

Increasing food and nutrition security resilience in response to climate change in East Africa: Findings from a multisectoral symposium

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Background

- “Kuwa Tayari” (Swahili for ‘be prepared’) symposium held in Eldoret, Kenya, May 2016
 - Moi University, College of Health Sciences, School of Public Health (Eldoret, Kenya), and University of Toronto, Dalla Lana School of Public Health
- Goals:
 1. Increase awareness among researchers, students, educators, policy makers
 2. Stimulate research ideas and recommendations
 3. Catalyze the development of training opportunities
 4. Provide an evidence-base for policy and decision-making in East Africa in preparation for, and in response to, climate change
 5. Initiate framework for collaboration between the two schools of public health

The symposium

- Target audience: :
 - Scientists, students, educators from public health, environmental studies, agriculture, agroecology, nutrition sciences
 - Civil society, non-governmental organizations
 - Government stakeholders
- Program and background paper informed by a scoping review of the literature
 - Search terms: climate change, nutrition, food security, East Africa (Kenya, Uganda, Tanzania)
- Symposium format: keynote and oral abstract presentations, plenary discussions, small group work, poster viewing sessions, and networking opportunities
- 121 participants from 26 institutions in Kenya, Uganda, Canada, USA, and elsewhere, gathered for two days
 - Mostly from academic and community settings

Primary themes and keynote speakers

- **Opening Plenary:** Forest conservation and sustainable forest management, Madam Chancellor, Professor Miriam Were, Moi University
- **Agriculture, nutrition, agro-biodiversity:** Prof. David Ayuku (Moi University); Dr. Dino Martins (Mpala Research Center); Prof. Lena Nakhone (Egerton University)
- **Water security:** Ikal Ang'alai (PhD Candidate in Political Ecology at University of Leicester); Cornelius Chepsoi (Chairman, Eldoret Water and Sanitation Company)
- **Renewable and sustainable cooking fuels:** Dr. Mary Njenga, Scientist in Bioenergy at World Agroforestry Center
- **Vulnerable populations:** Prof. Daniel Sellen (University of Toronto); Prof. Vincent Sudoi (University of Eldoret); Prof. Andrea Cortinois (University of Toronto)
- **Human rights and sustainable development:** Prof. Lisa Forman (University of Toronto); Prof. Violet Mugalavi (University of Eldoret)
- **Closing Plenary:** Planetary health, Professor and Executive Director, Alex Ezeh, African Population and Health Research Center

Insight #1: Gap between knowledge and practice

- Literature review revealed extensive knowledge on climate change as related to agriculture and potential impact on food security in East Africa.
 - Very little on the actual impacts on human health and nutrition.
- “If it doesn’t happen in the community, it doesn’t happen”
 - National and international policies, goals, and aspirations are helpful but not sufficient.
 - Need simultaneous multi-level activity with measurable impacts monitored.

Insight #2: Need to blend indigenous and traditional knowledge and practices with modern technology and best-practices

- Maize is a colonial import to Africa, now dominant staple in East Africa
- Conservation agriculture and climate-smart agriculture
 - Traditional land management practices that prevent over-grazing and soil depletion need to be recognized and strengthened.
 - Drought resistant indigenous crops: sorghum, millet, cassava – planting crops with different maturing periods
 - Harvesting and storing rain and flood water for irrigation and household use
- Food security depends on pollinators!
 - Honey making is a traditional practice with massive economic, ecological, and nutritional implications

Insight #3: “Water is a good in short supply”

- What is the value of water?
 - Cultural, ecological, socioeconomic, and hydrological implications
 - Fracking and industrial uses and waste
- Only 60% of water needs in Eldoret being met (pop. 500,000-750,000)
 - Rapidly growing city
 - Directly linked to deforestation, pollution, and unsustainable overuse
 - Need high level investments in rainwater harvesting and storage, reuse of wastewater, and public education.
- Ongoing and potential violent conflicts and wars over water
 - Battle over Omo Basin dams (Ethiopia) and impacts on Lake Turkana (Kenya)

Insight #4: Energy access and food security are interconnected in sub-Saharan Africa

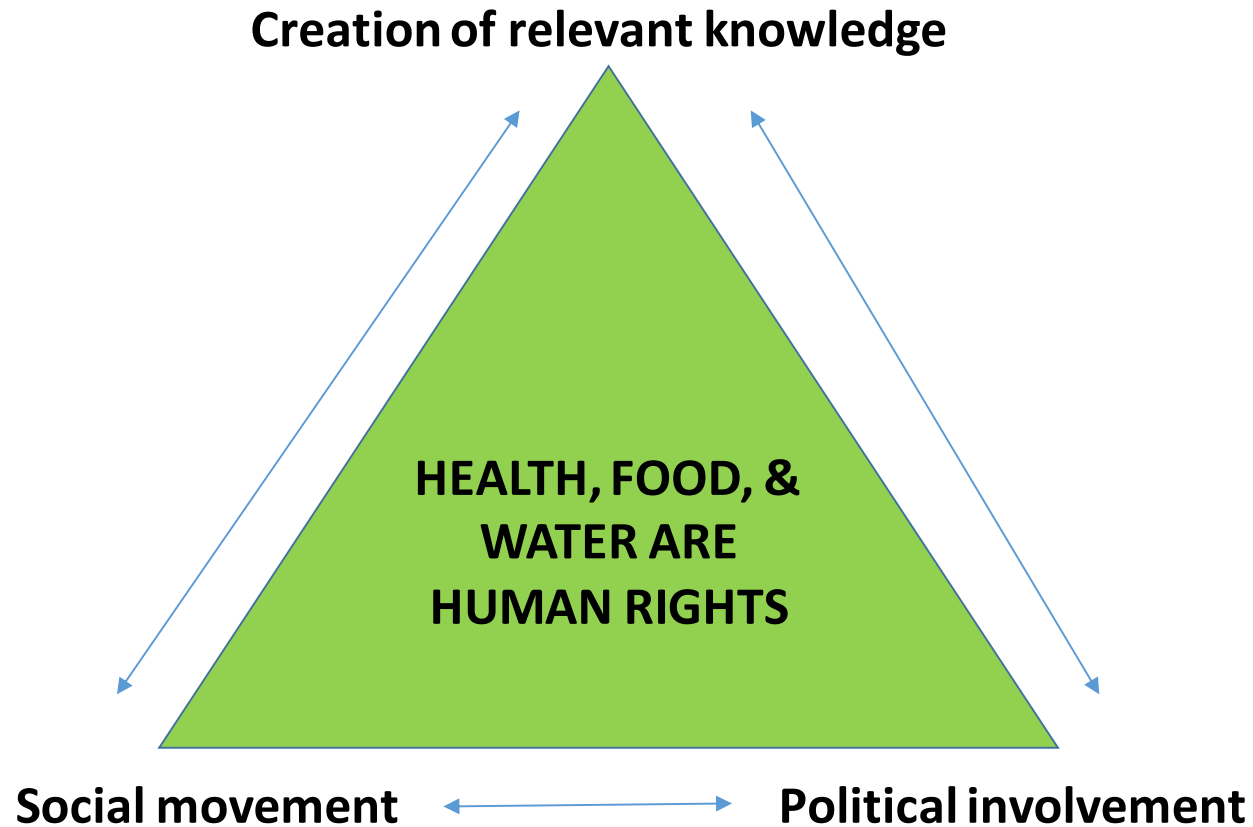
- ~90% of the population in Sub-Saharan Africa relies on wood fuel for cooking - or 2.5 million tons of charcoal per year.
- Negative impacts from firewood on the environment, health of women and children (indoor air pollution, back strain)
 - High opportunity costs particularly to women and girls
- Alternatives exist (biogas, LNG, alternative forms of charcoal) but lack of infrastructure, subsidies, community sensitization and leadership
 - Need to be women-centered

Insight #5: Climate change as risk multiplier

- Communities living in Arid and Semi-Arid Lands (ASAL)
 - Recurrent environmental degradation and natural disasters linked to recurrent drought, hunger, and chronic extreme poverty
 - Livestock are a core component of region's livelihood
 - Potential to capitalize on this through improved breeding, reviving communal land ownership, and introducing zero-grazing livestock, innovative agricultural technologies
- Human migrants: rural to urban, across national boundaries
 - Vicious cycle between climate change and decreased food security
 - Need for national and regional food sovereignty: localization of agro-ecological food systems
- Infants and lactating mothers
 - Breastfeeding as a 'human care package' component – an ancient, economical, solution to infant nutrition over 5 MY of climate changes
 - Potential for multilayered systems approach to protect, support, enhance

Insight #6: 'The Triangle That Moves the Mountain'

P. Wasi, http://www.who.int/hrh/en/HRDJ_4_2_06.pdf



Sustainable production and consumption of food and water *is* sustainable development.
SDG's 6, 12, 14, 15

Insight #7: Planetary Health

The Lancet Commissions

- We are mortgaging the long-term health and sustainability of humanity and the planet for short-term economic gains and lifestyle choices.
- Food and water are a potential pivot around which positive state-shifts¹ can be achieved.



The Rockefeller Foundation–Lancet Commission on planetary health

Safeguarding human health in the Anthropocene epoch:
report of The Rockefeller Foundation–Lancet Commission on
planetary health

Sarah Whitmee, Andy Haines, Chris Beyrer, Frederick Boltz, Anthony G Capon, Braulio Ferreira de Souza Dias, Alex Ezeh, Howard Frumkin, Peng Gong, Peter Head, Richard Horton, Georgina M Mace, Robert Marten, Samuel S Myers, Sania Nishtar, Steven A Osofsky, Subhrendu K Pattanayak, Montira J Pongsiri, Cristina Romanelli, Agnes Soucat, Jeanette Vega, Derek Yach

1. Barnofsky et al. Nature. 2012. 486: 52-58

Summary of Recommendations

- Multisectoral, transdisciplinary, community-based, population health intervention and implementation research is needed to address the complex and interconnected issues of climate change, nutrition, and food security.
- Participatory initiatives that engage vulnerable populations (women, pastoral populations, urban poor) and those that integrate indigenous food system practices are essential.
- Training priorities
 - Integrate climate change into public health curriculums
 - Novel transdisciplinary courses on planetary health.

A few of our next steps in progress....

- Detailing literature review, lessons and recommendations for a peer-reviewed publication
- Creating a Climate Change and Public Health diploma program through Moi University and University of Toronto.
- Closer examination of water sovereignty as a point of leverage for major change.
- Developing collaborative, transdisciplinary research proposals to examine the effect of climate-smart agriculture on nutritional status and health of women and children in East Africa.

Planning Committee

University of Toronto

- *Co-Chair:* Dr. Paula Braitstein, University of Toronto, Dalla Lana School of Public Health
- Professor Daniel Sellen, University of Toronto, Dalla Lana School of Public Health
- Professor Donald Cole, University of Toronto, Dalla Lana School of Public Health
- Professor Ann Fox, University of Toronto, Dalla Lana School of Public Health
- Professor Arun Chockalingam, University of Toronto, Dalla Lana School of Public Health

Moi University

- *Co-Chair:* Dr. Susan Keino, Moi University, College of Health Sciences, School of Public Health
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- Dr. Simiyu Tabu, Moi University, College of Health Sciences, School of Public Health
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www.kuwatayari.com

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