

The experience of heat stress among pregnant and postpartum women and their neonates in Burkina Faso and Kenya: a qualitative analysis

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University of the Witwatersrand

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CHAMNHA

CLIMATE, HEAT AND
MATERNAL AND NEONATAL
HEALTH IN AFRICA

**CLIMATE JUSTICE
AND HEALTH EQUITY**

**LA JUSTICE CLIMATIQUE ET
L'ÉQUITÉ EN SANTÉ**

International Conference on Climate Emergency and Health
Conférence Internationale sur l'Urgence Climatique et la Santé

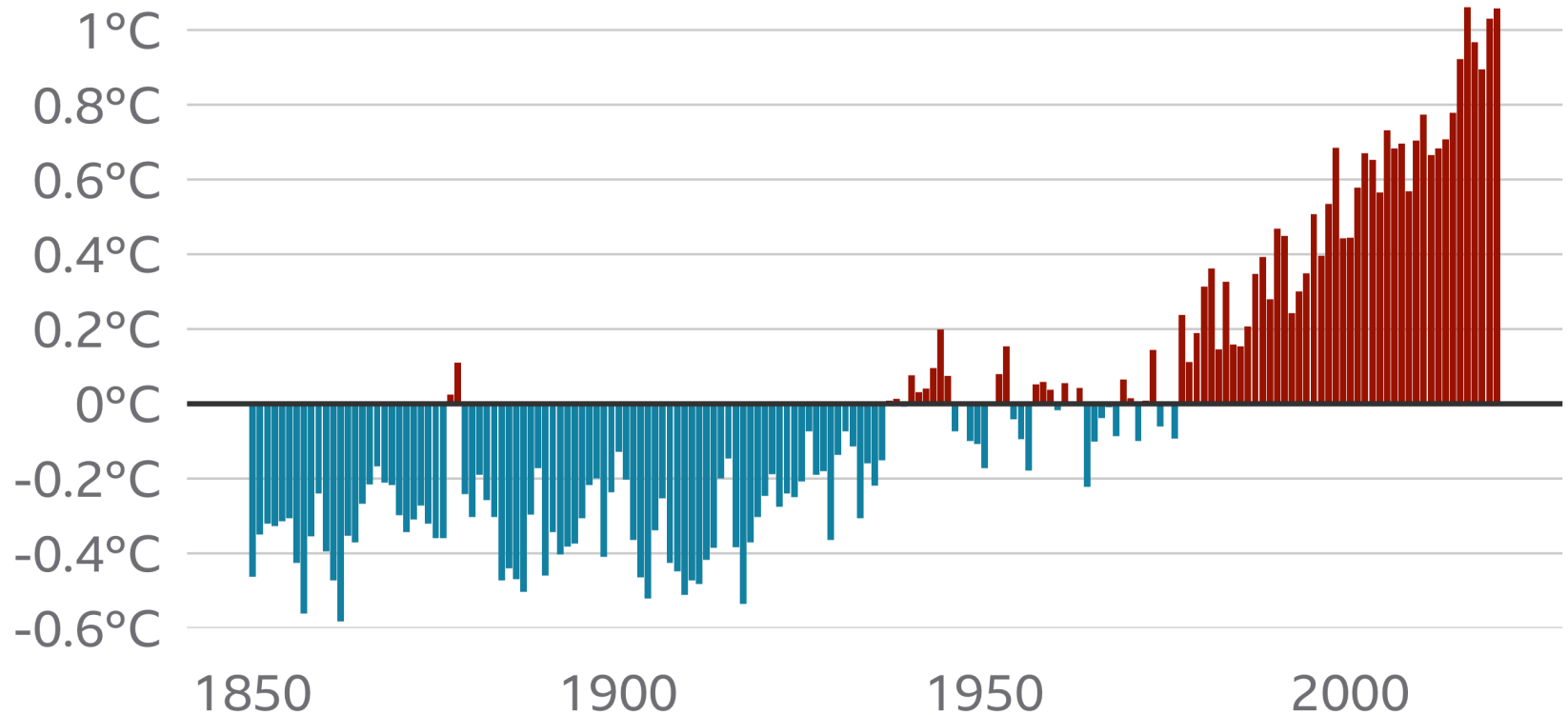
23 - 24/11/2021



**be cause
health**
Belgian Platform for
International Health

The world is getting warmer

Annual mean land and ocean temperature above or below average, 1850 to 2020

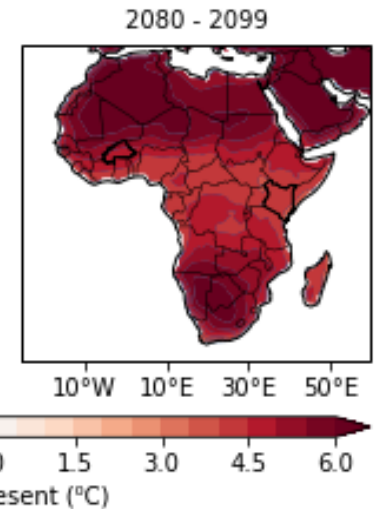
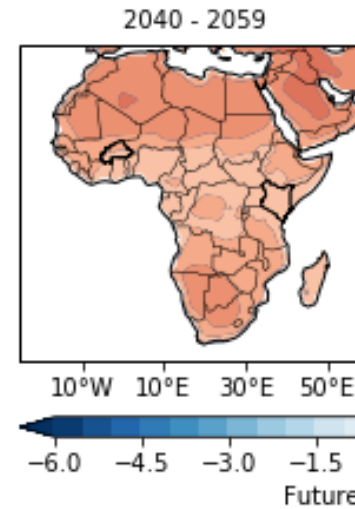
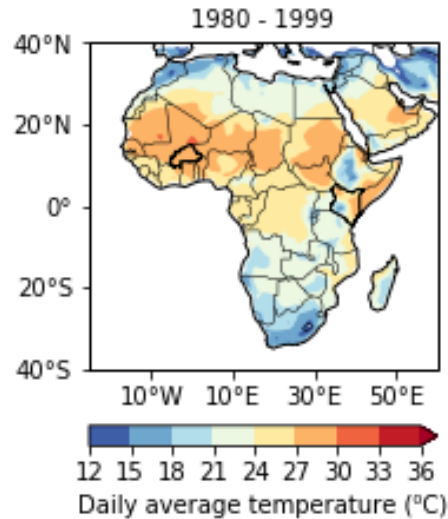


Note: Average calculated from 1951 to 1980 data

Source: University of California Berkeley

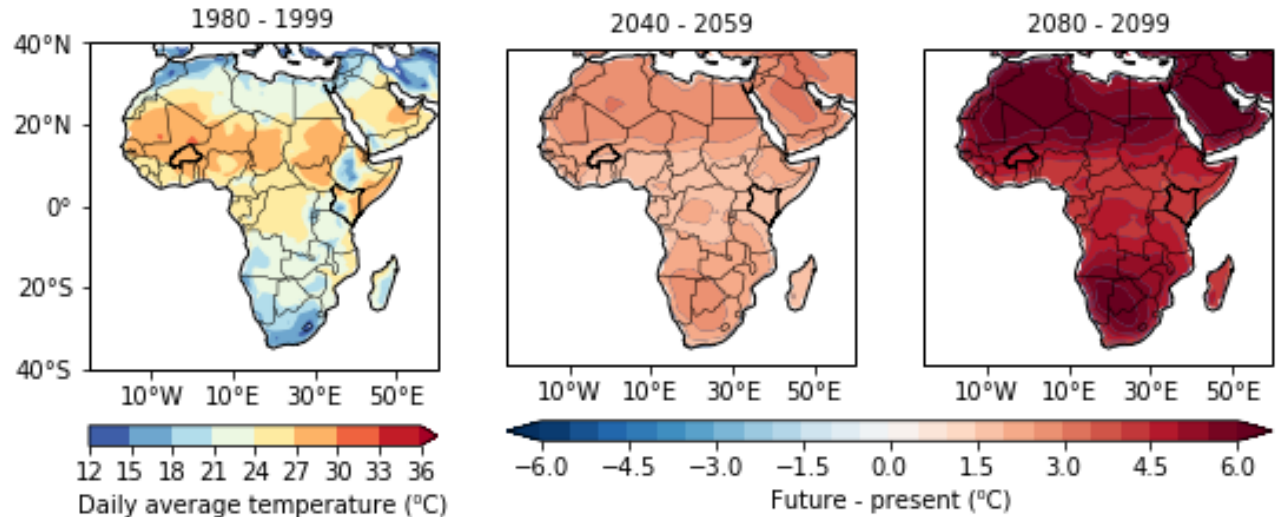
Climate change in Africa

- Extreme weather
- High temperatures, more frequent heatwaves
- Intense rainfall
- Disasters
- Changing seasonality



Climate change in Africa

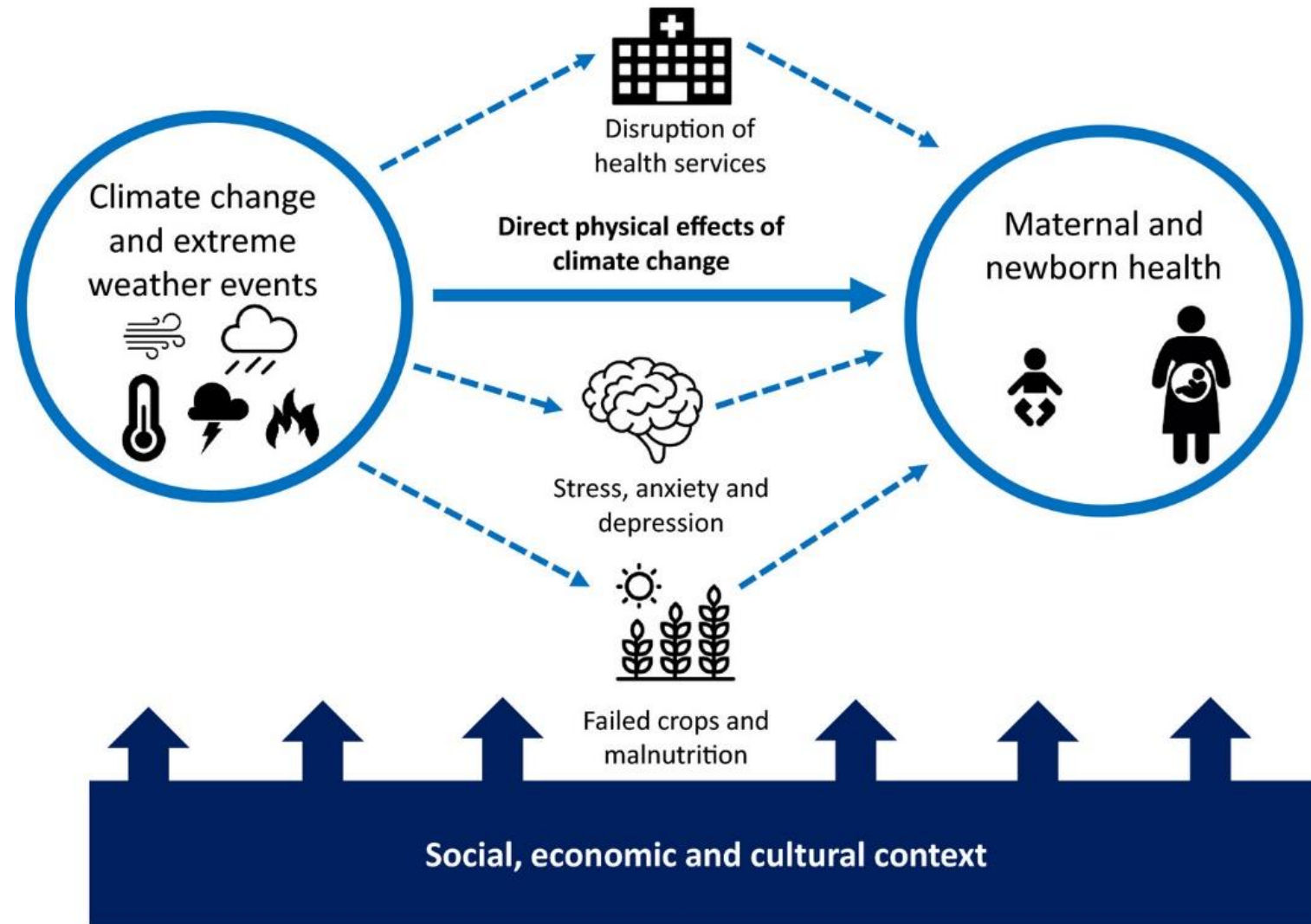
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Impact of heat on **maternal and neonatal health in Africa?** Limited evidence...



Direct and indirect effects of climate change on maternal and neonatal health



Heat and maternal and neonatal health

High temperatures increase risk of

- Pre-term birth
- Congenital abnormalities
- Malaria
- Bacterial infections (GBS, diarrhoeal disease)
- Hypertension/ pre-eclampsia

Occupational heat risks

- Pregnant women likely to be physically active even in high temperatures – dehydration?
- Health workers more irritable



Dispensary in Kilifi, Kenya



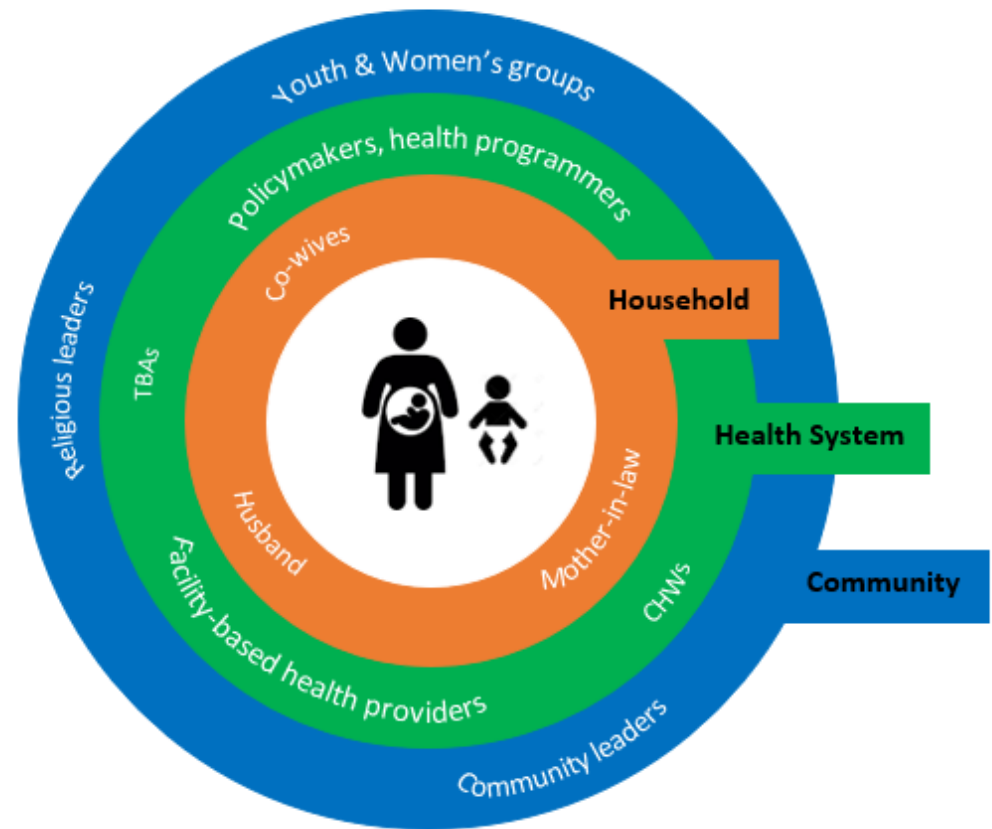
Source: ICRC

A photograph of two women sitting outdoors. The woman on the left is wearing a light-colored patterned headwrap and a matching dress, and is holding a clipboard. The woman on the right is wearing a white headwrap and a dark patterned dress. They are both looking towards the left. The background shows a dirt path and some greenery.

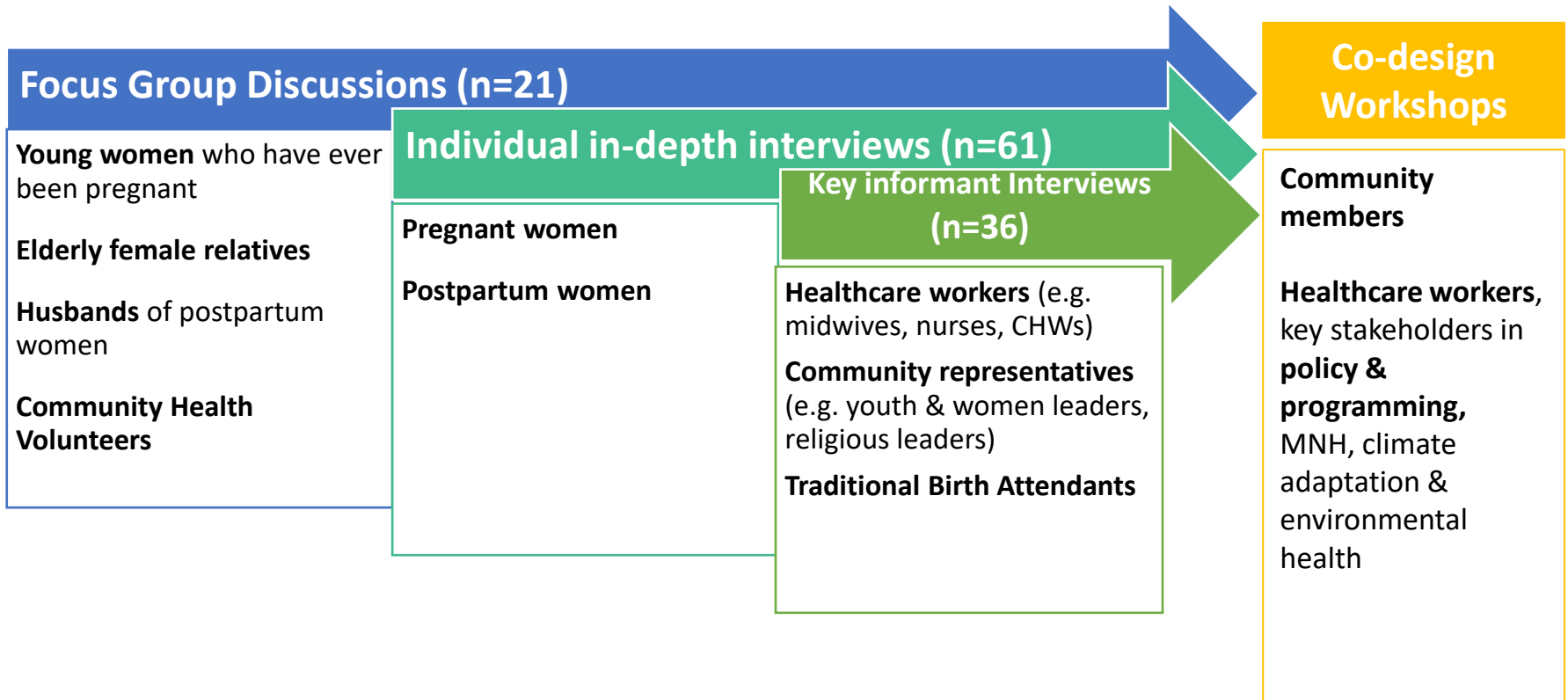
Qualitative research in Kenya and Burkina Faso

Study Aim

To understand how heat stress in pregnancy, postpartum and neonatal periods is **experienced** and **perceived** in Burkina Faso and Kenya

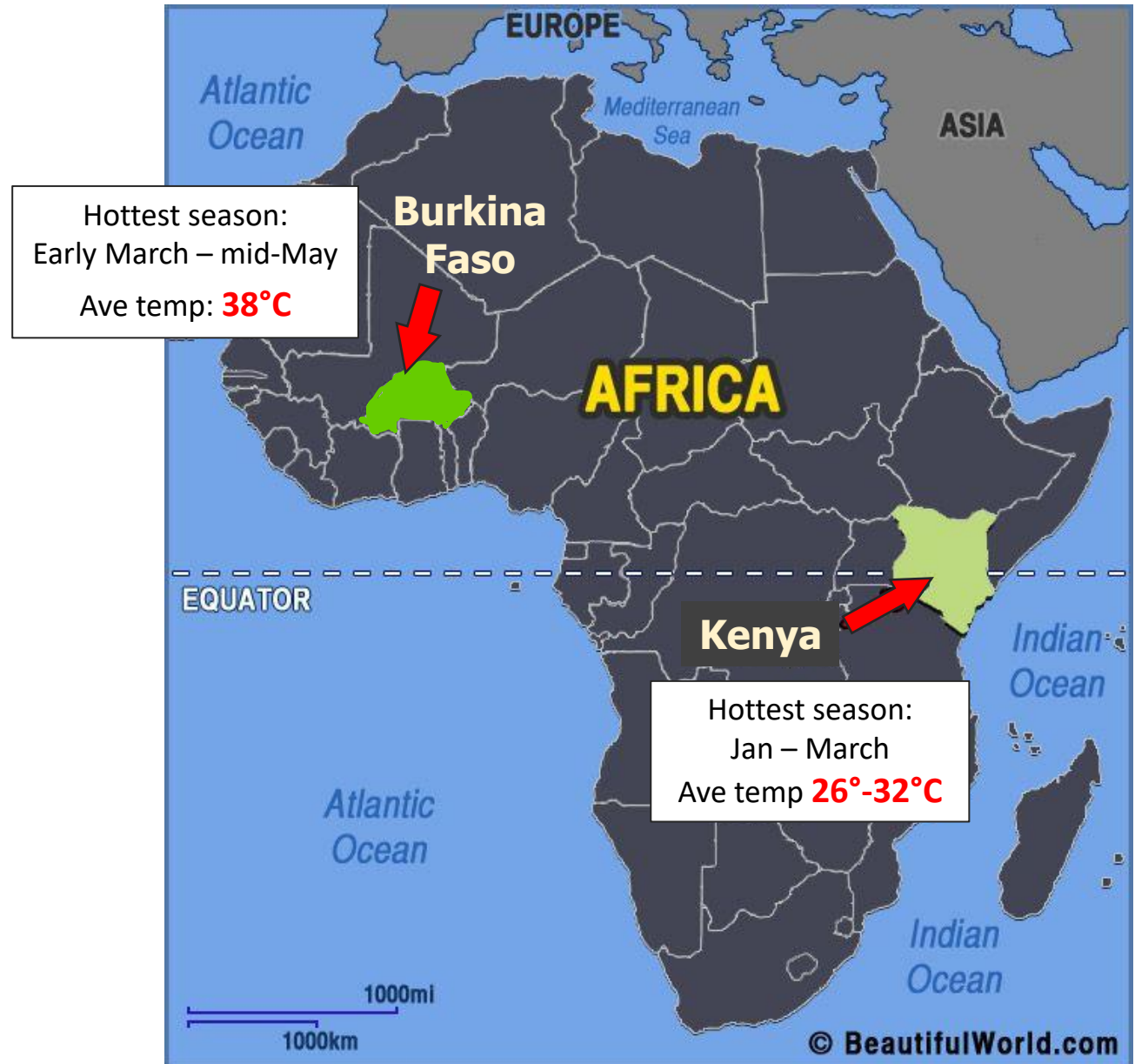


Qualitative Methods



- Coding and data organisation using Nvivo 12 analysis software
- **Thematic analysis** to identify key themes

Study sites



Burkina Faso: Some villages were inaccessible during the rainy season



Kenya: Some FGDs were conducted under a tree in extremely hot weather (37°C)

Findings

Experiences of extreme heat during PREGNANCY

- Exhaustion and interrupted sleep
- Dehydration owing to increased perspiration
- Everyday tasks become difficult to perform in the heat – impacting on productivity and earnings
- Mental health consequences: anxiety, restlessness, social isolation
- In Burkina Faso, pregnant women are discouraged from certain behaviours that would reduce the effect of the heat:
 - Sleeping outside at late hours
 - Staying unclothed
 - Taking a bath late at night



*“In the hot period when the woman is pregnant, **she feels uncomfortable at all times**. She has bourbouilles [rash] on her body, she has insomnia, she feels strange movements of the foetus, she has immense heat on her”*

(Postpartum woman, Ouagadougou, BURKINA FASO)

*“Because of hot temperatures and overworking, she is dehydrated and at night she may be throwing her hands up as if she is dying... Mothers get **really exhausted**”*

(FGD Male partners, Rabai, KENYA)



How heat is considered to harm the foetus and newborn

- A newborn baby in very hot weather:
 - Cries a lot
 - Does not want to suckle
 - Is dehydrated
 - Has breathing problems
- Burkina Faso:
 - The baby in the womb heats up and may be born prematurely
 - A baby born in the heat will grow more slowly than a baby born in the cold. It cannot develop properly, becomes misshapen and is “like a sick person”.
- Kenya:
 - Babies born in the heat are observed to be underweight, and have blisters in the mouth, which interfere with sleeping and breastfeeding
 - Beliefs around the need to limit water intake during pregnancy lest the foetus be harmed

Experiences of DELIVERY and POSTPARTUM



- During childbirth, women experience a “double pain”: the pain of childbirth and the unbearable discomfort of the heat (Burkina Faso)
- Kangaroo care is a challenge because of increased perspiration and discomfort



- Postpartum cultural practices:

In Burkina Faso, mothers and their newborns must remain inside their homes for at least 7 days in the stifling heat



Resilience of health sector to heat?

- Health facilities are inadequately prepared for heat extremes:
 - Poor ventilation and no water, cooling rooms, or outdoor shading
 - Overcrowding of facilities
- Heat prevents women from keeping antenatal and postnatal appointments
- The health centres are less frequented at the hottest times of the day

*“Most women end up delivering at home because the hospitals are far and some women prefer not to walk in the heat”
(FGD, Male partners, Kamkomani-Rabai, Kenya)*

*“During hot periods, they fold up their mosquito nets and put them on the line because they say that sleeping under the nets increases the already high temperatures. So, sleeping is like that ... it affects the women and even the newborns”
(FGD, Male CHWs, Kaloleni, KENYA)*



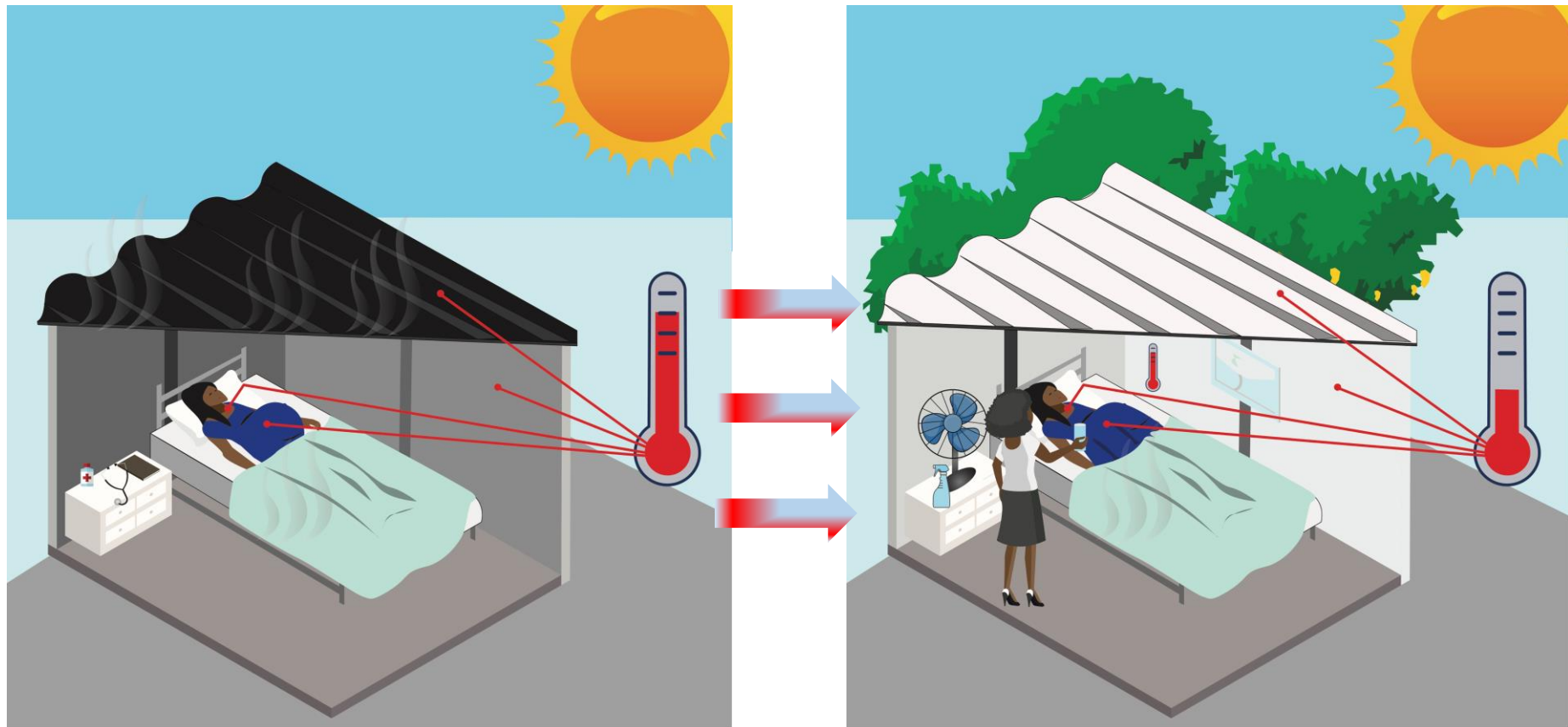
Where do we go from here?



Framework for heat adaptation interventions in pregnant women and newborns

Domain	Examples of potential interventions			
1. Behaviours and health promotion	Communication around heat-health risks and behaviours	Promote hydration and water supplementation during labour	Cooling with water sprays and fans	Birth and complication preparedness, transport planning
2. Health systems	Early Warning Systems for pregnant women during heatwaves	Community health worker or midwife interventions during heatwaves	Health information systems (heat-health surveillance).	Temperature monitoring of drug storage (commodities)
3. Built and natural environment	Building modifications, e.g. thermal, protective white paint	‘Cooling centres’ for pregnant women in the community	Passive cooling of maternity facilities (‘heat proofing’, e.g., shading overhangs)	Trees and other greening solutions

Simple, low-cost, personal cooling interventions and building modifications



Conclusions

- Compelling **epidemiological** evidence that action is required (preterm birth, congenital abnormalities, eclampsia)
- **Anthropological** data shows how extreme heat compromises the **health, wellbeing, and quality of life** of pregnant and postpartum women and neonates in these settings
- Some evidence that heat impacts on delivery of **health services**
- **How to act is complicated:**
 - Low awareness
 - Unclear interventions specific to the needs of pregnant women and newborns
 - Maternal and neonatal health not included in national adaptation plans for climate change





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