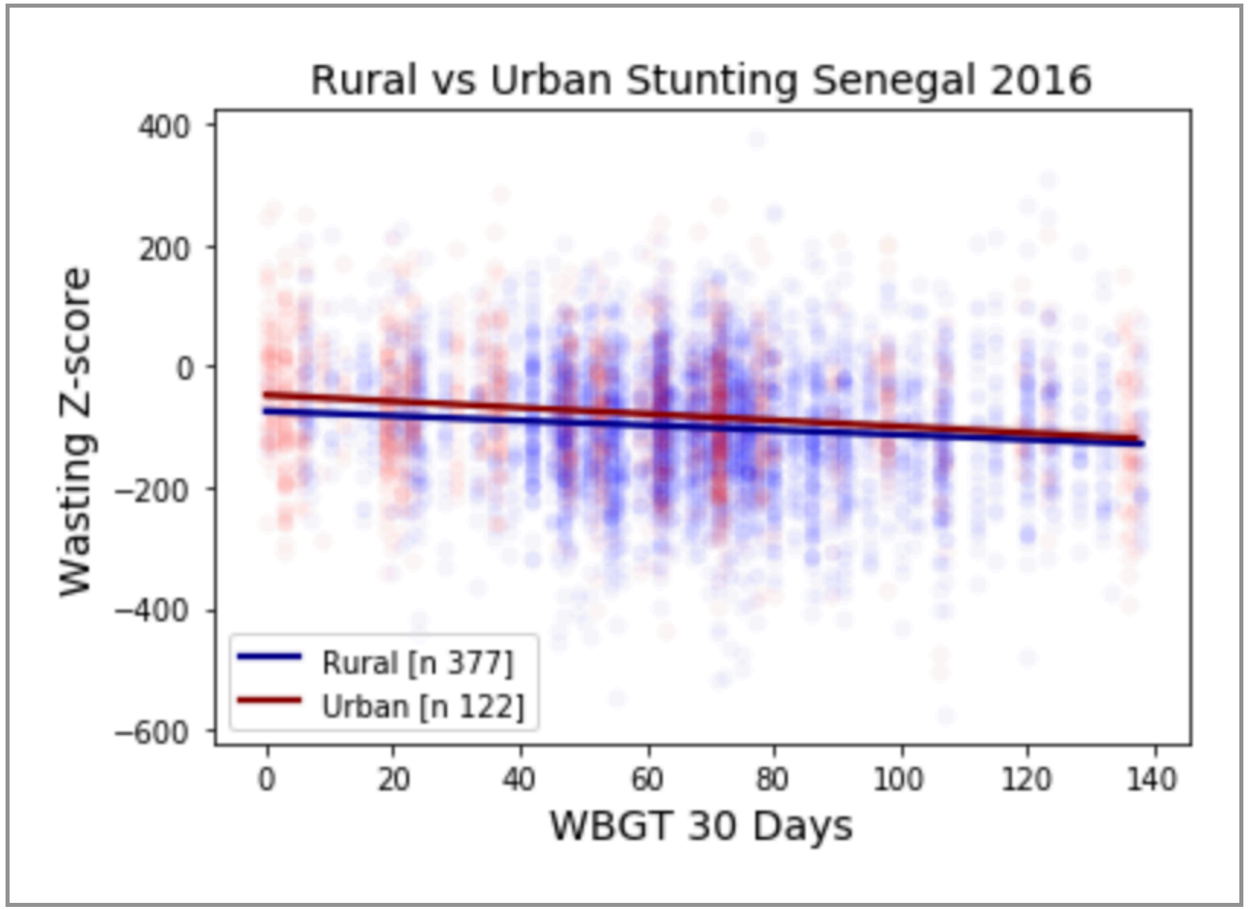






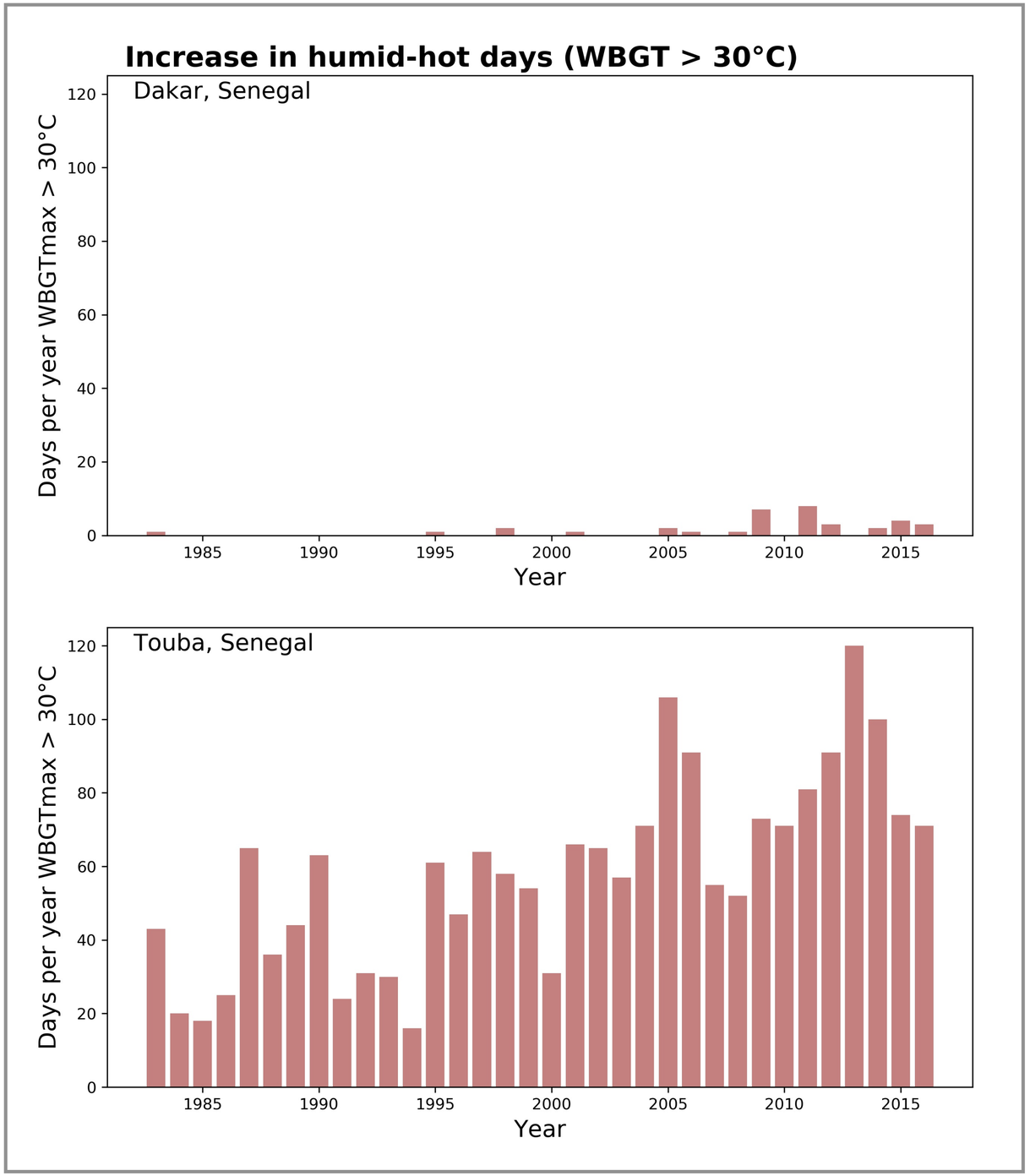
Preliminary Results: Senegal 2016

- An association between the number of days where wet bulb globe temperature > 30°C and child wasting in 2016 in Senegal.
- In other words, DHS clusters with more dangerous hot-humid days have worse acute child undernutrition.
- Rural households may have worse outcomes but the impact of more hot-humid days may be worse for urban households.
- But a lot more work is needed …



Next Steps

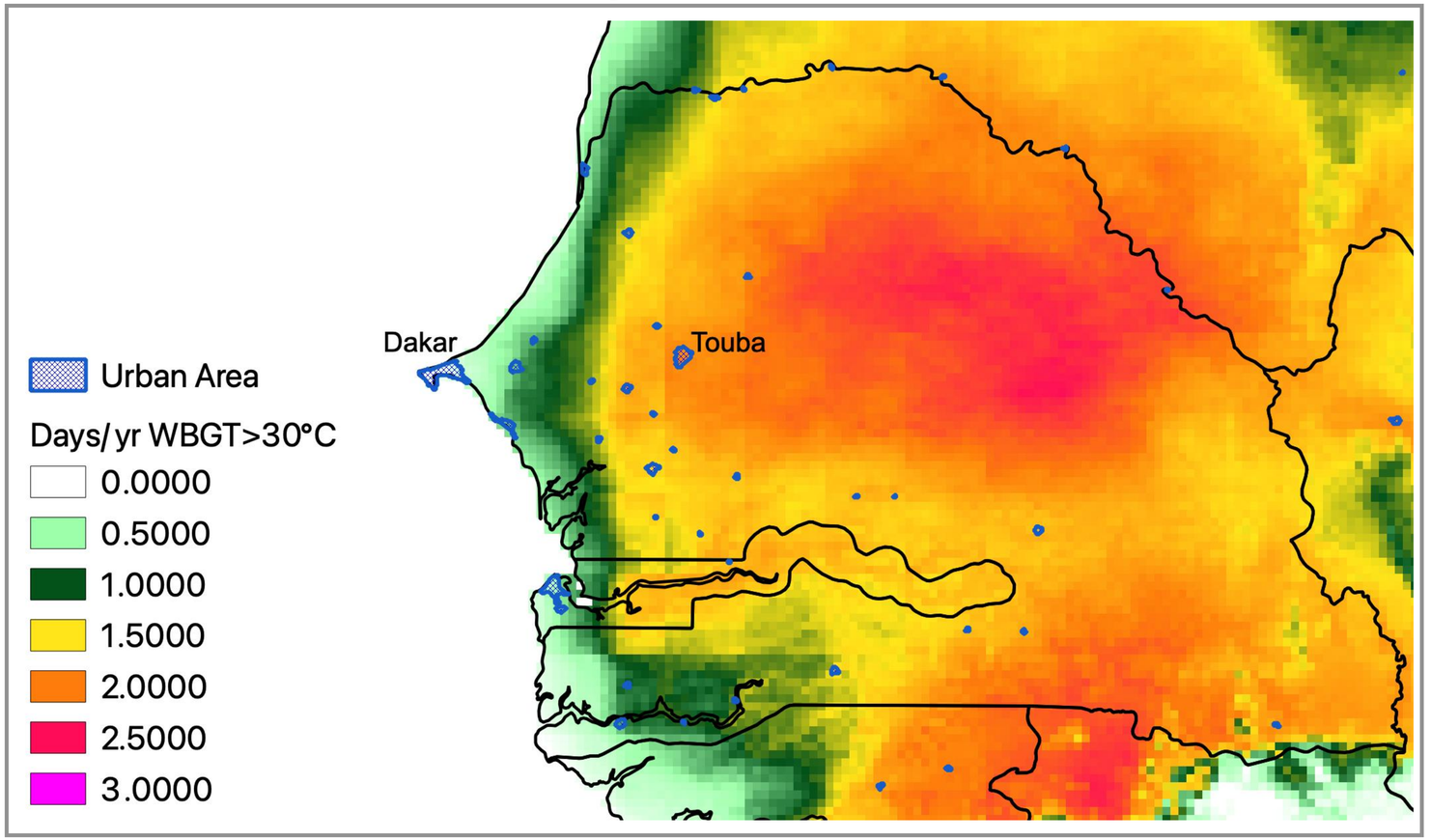
- Compare hot-dry vs. hot-humid heat.
- Fully compare urban verses rural outcomes.
- Add child, household, cluster, and country-level fixed effects and controls.
- Properly assess time-lag of heat and wasting (e.g. two weeks, one month, six months, etc. prior to survey).
- Build models across all DHS surveys and all years.
- Map increasing vs. emerging “hot-spots”



Take Aways

- Understanding how hot-humid heat impact food security is important to assuring food security for all people.
- Hot-humid heat impacts to human health and well-being are worsening, and will only become more harmful.
- We need to adapt now.
- Food insecurity early warning systems need to account for how hot-humid impacts on labor output, especially in urban areas.

Increase in humid-hot days (WBGT > 30°C)



Thank you!
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