



Swiss TPH



*Climate Change and Health  
in sub-Saharan Africa –  
Achievements and prospects*

September 2022

# Our public health motivation



courtesy of Stuart Rice

Malaria



courtesy of Isabel Mank

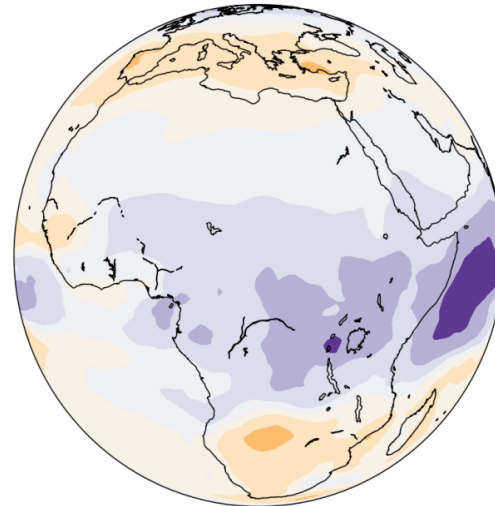
Undernutrition



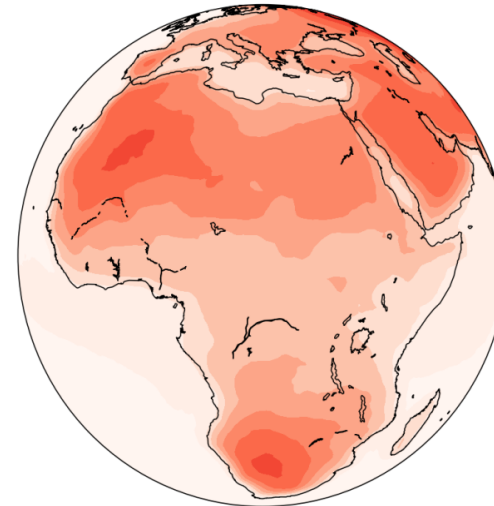
courtesy of Jes Aznar

Heat stress

Rainfall  
change



Temperature  
change



# Our research questions



## IMPACT

How much does climate change impact on diseases and for whom?



## ADAPTATION

How effective are local adaptation interventions to protect population health?



## PROJECTION

How will health impact projections unfold under different climate and adaption scenarios?



# Scientific output

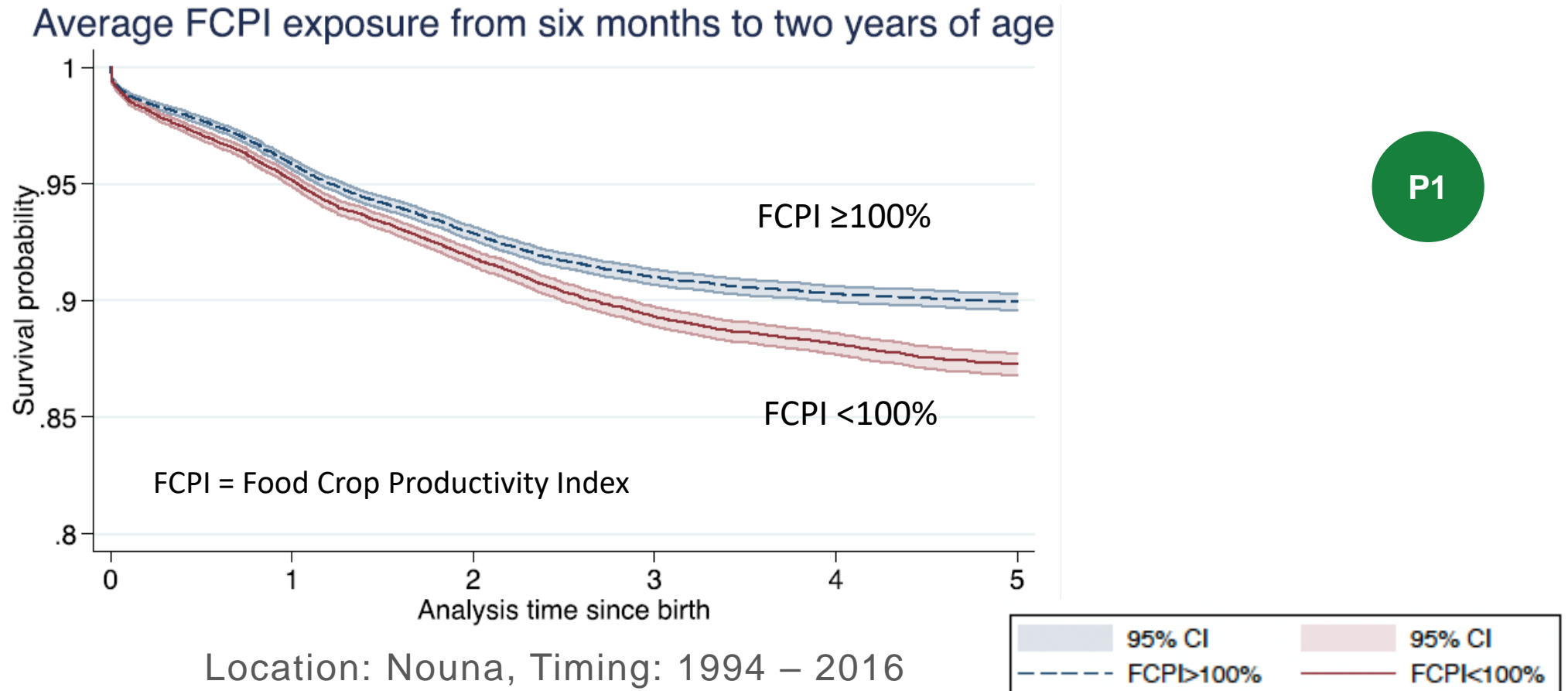
- 35 peer-reviewed scientific publications (01/2020 – 08/2022)
- Cumulative impact factor: 215
  - 22 papers with authors from sub-Saharan Africa
  - 12 publications with authors from  $\geq 2$  projects
- 3 book chapters
- >20 manuscripts submitted and >50 in preparation
- Jointly established research methods



COORDINATION

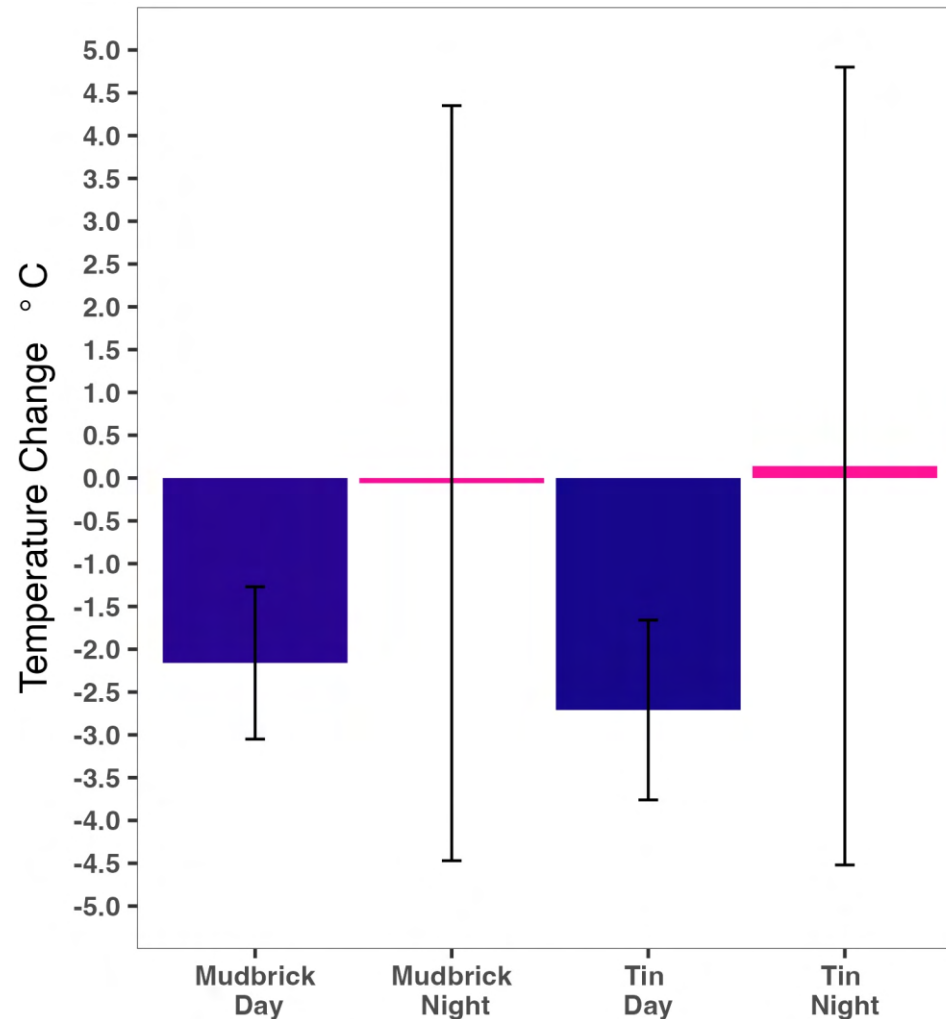
# Achievement example: Impact

*Altered rainfall variability at the age of 6-24 months increases the risk of chronic undernutrition.*



# Achievement example: Adaptation

*Cool roofs reduce indoor air temperature by 2.7°C.*



tin -2.7 °C (-3.8 to -1.7)  
 mudbrick - 2.2 °C (-3.1 to -1.3)

N= 92,160  
 observations

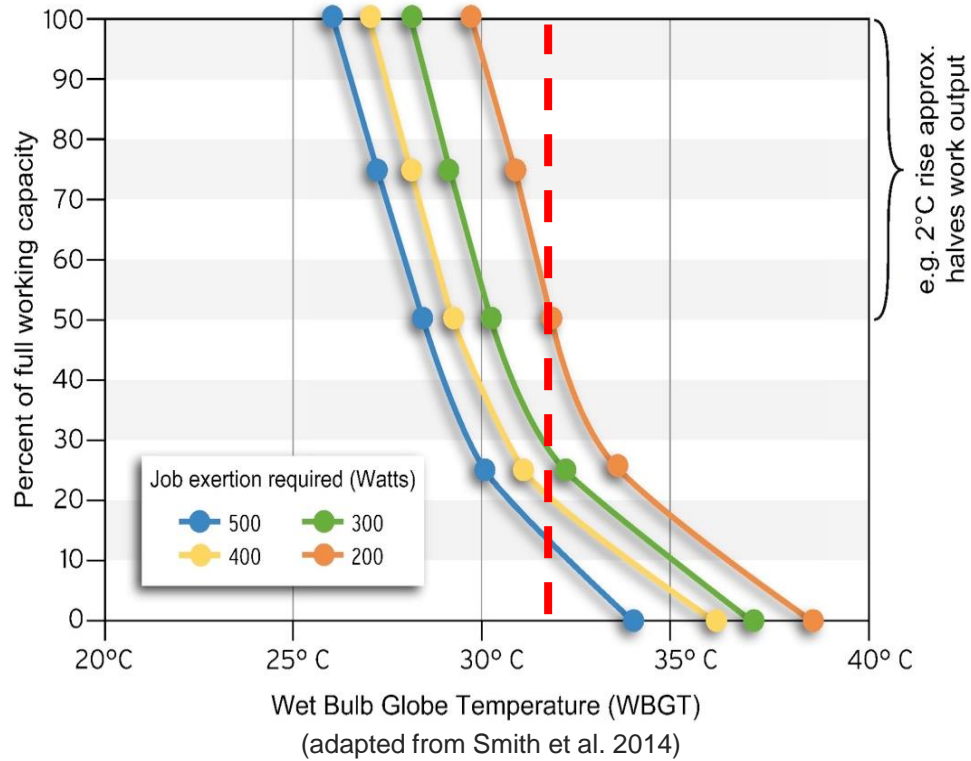
P5

Bunker et al.,  
 in preparation

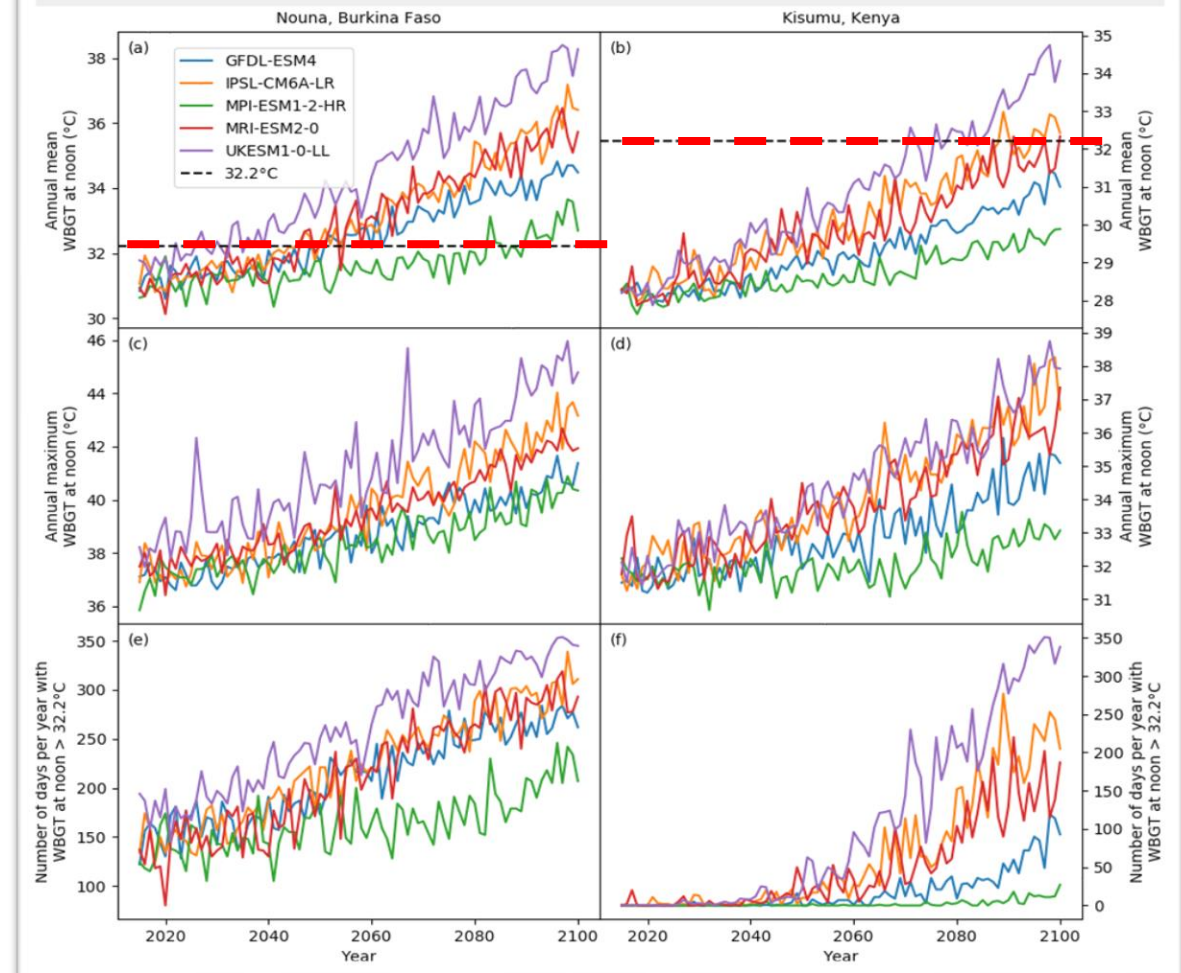
# Achievement example: Projection

*Wet-bulb globe temperature (WBGT) is modelled for future projections.*

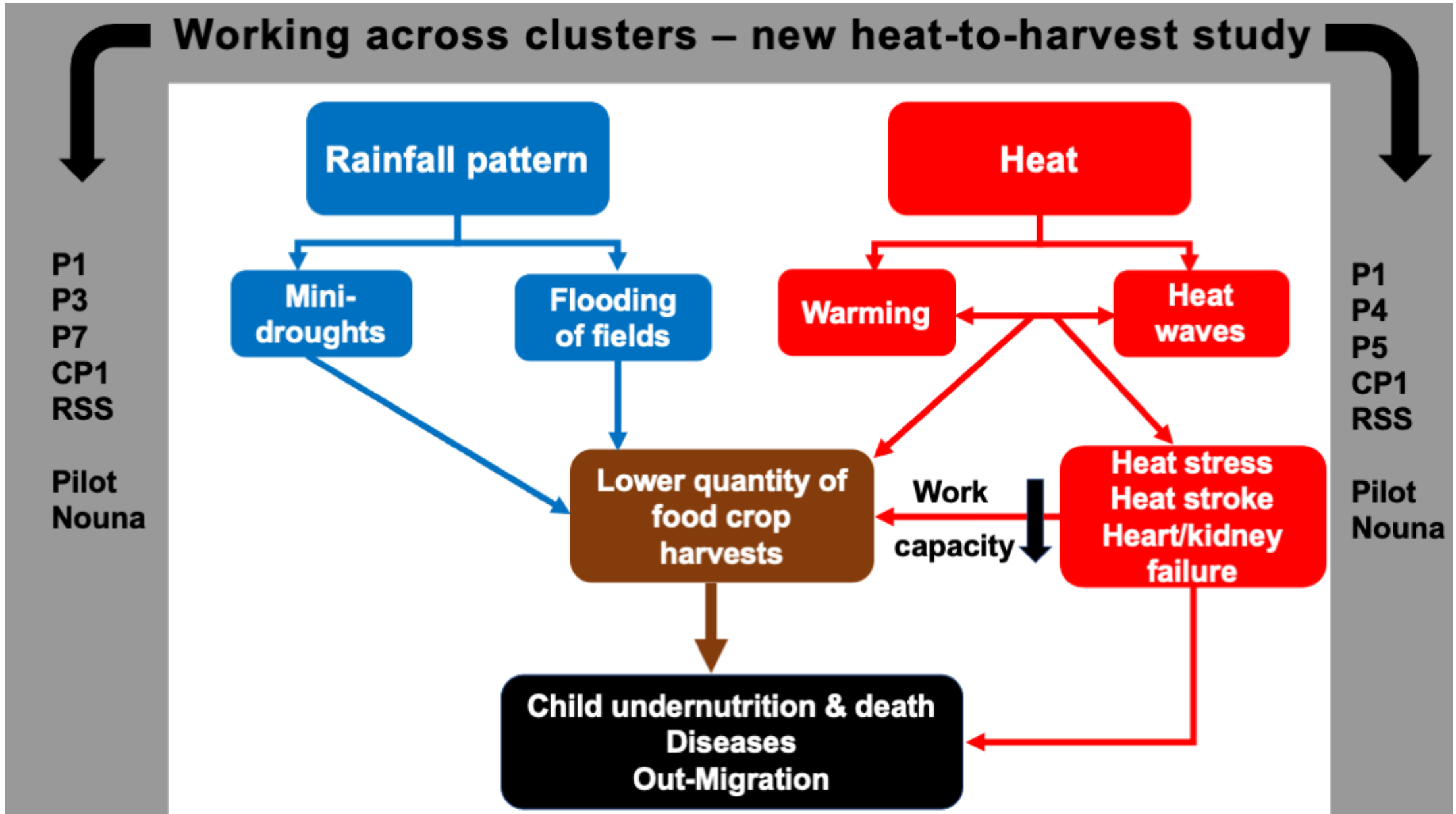
Percent of full working capacity with changing WBGT and different workloads



## Development of WBGT under climate change



# Inter-cluster achievement





# Achievements in career progression

## Early career stages

- Patricia Nayna Schwerdtle: DFG RU start-up grant
- Sammy Khagayi: Georg-Forster fellowship candidate
- Martina Maggioni and Sandra Barteit: Habilitation

## Advanced career stages

- Joacim Rocklöv: Humboldt Professor on Artificial Intelligence for Climate Change and Infectious Diseases
- Christoph Gornott: Professorship at University of Kassel
- Ina Danquah: Robert Bosch Junior Professor on Sustainable Nutrition in sub-Saharan Africa and RU spokesperson



# Achievements in education

Massive Open Online Course  
(MOOC) on research methods for  
studying climate change and health

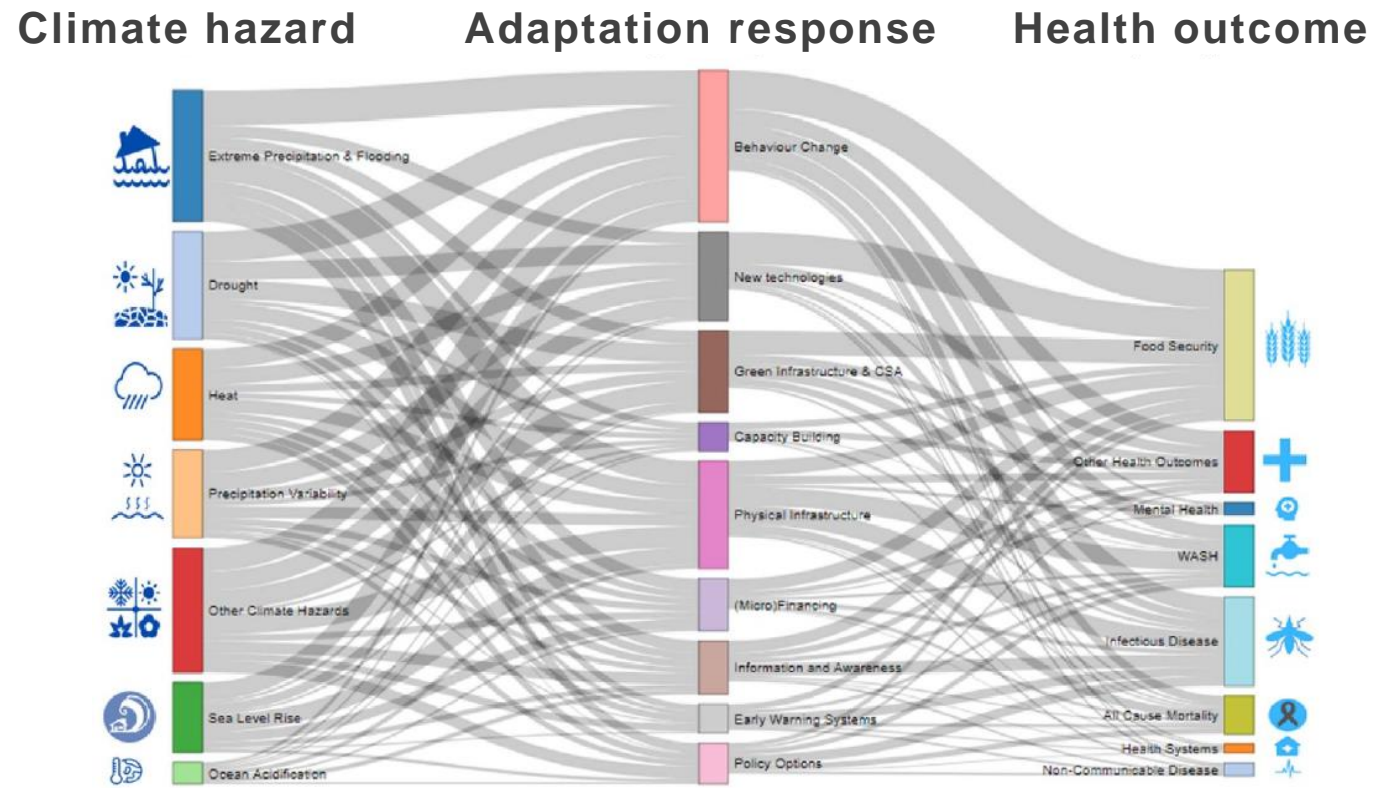


Workshop on the conduct and analysis of remote  
sensing techniques (Munich, 2022)

# What is new ? – Emphasis on adaptation

Evaluation of adaptation strategies in low- and middle-income countries, 2013-2020

- 99 studies from 66 LMICs
- Only 2 reported formal evaluations of climate change adaptation responses



# What is new? – Human mobility responses

... at the intersection of climate change and health

Nayna Schwerdtle et al. 2020

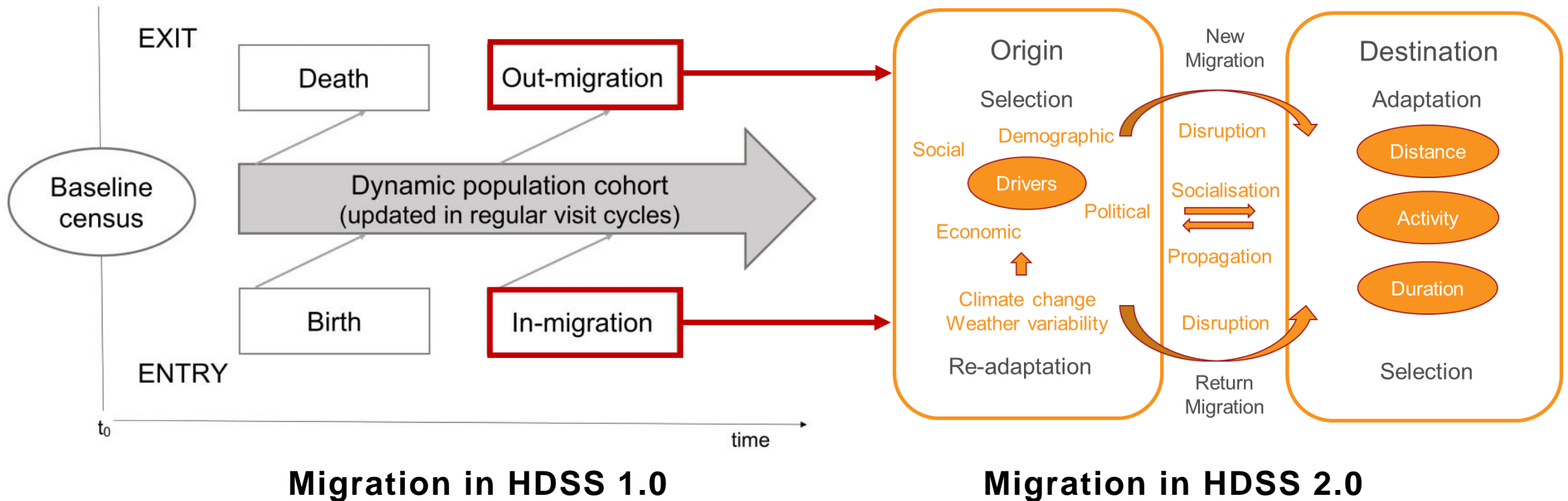
... as a risk exchange

Nayna Schwerdtle et al. 2021

... as an adaptation strategy

Vinke et al. 2022

COORDINATION



# Our research concept

