

Climate change, food (in)security and community-led change



Florah M, 86
Hleketani Community
Garden

Territorial acknowledgement

We recognize with respect the WSÁNEĆ (Saanich), Wyomilth (Esquimalt), and Lkwungen (Songhees) peoples – on whose territories we are guests – and whose relationships with these lands and waters remain profound today.

www.fourstoriesaboutfood.org



T'Sou-ke Chief Gordon Planes (centre) with research partners from Colombia, South Africa, Jordan (2019)

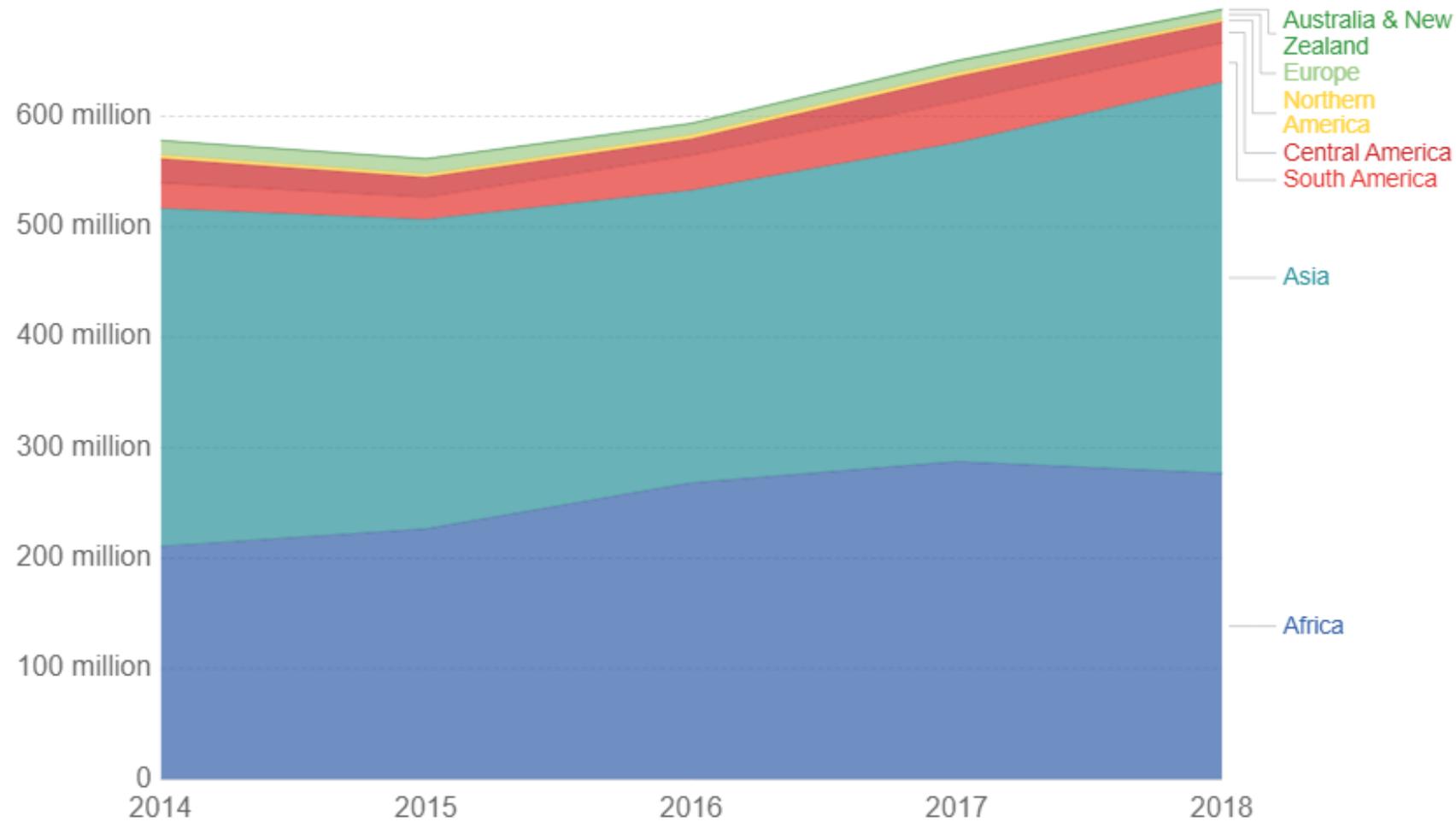
Research collaborator
Basani Ngobeni
with filmmaker
Christine Welsh



Rising rates of extreme poverty, malnutrition since 2015



Number of severely food-insecure people by region



Source: UN Food and Agriculture Organization (FAO)

OurWorldInData.org/hunger-and-undernourishment • CC BY

Since 2015,
“Exposure to more complex, frequent and intense climate extremes ... erodes and even reverses the gains made in ending hunger and malnutrition.”

2018 UN
Global Nutrition
Report

Food insecurity by the numbers

690 Million



Chronic undernourishment/ severe food insecurity only

This is a long-term inability to meet food requirements. It is assessed through PoU, which is SDG indicator 2.1.1, and is comparable to the prevalence of severe food insecurity using the FIES.

2 Billion



Moderate or severe food insecurity combined

This is when people face uncertainties about their ability to obtain food and have been forced to compromise on the nutritional quality and/or quantity of the food they consume. This is assessed using the FIES and is SDG indicator 2.1.2.

135 Million



Crisis-level, acute food insecurity

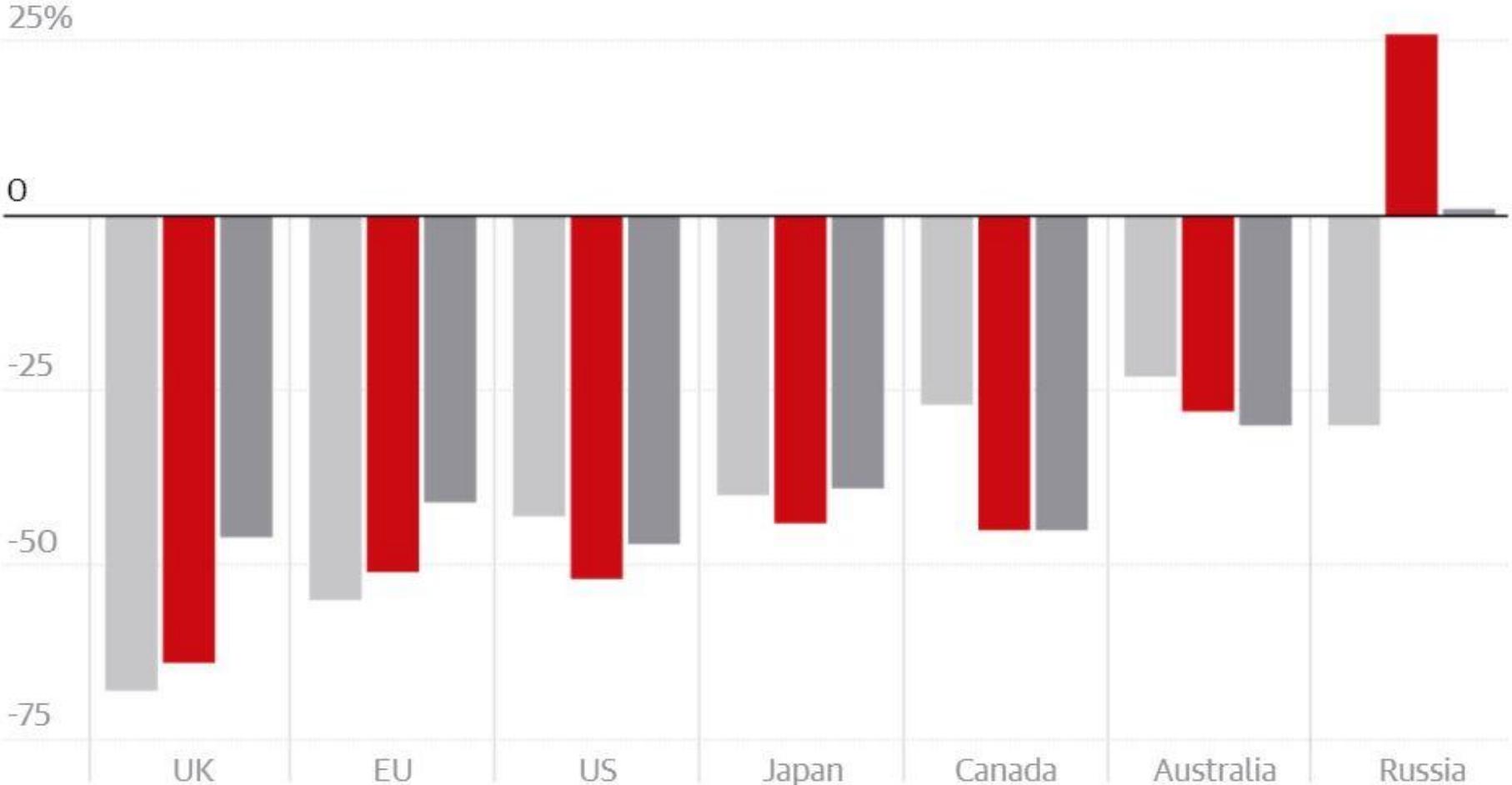
Sporadic, sudden crises can limit people's access to food in the short term to the point that their lives and livelihoods are at risk.

240 M undernourished in Africa (18-20+% of population)

Pledges to cut carbon emissions by 2030 – White House climate summit 2021

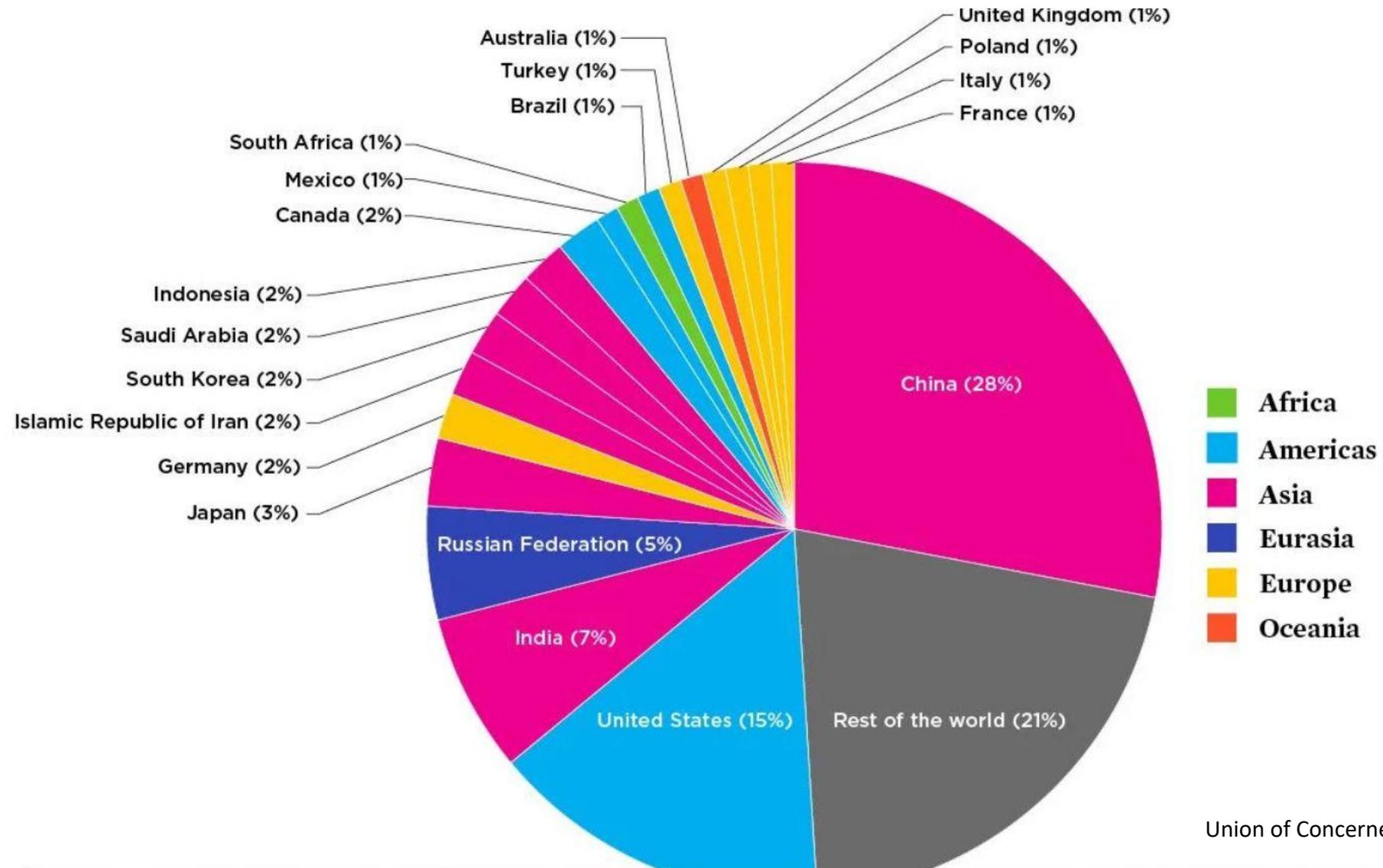
% cuts compared to year

■ 1990 ■ 2005 ■ 2018



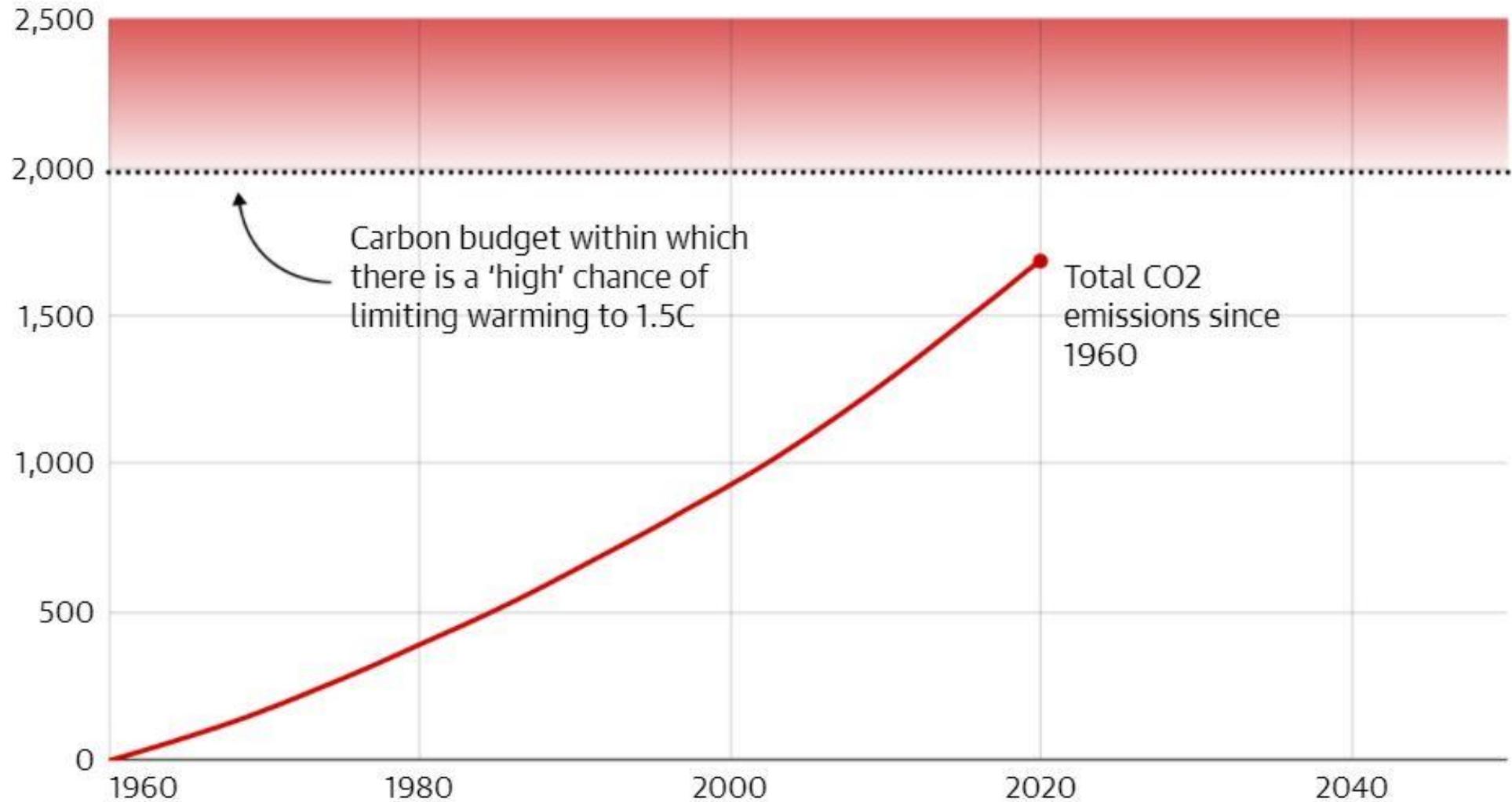
Guardian graphic. Source: Carbon Brief. Note: Russia and Australia have not updated their targets

Country shares of CO₂ emissions, 2020



Can we “flatten the curve” (now) to limit warming to 1.5-2C ?

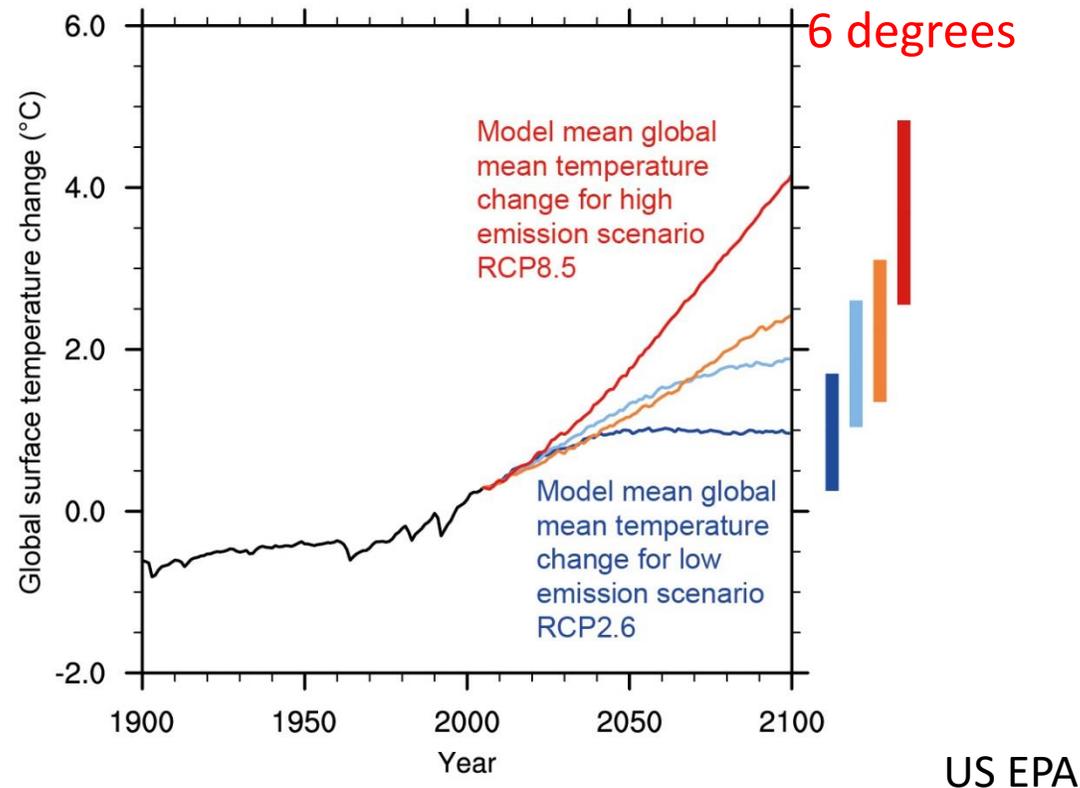
cumulative emissions since 1960, gigatonnes of CO₂



Sources: IPCC, Global Carbon Project.

Southern Africa – above “average” impacts of climate change

- “Average maximum temperatures may rise by up to **6°C** across much of the interior of South Africa by 2070.” (Mbokodo et al 2020)



“We are witnessing **millions of already poor people** facing **extreme food insecurity** and exhausting their reserves because of **compounding climate shocks** that hit already vulnerable communities hardest. They need help urgently. The scale of the drought devastation across Southern Africa is staggering.”

Oxfam Southern Africa Regional Director Nellie Nyang'wa
2019

Drought impacts include:
Dying livestock
Skyrocketing prices for staple foods
Malnutrition, often severe



“We’re in a vicious cycle where poor and marginalized communities, **mostly women and girls**, are more exposed to the climate crisis -- and least able to cope and recover from its harm.”

Oxfam Horn, East and Central Africa regional director Lydia Zigomo



Evelyn,
Alice and
granddaughter

Hleketani
Garden 2015



Women taking charge – Hleketani Community Garden, founded 1992

Mthavini B and Josephine M



Food sovereignty

“The right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.”

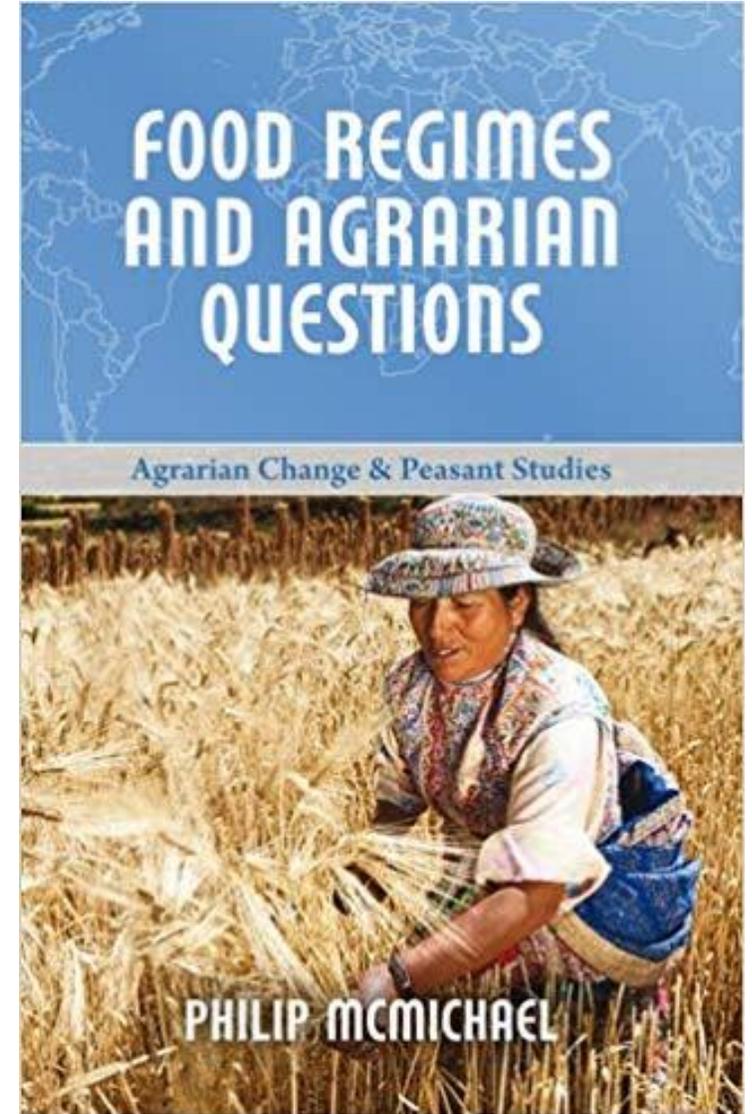
Language of the Nyéléni Declaration 2007

“The idea that developing countries should feed themselves is an anachronism from a bygone era. They could better ensure their food security by relying on US agricultural products, which are available more **cheaply and efficiently.**”

US Secretary of Agriculture John Block, 1986

Global food regimes

1. Colonial food regime
2. Post-war food regime, 1950s-70s
3. **Corporate food regime, 1980s-present**





Global peasant/ small-scale food producer movement
Founded 1993

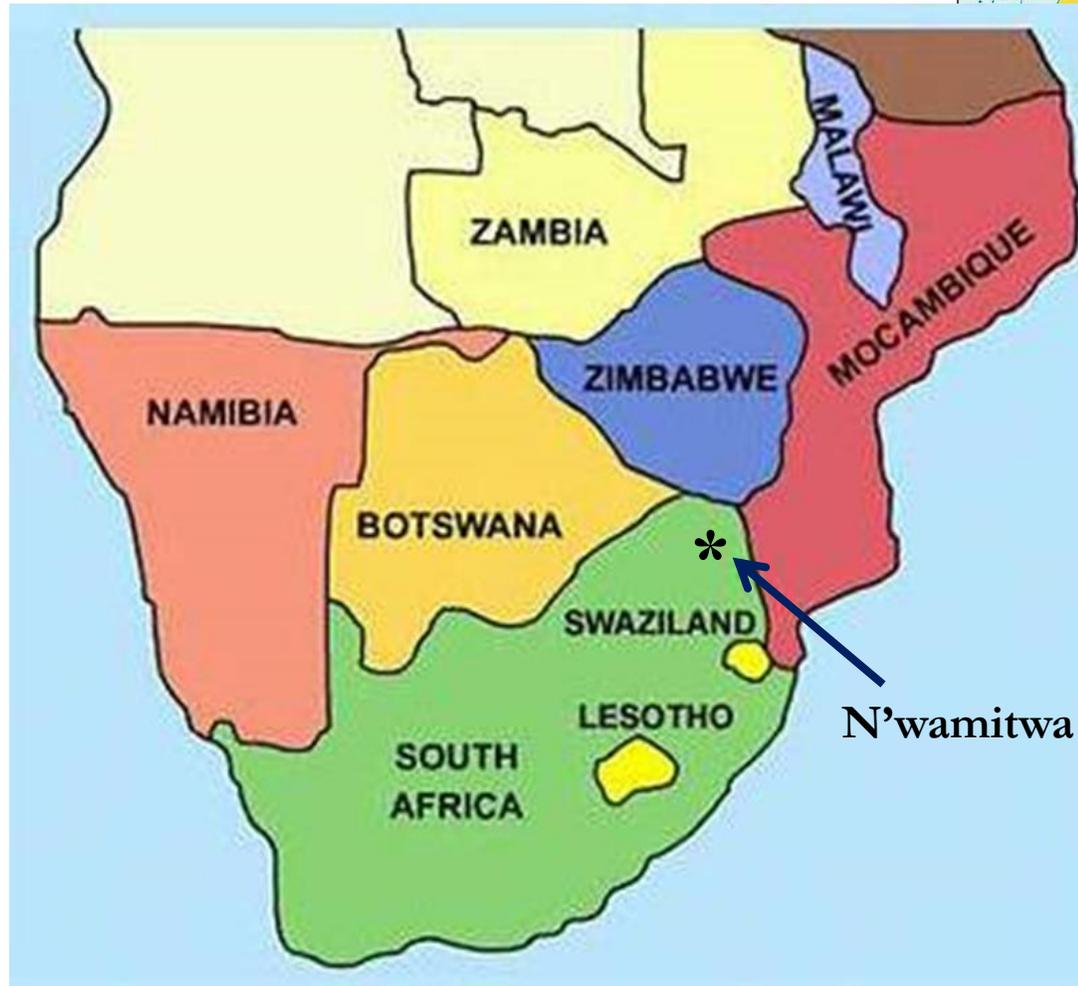
Food sovereignty – more powerful concept than food security

- foregrounds the aspirations and needs of those who **produce**, distribute, and consume food
- empowers **peasant and family farmer agriculture**, artisanal fishing and gathering, pastoralist-led grazing
- defends the interests, inclusion of the **next generation**
- prioritizes **local**, regional, national markets
- prioritizes ecological, social, economic sustainability
- promotes transparent trade with just incomes
- ensures **rights to use & manage lands**, waters, seeds, livestock, biodiversity are in the hands of producers
- implies social relations free of oppression and inequality



Mthavini B, Rose N
and grandson
harvest greens

Southern Africa





Daina M at Hleketani Community Garden

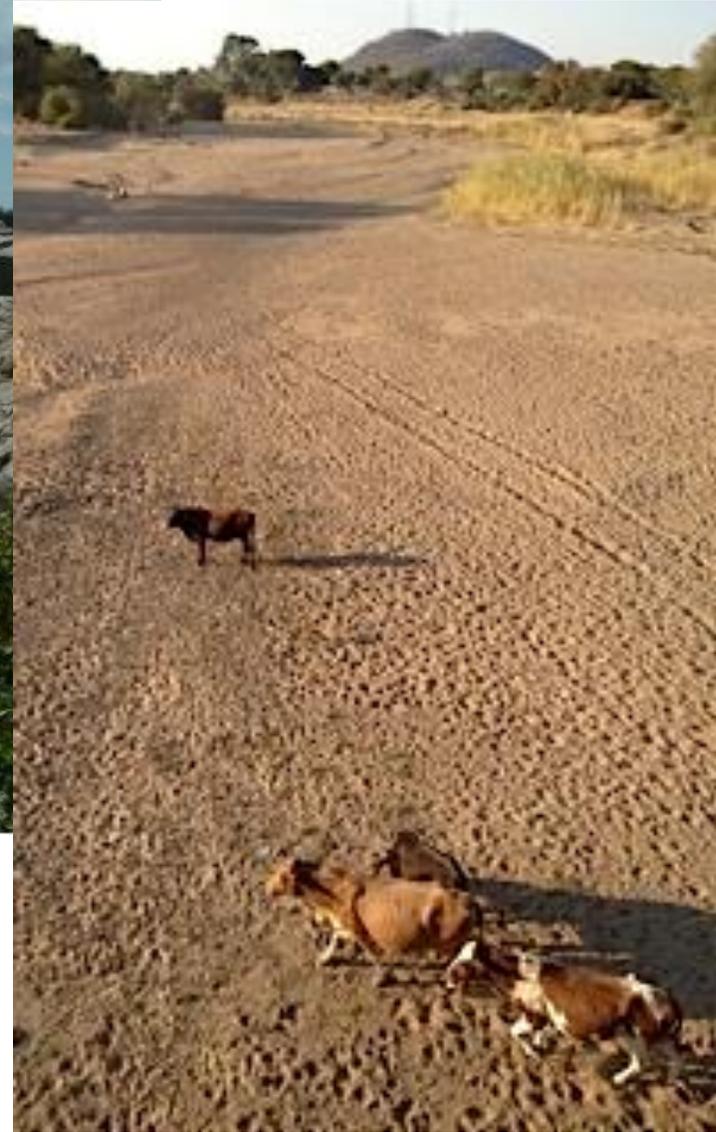
South Africa: “epic” drought 2015-19



Abandoned crop on commercial maize farm

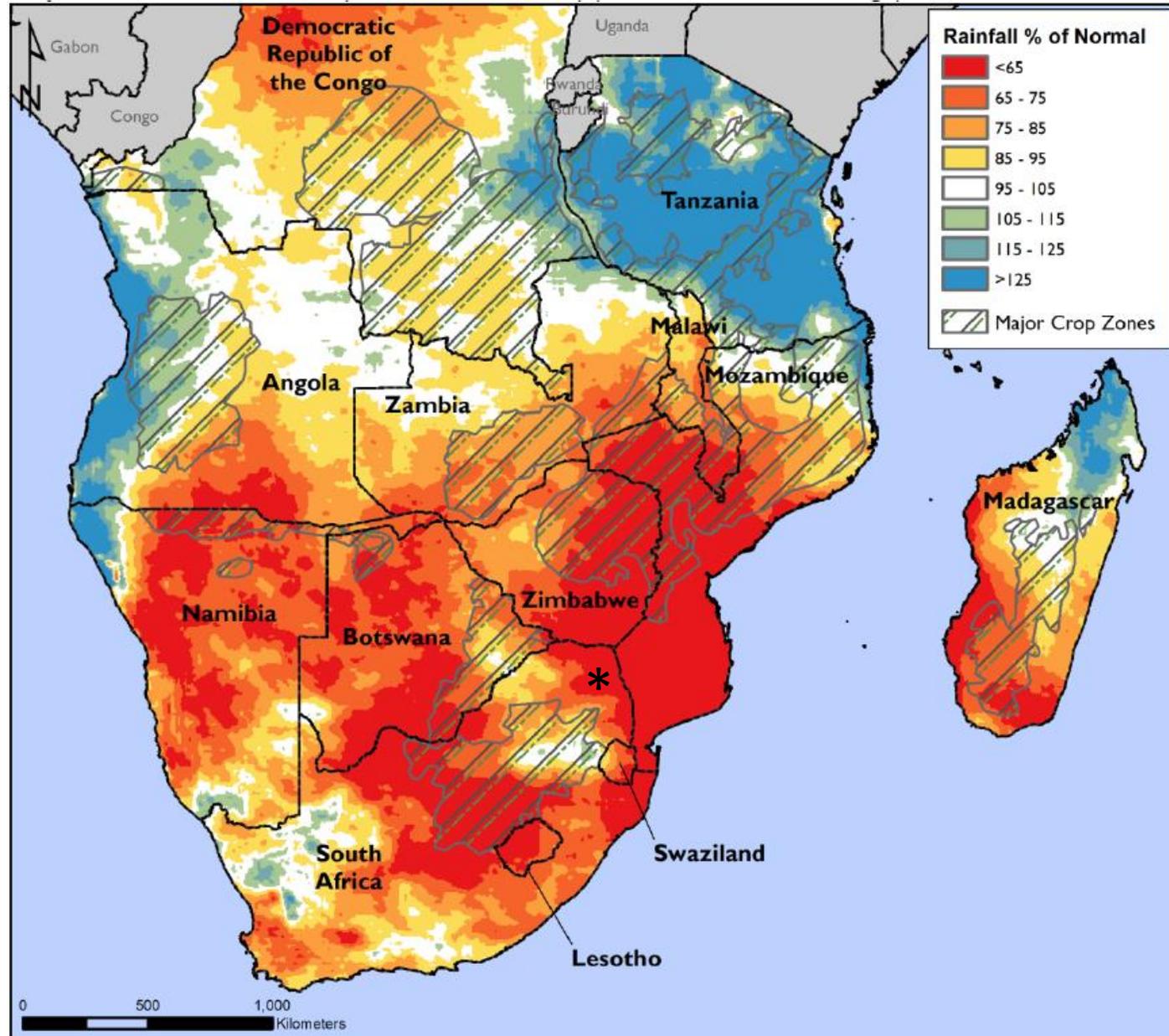


N'wanedzi River 2012



2015

Rainfall anomalies – 2015-16



Selling maize around the countryside: soaring prices, short supply



Drought broadly affects:

- crop and livestock production
- soil health
- human health
- staple food prices (e.g., maize)
- water availability (from rivers, reservoirs, groundwater)
- livelihoods across Southern Africa





Morning water collection, Jopi village



Rosina M in field of groundnuts, maize, and squash:
'We had to start again. We started again.'



Re-installing drip irrigation 2015-16

Community farm's contributions:

- Community
- Poverty reduction and health
- Women's autonomy

Here – the farm's contributions in era of climate change



Buyers from town with farmers Violet M and Sophy B

Health

Mijaji N: 'Before the farm
... each and every
one was the victim of *kwashi*.'

Alice K: 'With the vegetables
the children are fresh.'



Josephine B prepares *vuswa*
(maize porridge)



Women prepare vegetables to take home

Adapting to climate change at ground level



Water-conserving drip irrigation; hand irrigating nursery plants

Adapting to climate change at ground level



Water storage

Adapting to climate change at ground level



Mulch for soil regeneration, heat control

Adapting to climate change at ground level



Composting garden waste

Adapting to climate change at ground level



Crop choice: 'spinach' rather than cabbage

Adapting to climate change at ground level



Drying maize for seed saving and staple food

Adapting to climate change at ground level

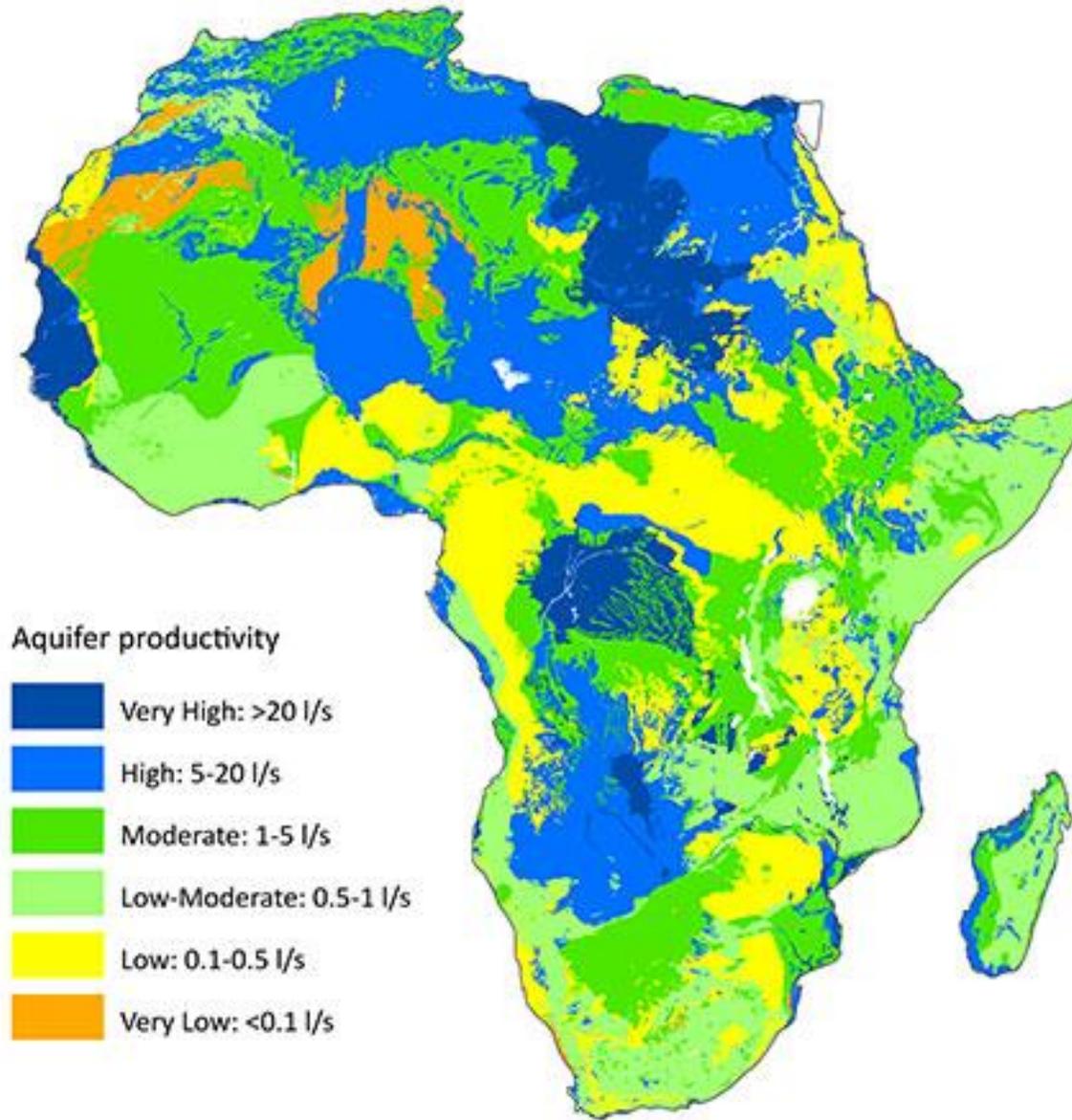


Tomatoes under cloth: mitigating extreme heat

Adapting to climate change at ground level



Drought-stricken maize;
indigenous plants weather the storm



For many regions of Africa, groundwater aquifers are the future of small-scale agriculture



Back in business: tomatoes 2016



Tomatoes for local distributor

Josephine M and Mphephu M



Violet M -- drip irrigation

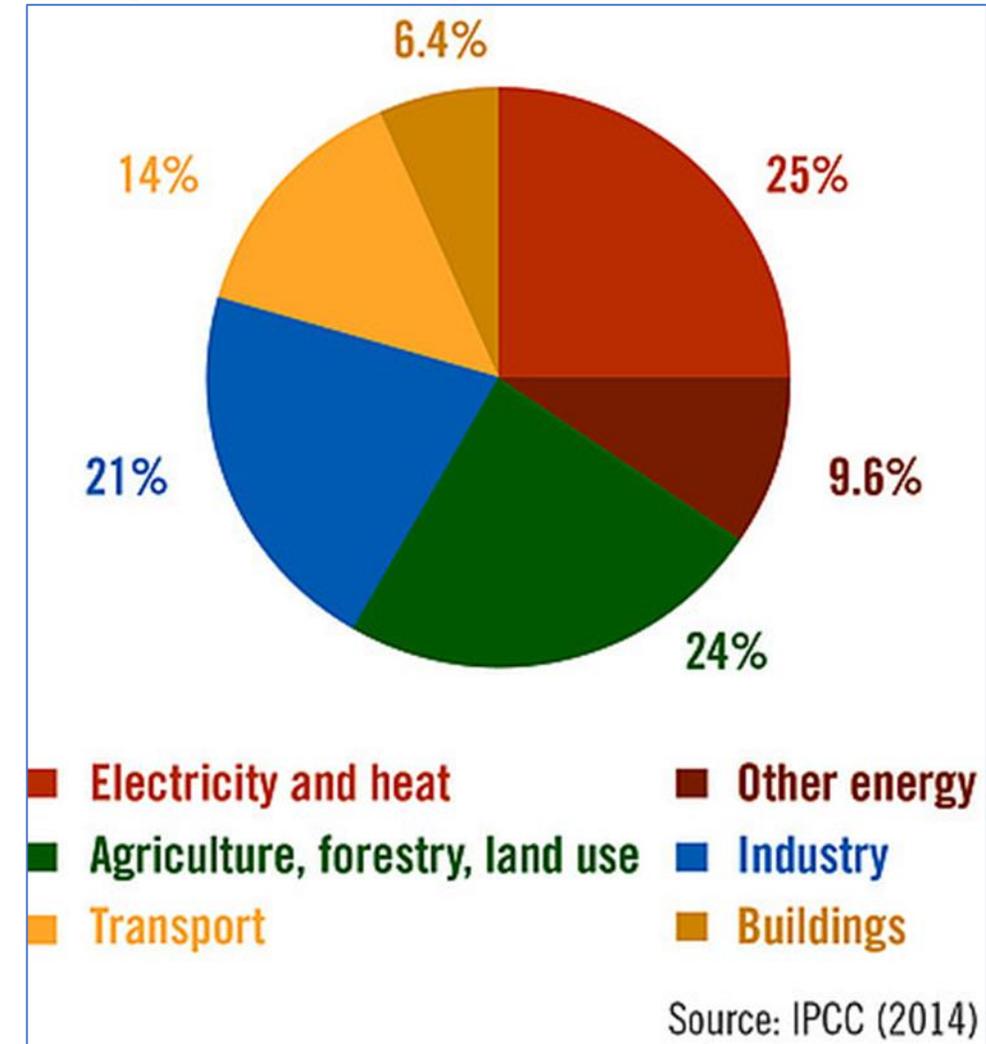


Household garden -
rain-fed cultivation

Ambitious climate action needed across key economic systems

- Phase-out of coal, rapid scale-up of renewables in the energy sector
- Invest in public, electric, and low-carbon transport in cities
- **Scale up sustainable and regenerative food and land-use systems**
- **Support women in these systems**
- **Forest, wetland, peatland regeneration**
- **Reduce land used for animals, feed**
- **Invest in resilient water infrastructure**

Agriculture produces 25-30% of greenhouse gas emissions



“Today’s scientific evidence demonstrates that agroecological methods may outperform the use of chemical fertilizers in boosting food production *where the hungry live* -- in unfavorable environments.”



Olivier De Schutter,
UN Special Rapporteur on the Right to Food

Small-scale farmers of the Global South make up the largest proportion of the world's malnourished

- would benefit from yield improvements
- but not improvements based on expensive, destructive external inputs (chemical fertilizers and pesticides, hybrid seed)
- need support to experiment with locally-adapted agroecological, regenerative methods:



“We need the ways of our mothers and grandmothers.”

Mphephu M with husband Daniel

Responding to crises is necessary to **save** lives

Building resilience in the face of increasingly frequent climate-related crises is essential to **strengthen** lives into the future



Josephine M and
grandson

Canada's Budget 2021:

- \$200 million in new funding over two years to support farmers to reduce emissions (cover cropping, soil regeneration ...)
- \$60 million to protect existing trees and wetlands on farms
- \$10 million to power farms with clean energy

Canada's feminist international policy needs similar farmer / community / sustainable focus



Reducing emissions, building climate resilience:
“Farmers can’t do this alone. We can do it with this support.”

Comox Valley farmer Arzeena Hamir
Farmers for Climate Solutions

Support the women?
www.womensfarm.org



A film about South African women sowing the seeds of change

The Thinking Garden: Film launched 2017
**Screened at festivals in Paris, Johannesburg, Berlin,
Amman, Kuala Lumpur, Toronto ...**

A food system relying on practices that systematically undermine its essential components – soil, water, and air – is a food system in existential crisis.

“Appropriate investment in agroecological **research** to improve organic management systems could greatly reduce or eliminate the yield gap” for many crops and regions

Ponisio et al, *Proc. R. Soc.* 2015

A few comparisons

Conventional agriculture has higher environmental costs – and:

May be better for cereals?

May be more efficient where reliable irrigation is available

May be more efficient at pest management

Agroecological agriculture is lighter on the earth – and:

May be better for legumes, perennials

Is more efficient in water-variable and drought-prone settings

Means more labour-intensive pest management – but affordable, well adapted to many crops, not toxic to environment

Recent meta-studies show 80% increase in crop yields
across 57 countries in projects using
agroecological practices
(average increase of 116% in Africa)

Malawi example: doubling and tripling of maize output in many regions

Seufert, Ramankutty, Foley in *Nature* 485 (2012)

COVID pathways South Africa 2020-21

COVID → national lockdown → disrupt education → no access to National School Feeding Programme (9M) → hunger → malnutrition

COVID → national lockdown → economic slowdown → unemployment → no income → hunger → malnutrition

Food costs rising (14.4%) → food unaffordability → hunger → malnutrition

Malnutrition intergenerational: children disenfranchised before birth by dietary inadequacies – “slow violence” of malnutrition