

GlobeLife



DevRes 2022: Transforming Development Research for Sustainability

August 22-24, 2022

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Plenary Sessions

Welcome and Plenary 1: Transforming development research for sustainability

When: 2022-08-22 **Time:** 09.30-10.50 **Location:** The Aula, Uppsala University

Welcome by:

- ❖ **Meena Daivadanam**, Chair of the DevRes Steering Committee, Associate Professor, Department of Women's, and Children's Health, Affiliated to Department of Global Public Health, Karolinska Institutet
- ❖ **Anders Hagfeldt**, Vice-Chancellor Uppsala University
- ❖ **Ole Petter Ottersen**, President Karolinska Institutet

Keynote speakers:

- ❖ **Dr. Diane Gashumba**
Ambassador of Rwanda to the Kingdom of Sweden
- ❖ **Dr. Lisa Schipper**
Research Fellow at the Environmental Change Institute at Oxford

Chair:

- ❖ **Meena Daivadanam**, Uppsala University

Overview:

The keynote speakers will describe....

Hi - my talk will be on different development paradigms for transformation to deal with climate change. The talk will briefly ask what we have learned from sustainable development, touch on other development paradigms, including new ideas such as degrowth, to ask whether 'climate resilient development' could be a realistic - and sufficient - model for us to move into transformation.

"Ambassador Diane's presentation will discuss the role of research for development and in achieving the SDGs; the needs for transformative research; utilizing R&D to address Covid-19 and other health challenges; Rwanda achievements in terms of Science, Technology, Research and Innovation investment; and needs for global collaboration for R&D and innovation investment".

Plenary + Panel 2: Public Event on the ‘New government strategy for research and development cooperation’

When: 2022-08-22 **Time:** 15.00 – 16.45 **Location:** The Aula, Uppsala University

Moderator:

- ❖ **Stefan Swartling Peterson**, Karolinska Institutet

Speakers and Panelists:

- ❖ **Helen Eduards**, Director-General for International Development Cooperation, Ministry of Foreign Affairs
- ❖ **Carin Jämtin**, Director-General, Swedish International Development Cooperation Agency
- ❖ **Gabriel Wikström**, Swedish national coordinator for 2030 agenda
- ❖ **Anders Söderholm**, Director-General, Swedish Higher Education Authority
- ❖ **Ingrid Öborn**, Chair of committee for development research, Swedish Research Council

Overview:

During this public event all invited panelists will provide an opening statement regarding Sweden’s new government strategy for research and development cooperation from the perspective of their respective positions and agencies. Following all opening statements, a panel discussion will commence and will allow for participants to broach questions on the new strategy and the direction of development research in Sweden and abroad.

Plenary 3: Intersectorality of prevention, NCDs as an example

When: 2022-08-23 **Time:** 10.00-11.00 **Location:** ONLINE only

Keynote speakers:

- ❖ **Dr. Luz Maria De-Regil**
Unit Head for the Multisectoral Action in Food Systems at WHO

- ❖ **Dr. Sandro Demaio**
Chief Executive Officer at VicHealth

Chair:

- ❖ **Jonas Bergquist**, Uppsala University

Overview:

During this Plenary session both invited speakers will present on Intersectorality for preventing Non communicable disease. The first speaker Dr. Luz Maria De-Regil will emphasize on WHO multi sectorial effort and actions for preventing diet related NCDs. Dr. Luz presentation will also address the five interconnected and interrelated impact pathways through which food systems negatively affected human health and the new need of intersectoral collaboration to tackle these problems. The second speaker, Dr. Sandro Demaio will focus on the relevance of intersectionality in prevention of Non communicable disease and the Victorian experience. Following the presentation, participants will ask questions to our presenter for elaboration.

Plenary 4: What is meant by ‘sustainable health’ from a COVID-19 perspective

When: 2022-08-23 **Time:** 15.15-16.15 **Location:** ONLINE only

Keynote speakers:

❖ **Jonathon Suk**

Senior Expert, Emergency Preparedness and Response Support at the European Centre for Disease Prevention and Control

❖ **Dr. Maria Elena Bottazzi**

Associate Dean of the National School of Tropical Medicine and Co-director of Texas Children’s Hospital Center for Vaccine Development

Chair:

❖ **Rhoda Wanyenze, Makerere University**

Overview:

From Maria:

‘Sustainable health’ will require academic creativity, strategic alliances, and diplomacy. This presentation will provide a behind the scenes vignette of the importance of open science and vaccine diplomacy to build capacity for vaccine development locally and with foreign nations, to successfully advance new low-cost and effective vaccines against emerging and neglected tropical diseases and to guide and influence vaccine policy and advocacy.

From Jonathon:

“Sustainable health” is crucial to ensure strengthened societal resilience against the ongoing COVID-19 pandemic as well as against future pandemics. Sustainable health, in the context of pandemics, relates to at least three important areas. First, as the “One Health” approach draws attention to, global environmental sustainability is important, given that risk drivers for infectious diseases include environmental factors such as climate change or deforestation. Second, in order to face the global challenges posed by infectious disease, health systems themselves must be sustainable; global investments in early warning and surveillance systems, pandemic preparedness, and international cooperation will continue to be essential in the coming years and decades. Finally, public health responses must also be sustainable, insofar as that they are commensurate to threats and limit, to the extent possible, negative socioeconomic impacts from the measures required to control infectious disease. Assuring the latter will require the best possible epidemiologic data alongside risk communication efforts based upon behavioural insights.

Plenary + Panel 5: Research and education in global health and development: are movements for ‘decolonization’ actually shifting power systems

When: 2022-08-24 **Time:** 09.30-11.30 **Location:** The Aula, Karolinska Institutet

Moderators:

- ❖ **Elsharif Hussein**, Master student in Global Health, Uppsala University
- ❖ **Sohal El Halabi**, PhD student at the Department of Global Public Health, Karolinska Institutet

Speakers and Panelists:

- ❖ **Mariam Claeson**, Project manager of Political Economy of Adolescent Mental health, Department of Global Public Health, Karolinska Institutet
- ❖ **Anders Hagfeldt**, Vice-Chancellor, Uppsala University
- ❖ **Esther Bayiga**, PhD Student, Makerere University
- ❖ **Tanmaya Lal**, Ambassador of India to Sweden and Latvia
- ❖ **Ole Petter Ottersen**, President, Karolinska Institutet

Overview:

During this plenary all invited panelists will provide an opening statement on their perspective on whether movements for ‘decolonization’ are shifting power systems within the fields of development and global health research and education. Following all opening statements, a panel discussion will commence and will allow for participants to broach questions to the panelists on what more can be done.

Plenary and Closing 6: What's next

When: 2022-08-24 **Time:** 15.30-16.30 **Location:** The Aula, Karolinska Institutet

Closing remarks from:

- ❖ **Meena Daivadanam**, Chair, Associate Professor at the Department of Women's and Children's Health.
- ❖ **Anders Hagfeldt**, Vice-Chancellor Uppsala University
- ❖ **Ole Petter Ottersen**, President Karolinska Institutet
- ❖ **Erik Ahlgren**, Professor, Department of Space, Earth and Environment, Energy Technology, Swedish Research Council
- ❖ **Andreas Mårtensson**, Professor at the Department of Women's and Children's Health, Uppsala University, GlobeLife
- ❖ **Cecilia Stålsby Lundborg**, Professor and research group leader for Health Systems and Policy at the Department of Global Public Health, Karolinska Institutet, GlobeLife

Overview:

In this session we will pull together some of the key points and messages that have commenced over the course of the conference and highlight the potential future discussions that need to take place in this area. GlobeLife will take a chance to discuss how we can continue the work and collaboration that has been fostered during the conference. The Swedish Research Council will mention the plans for the upcoming DevRes conference and how to apply to be the next hosting institution. With a short wrap up and thank you from both the Vice-Chancellor at Uppsala University and the President of Karolinska Institutet.

Organized Sessions

These sessions are organized by networks or organizations and are meant to be participatory sessions that engage participants on topics related to **‘Transforming development research for sustainability’** as well as the sub-themes included within DevRes 2022.

OS 1 - Planetary health: the role of coastal ecosystems

When: 2022-08-22, 11:00 - 12:00, **Where:** TBD

Organized Session

Mats Björk¹

Alice Castensson^{2,3}

¹ Stockholm University

² Stockholm Environment Institute

³ Swedish Development Research Network

Content description: Coastal areas are home to both diverse species and ecosystems as well as sources of people's livelihoods. They provide vital ecosystem services and important elements needed to tackle rising temperatures and climate change, and support people's access to food, energy and water. However, increased human pressure and urban development along coastal regions might threaten marine ecosystems with consequences on the climate, environment - and human well-being.

The session invites researchers and policymakers to discuss a policy dilemma related to coastal ecosystems, and reflect upon how this is dealt with in policy and practice working with the 2030 Agenda.

The session asks:

What tools do we have to sustainably manage coastal zones, and what does current research say about this?

In which ways can research influence governance of coastal areas that are sustainable for both people and the planet?

What resources and processes are needed for this to happen?

Which factors hinder sustainable governance of coastal areas?

OS 2 - Maternal health care to migrant women in Scandinavia

When: 2022-08-22, 11:00 - 12:00, **Where:** TBD

Organized Session

Birgitta Essén^{1,2}

¹ Associate professor Sarah Fredstad Villadsen PhD, Department of Public Health, University of Copenhagen, Denmark.

² Ingvil Krarup Sørbye MD, PhD, Norwegian Advisory Unit for Women's Health, Department of Gynecology and and Obstetrics, Oslo University Hospital, Oslo, Norway

Content description: Proportions of pregnant migrant women in Europe have increased over the past years. Several studies have shown increased risk of adverse maternal outcomes among women with a migration background. Different interventions and models of maternity care have been designed in European countries to better address migrant health inequalities and barriers to quality care.

The Scandinavian countries share a similar welfare-system model as well as universal free maternity care. However, the organization of maternity care differs. Healthcare providers are also part of cultural systems of norms — such as pertinence to gender equality — although these are seldom problematized. We have less knowledge as to which interventions are effective in improving communication and information exchange in migrant populations.

Interventions that have been implemented in the Scandinavian studies include:

- Educational materials with information about pregnancy symptoms in multiple languages
- Education and sensitization of health care personnel in relation to communication and flow of information
- Education and sensitization of health care providers role in strengthening of health literacy and self-care among pregnant women and mothers

This brings forth four relevant questions:

- To what extent do organizational structures impinge on the quality of continuum of care during pregnancy and birth for migrant women in Scandinavia?
- Do we target interventions to migrant women only, or do we integrate interventions into generalized maternity services?
- How can interventions be scaled up whilst adjusting to national and local conditions?
- Can 'reflexivity', as working tool, assist providers to reflect upon how gender equality norms influence clinical encounters?

OS 3 - Addressing complex health challenges through multisectoral social innovations

When: 2022-08-22, 11:00 - 12:00, **Where:** TBD

Organized session

Patty Alleman¹

Olusoji Victor Ladele¹, Anna Forsberg², Irene Wanyana³, Karin Båge⁴

¹ UNICEF Office of Innovation

² Karolinska Institutet Innovations AB

³ Makerere University

⁴ Center of Excellence for Sustainable Health

Content description: In this session we are highlighting the need for different actors and sectors of society to collaborate in order to solve complex health challenges such as lifestyle related diseases, an ageing population, inequalities in health and mental health disorders.

The UNICEF Office of innovation (OOI), who recently established a headquarters in Sweden, is helping to catalyze transformative action in mental health impact for and with young people. The OOI will showcase the design methodology that engages a multisectoral community as solution makers, not least, youth themselves in all their global diversity.

Karolinska Institutet (KI) Innovations will share insights from a project conducted together with Research Institutes of Sweden (RISE), Leksell Social Ventures (LSV) and two Swedish municipalities, which offers as a methodological framework to co-design of multisectoral innovations for impact.

Makerere University puts the light on the hindrances of uptake of new technologies for improved health due to issues like limited capacity, traditional culture, gender inequalities, and governance issues - insights which further demonstrate the need for multi-sectoral, and multi-dimensional collaborations.

Center of Excellence for Sustainable Health has identified gaps in quality education for innovation as a critical step to accelerate progress on achieving good health and wellbeing for all. In this session, they will share a few examples of strategies that are key to closing this gap.

Finally, we will end with an open discussion on how a local innovation ecosystem can work as a driver towards further collaborations for social impact across the globe.

OS 4 - Bridging research and policymaking in the implementation of the 2030 Agenda

When: 2022-08-22, 13:30 - 14:30, **Where:** TBD

Organized Session

Janet Vähämäki^{1,2}

Måns Fellesson³

¹ Swedish Development Research Network

² Stockholm Environment Institute

³ Swedish Ministry of Foreign Affairs

Content description: The 2030 Agenda and the Sustainable Development Goals (SDGs) along with the Addis Ababa Action Agenda on Financing for Development (FfD) both highlight the importance of science-based decision-making. This is based on the rationale that results from science can lead to new innovations and that science-based theories and methods constitute adequate gauges in various stages of the implementation.

In the Swedish Development Policy Platform, the overall guiding document for the Swedish development cooperation, it is addressed that in order to reach Swedish policy ambitions and the 2030 Agenda, Sweden should build broad engagement and inclusive partnerships between actors in Sweden, including Swedish universities, higher education institutions and research institutions; and to ensure that such institutions “possess knowledge of complex contexts and links that partly explain the varying causes of poverty and the forms it takes”.

The establishment of functioning tools of exchange between the science community and the decision-making bodies is a basic premise, but not always easy to attain because of various reasons.

The seminar invites researchers and policymakers to discuss how we can increase interaction between research and policy in Swedish work towards the 2030 Agenda.

The seminar asks:

Why is science-based knowledge important in the policymaking on the implementation of the 2030 Agenda?

What are the main barriers to interaction between science and policymaking?

How has Sweden so far worked with integrating science into policymaking on the 2030 Agenda?

What further resources and processes are needed to increase the interaction?

Speakers:

Thomas Elmqvist, Chair, Sida Scientific Advisory Board

Ingrid Öborn, Chair Committee for Development Research (VR)

Anders Hagfeldt, Vice-chancellor at Uppsala University

Ole Petter Ottersen, President of Karolinska Institute

Gabriel Wikström, National coordinator for Agenda 2030, Swedish Government

OS 5 - Accelerating action towards achieving sustainable health

When: 2022-08-22, 13:30 - 14:30, **Where:** TBD

Organized Session

Dr Rhoda Wanyenze¹

Tobias Alfvén²

¹ Makerere University

² Karolinska Institutet

Content description: The virtual Centre of Excellence for Sustainable Health (CESH) is a collaboration between Karolinska Institute (KI) and Makerere University in Uganda. The Centre of Excellence for Sustainable Health aims to develop capacity and mobilize actions to drive the agenda for sustainable health. The 2030 Agenda for Sustainable Development permeates the Centre.

The session will introduce participants to practical tools designed by the CESH. The tools suggest workable approaches to complex health systems challenges faced by the low-, middle-and developed-income countries. After a situation analysis of current health systems in different settings, domain experts have carefully developed these tools. The tools for action will be presented in a highly interactive session, and participants will have an opportunity to work with the tools, test, and offer feedback. While the session will introduce participants to these crucial tools, this session will allow CESH to evaluate the developed tools for further improvement. The tools have been developed for students, researchers, and practitioners to accelerate the progress of achieving sustainable health.

OS 6 - Examining the Fragile Situation of Academic Freedom in Southeast Asia

When: 2022-08-23, 11:15 - 12:15, **Where:** TBD

Organized session

Joel Mark Barredo¹

Ying Hooi Khoo^{1,2}, Bidyalaxmi Salam^{1,3}, Patricia Rinwigati^{1,4}

¹ Strengthening Human Rights and Peace Research/Education in ASEAN/Southeast Asia Programme (SHAPE-SEA)

² Department of International and Strategic Studies, Universiti Malaya

³ Institution of Human Rights and Peace Studies, Mahidol University (PhD Student)

⁴ Djokosoetono Research Centre, Universitas Indonesia

Content description: Existing challenges facing academic freedom in Southeast Asia are already aggravated even before COVID-19 pandemic had erupted. Currently, the region is experiencing unconventional methods attempting to infringe academic freedom. Heightened securitization, resulting in deepened suspension of rights and freedoms, as well as attacks on democratic values and institutions, has become widespread.

This has taken a toll on the problematization, production, and dissemination of knowledge throughout the region. Moreover, the security and safety of many academics, researchers and students have also been under threat. While there is no universally accepted meaning of academic freedom, governments have shown their tendency to react discriminately mainly against those with opposing views and criticisms. Experiences of academic institutions, academics and researchers vary as legislation and policy differ in addition to the specific social, economic and political contexts.

Restrictions placed over institutional autonomy have also indirectly impacted academic freedom. To freely express and share research findings has been tremendously difficult, particularly for those in politically fragile situations. Other than being confronted with direct repercussions, self-censorship is becoming a normal practice.

It is common that unlike other pillars of democracy, academic freedom is often overlooked in evaluating a state's human rights and democratic condition. More than ever, we, as an academic community, are needed to critically engage, discuss, and understand the situation of academic freedom. Without which it is not possible to explore and identify areas of intervention to protect academic freedom from further deterioration as well as uplift to its true meaning in the future.

OS 7 - Research school on sustainable development and poverty reduction

When: 2022-08-23, 13:45 - 14:45, **Where:** TBD

Organized session

Kristina Jönsson¹

Anders Sjögren², Fredrik Söderbaum³, Fred Dzanku⁴

¹ Lund University

² Uppsala University

³ Gothenburg University

⁴ University of Ghana

Content description: The objective with the planned session is to present a new research school within the field of development studies. The research school, established in 2022, deals with sustainable development and poverty reduction in low-income countries, with a particular focus on aspects of governance, power, and inequality. Through its work, the school seeks to close a major gap in Swedish doctoral training. So far, there has been a lack of both systematic knowledge and collaboration on issues related to governance, power, and inequality within the overall context of the sustainable development goals. The school has two overarching objectives: (1) to contribute to high-quality and boundary-crossing doctoral research in the focus area; and (2) to strengthen collaboration and networks between the four partner universities and between individual doctoral students within and beyond these universities. The school is organised as a partnership between the universities of Lund, Gothenburg and Uppsala, and the University of Ghana. While the school is coordinated and administered by Lund University, a program committee and an international advisory board oversees its work. The school is open to doctoral students from the four partners but also from other universities and from any discipline. The work program is structured in five activities: (a) jointly developed interdisciplinary doctoral courses, (b) a monthly research seminar, (c) policy dialogues with invited guests intended to bridge the gap between research and policy, (e) a mobility program, and (e) other capacity-building and skills training activities.

OS 8 - More than the sum of its parts: How to successfully run an organisational network

When: 2022-08-23, 13:45 - 14:45, **Where:** TBD

Organized Session

Tobias Lindström Battle¹

Hanna Knecht²

¹ Swedish Institute for Global Health Transformation Student Organisations Network

² GlobeLife Student Section

Content description: Youth participation driven by cross-disciplinary collaboration is an important driving force to implement the Sustainable Development Goals (SDGs). The SDGs provide an operational framework to consider health issues globally and how ethical leadership plays a transversal role to help accelerate the impact of the efforts made. The workshop will introduce the SIGHT - Student Organisations Network and GlobeLife student section work throughout the years showcasing the inputs of student organisations towards global health transformation from a transdisciplinary approach. We will share our experiences on how to manage and expand a network of students, nurture collaboration within and with other entities, good practices on organising large-scale events, and overall, how to empower youth to use the available platforms to develop their ideas and take action towards their social interests.

OS 9 - Improving interdisciplinary skills for early career researchers to achieve the Sustainable Development Goals

When: 2022-08-24, 13:30 - 15:00, **Where:** TBD

Organized Session

Kristi Sidney Annerstedt¹

Ashish K.C.², Xiankeng Choong³, **Rachel Forse**⁴, Kritika Dixit⁵

¹ Department of Global Public Health, Karolinska Institutet

² Department of Women's and Children's Health, Uppsala University

³ Department of Neuroscience, Karolinska Institutet

⁴ Friends for International TB Relief (FIT) - Vietnam

⁵ Birat Nepal Medical Trust (BNMT) - Nepal

Content description: Many argue the only way to achieve the ambitious sustainable development goals (SDGs) is to work interdisciplinarily. However, there are several conceptual and structural challenges preventing meaningful interdisciplinary collaborations that are difficult to improve without large paradigm shifts in how we value knowledge, funding structures, and the lack of interdisciplinary teaching in education. While these are important enablers and need to be addressed, we feel early career researchers are well-placed to lead innovative approaches to tackle the grand challenges especially surrounding the SDGs. We need to prioritize educating and building capacity among our young researchers to be ready to work interdisciplinary and across sectors. The objectives of this planned session will be to build skills needed to work in an interdisciplinary team using a case study from the SIGHT fellows (cohort 21-22 - <https://www.kau.se/files/2021-03/SIGHT-Fellows-Explained.pdf>). We will use the four stages of interdisciplinary learning (disciplinary grounding, perspective taking, discovering common ground, integrating perspectives) to structure the co-learning activities for the participants. The first speaker will present the first stage (disciplinary ground) by introducing the different disciplines represented by the SIGHT fellows, the epistemology of the respective disciplines, assumptions including ethics and ideology and methods specific to that discipline for the disciplinary grounding. The participants will then complete the latter three stages with specific learning activities grounded within the SDG framework.

Specifically, participants will:

1. Take perspective by doing a 'figure storm' activity
2. Discover common ground between the disciplines
3. Explore integrating perspectives through concept mapping

OS 10 - Views and advice to the Swedish Research Council on strengths, difficulties and needs within Development Research

When: 2022-08-24, 13:30 - 15:00, **Where:** TBD

Organized Session

Dan Wilhelmsson¹

Ingrid Öborn^{1,2}, Erik Ahlgren¹

¹ Swedish Research Council

² Swedish University of Agricultural Sciences

Content description: The Committee for Development Research at the Swedish Research Council funds research of relevance for poverty reduction and sustainable development in low income countries, and enhances collaboration with researchers in low income and lower middle income countries.

Development Research shall contribute with knowledge on the causes, consequences of poverty and potential solutions, as well as on sustainable development and it's links to poverty reduction and other societal challenges in low income countries and regions. Development Research encompasses all disciplines and research areas, such as humanities, behavioral science, economy, social sciences, educational research, natural science, technical science, environmental science, urban planning, medicine, and health, and includes transdisciplinary research.

The Committee is currently conducting an overview of the subject area Development Research, which will be an important strategic document for the Committee. It will for example guide the issuing of calls, resource allocation, the development and refinement of aims of and criteria for grants, and the communication of results of funded research. The subject overview will also be part of the basis for the input from the Swedish Research Council to the Swedish Government's next research bill.

Engagement from active researchers is vital here. During the session interactive discussion will be held in relation to above and participants will be asked to provide input and advice on the strengths, difficulties and needs within Development Research.

OS 11 - Co-creating trans disciplinary research design, using a soft system methodology

When: 2022-08-24, 13:30 - 15:00, **Where:** TBD

Organized Session

Klas Palm¹

¹ Uppsala University Sustainability Initiatives

Content description: Welcome to an organized session where we co-create visions of desire future in health equity. We co-create methods for how research projects then can be formulated and utilized. In the workshop we co-create with soft system (SSM) and design methodology in smaller groups. We work with the following three issues; 1) who and how should formulate research questions? 2) How do we design the research method? 3) how do we ensure the utilization for final beneficiaries of the research project?

Oral Presentation Sessions

These parallel sessions consist of chosen abstracts categorized within the sub-themes of the conference. Each session has anywhere from four to six abstracts which will be presented during the session with time for participants to discuss and ask questions to the students, researchers or practitioners presenting their work.

Oral Presentation Moderators

Sessions	Moderators and affiliation
Sustainability in food systems	Mathilde Sengoelge (Uppsala University) and Mark Spire (University of London)
Multisectoral research and policy transitions for energy systems and climate change	Anna-Karin Hurtig (Umeå University) and Irene Wanyana (Makerere University)
Planetary and One Health	Paul Egan (Swedish University of Agricultural Sciences) and Mahbubur Rahman (International Center for Diarrheal Diseases Research)
Gender dimensions in health and development	Helle Mölsted Alvesson (Karolinska Institutet) and Iryna Mogilevkina (Bogomolets National Medical University)
Frameworks and integrated water and sanitation management	Sahar Dalahmeh (Uppsala University) and Arun Kumar Rayavellore Suryakumar (University of KwaZulu-Natal)
Sustainable Water Governance & gender inequality	Neil Powell (Uppsala University) and Mendy Zibuyile Shoji (University of KwaZulu-Natal)
Sustainability in light of COVID-19 and handling future pandemics	Helena Nordenstedt (Karolinska Institutet) and Wendy Murillo (National Autonomous University of Honduras)
Food safety	Johanna Lindahl (Uppsala University) and Luz Maria De-Regil (World Health Organization)
Inequalities and future needs in sustainable health and education	Mats Målvqvist (Uppsala University) and Rhoda Wanyenze (Makerere University)
Migration's impact on health and development	Soorej Puthooppambal (Uppsala University) and Papa Sow Sow (Nordic Africa Institute)
Multisectoral research and policy transitions in health and development	Claudia Hanson (Karolinska Institutet) and Deepak Kumar (Amity University)
Inequalities and future needs in sustainable development	Marie Hasselberg (Karolinska Institutet) and David Guwatudde (Makerere University)
Urbanization and its impact on health and development	Syed Mosfhiqur Rahman (Uppsala University) and Luke Amadi (University of Port Harcourt)
Technological and other innovations in low resource settings	Nina Linder (Uppsala University) and Yap Boum II (Epicentre MSF)

Oral Presentation Session 1: Sustainability in food systems

When: 2022-08-22 **Time:** 11:00 - 12:00 **Location:** TBD

Moderators: Mathilde Sengoelge and Mark Spires

OP 1.1 - Do certification schemes lead to the economic upgrading of mango farmers? A case of smallholder farmers in Southern Ghana

6. Sustainability along the value chains for food systems

Rexford Akrong¹

¹ University of Cape Coast, Ghana

Introduction: Over the past decades, developing countries have increasingly made efforts to integrate their agricultural sector into global value chains (GVCs). Farmers' participation in GVCs has been purported to lead to their economic upgrading. Specifically, participation in GVCs can increase the competitiveness of farmers thereby increasing the prices they receive for their products. However, these global value chains are characterized by voluntary sustainability standards (VSS) that claim to certify the social and environmental sustainability of production conditions to verify compliance in GVCs. Whereas these certification schemes can be catalysts to trade, difficulties with compliance with the relatively high standards in GVCs can impede trade among smallholder farmers. Smallholder mango farmers in Ghana are not spared from the challenges associated with accessing high-value mango markets which are also characterized by VSS. Improved compliance with VSS of high-value mango markets through the adoption of GlobalGAP certification (the most popular certification scheme in Ghana's mango sector) has the potential of increasing the smallholder farmers' level of participation in high-value markets, thereby increasing their farm incomes.

Methods: This study used a multistage sampling technique to randomly select 224 smallholder mango farmers in Southern Ghana. The study used interview schedules to collect data from the participants. Descriptive statistics and the endogenous switching regression (ESR) model which corrects selection bias was applied to the data to estimate the impact of GlobalGAP certification on the volume of mangoes sold to high-value markets.

Results: The results show that 50% of the sampled farmers were GlobalGAP certified farmers whereas 50% were uncertified. The study revealed that the age of the farmer, annual household income, access to extension services, access to mango marketing information, trust in high-value markets, the average price received, and farm record keeping positively influenced smallholder mango farmers' adoption of GlobalGAP certification. On the other hand, a large family size reduced a farmers' propensity of adopting GlobalGAP certification. Also, the study found that GlobalGAP certification positively and significantly increased smallholder farmers' level of participation in high-value mango markets. Categorically, the magnitude of impact is relatively higher for certified mango farmers than non-certified mango farmers.

Conclusions: The study concludes that compliance with voluntary sustainability standards and adoption of certification schemes can lead to economic upgrading of mango farmers in developing countries. Based on this study findings, the governments of developing countries and development partners alike should capacitate farmers to meet certification standards as a means of enhancing their competitiveness in high-value markets.

OP 1.2 - Global food system and the politics of sustainable consumption: issues and policy options

6. Sustainability along the value chains for food systems

Luke Amadi¹

¹ University of Port Harcourt

Introduction: Discourses on sustainable food consumption abound as evidence accumulates of the growing food asymmetry and inequality driven by global capitalist food system and the rise of powerful food giants in the global North. There is now a considerable and diverse literature on equitable, inclusive, and eco-friendly dimensions of food value chains, including questions of recognition of sustainable consumption. Yet the meaning, scope and practical implications remain contested. Importantly, the broader landscape within which sustainable consumption is situated is rapidly changing, bringing new challenges to the understanding and practice of global food politics in the era of sustainable development.

Methods: In view of the new context in food consumption, this paper adopts a conceptual review methodology and political ecology approach, to explore global food systems and the politics of sustainable consumption.

Results: Results show several contradictions between equitable and sustainability treatments of food on one hand, and capitalist oriented approaches to global food system on the other as the latter accounts for health challenges following carcinogenic effects of genetically modified foods, unequal access to food and increasing distortion of food ecology. In the alternative, the paper demonstrates that sustainable food consumption is inevitable if distinctions between global food inequality and unsustainable consumption are addressed.

Conclusions: Conclusion proposes a research agenda centered on transforming the global food system, placing analysis of power and asymmetries at the center of its inquiry, and focusing on the social and institutional relations and inequalities that both undermine food justice and equality. It provides recommendations for policy guidance.

OP 1.3 - Smallholder pig farm performance: examining the roles of market orientation, veterinary access and purchased feeds

6. Sustainability along the value chains for food systems

Daniel Micheal Okello¹

David Owiny Okello², Tonny Aliro², Elly K. Ndyomugenyi², Walter Odongo¹

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² Department of Animal Production and Range Management, Faculty of Agriculture and Environment, Gulu University

Introduction: In Uganda, pig production has gained prominence with an increasing number of smallholder farmers taking it up. Access to veterinary services and use of purchased feeds by smallholder pig farmers are increasingly becoming important in market-oriented pig production, yet not all farmers have adopted the use of purchased feeds and/or have access to veterinary services when required. This paper assessed the roles of market orientation, veterinary access and use of purchased feeds in sustaining both financial and non-financial performance of the smallholder pig farmer.

Methods: Cross-sectional data from 367 smallholder pig farmers in northern Uganda was collected using pre-tested structured questionnaires. Data was analyzed using correlation analysis, and hierarchical linear regression.

Results: Results show a significant ($p < 0.05$) positive correlation between veterinary access, use of purchased feeds, and the smallholder pig farmers market orientation. The hierarchical linear regression results show that, farmers socio-economic characteristics (age, experience and household size) and farm specific factors (herd size, breed and type of housing used) have significant influence on both financial and non-financial pig farm performance. In the second stage, results show that, access to veterinary services ($p < 0.01$) and use of purchased feeds ($p < 0.05$) have a significant influence on both financial and non-financial performance. With market orientation included in the regression, use of purchased feeds ceases to be significant in the case of financial performance, while access to veterinary services remains significant even with the introduction of market orientation constructs. Results of the third stage show that customer orientation, competitor orientation and inter functional coordination have a significant influence on both financial and non-financial performance of the smallholder pig farms.

Conclusions: The findings of this study imply that, whereas use of better feeds are important to farm performance, the sustainability of using purchased feeds is anchored on the farmer's market orientation. With or without market orientation, access to veterinary services remains important in enhancing farm performance. It is thus important that efforts are put in place to enhance farmers level of market orientation, while, improving their access to quality veterinary services so as to improve their financial and non-financial performance.

OP 1.4 - From fish-to-fish worker traceability in Thai fisheries reform

6. Sustainability along the value chains for food systems

Alin Kadfak¹

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¹ Swedish University of Agricultural Sciences

² Gothenburg University

Introduction: This paper explores the emerging question: what does it mean to be concerned with, and trace, fishworkers in the fishing industry? The limited social criteria in fishery governance are the core reason for recurrent problems of extreme abuse of fishworkers around the world, including trafficking, forced labor and what has been deemed ‘modern slavery’. The violation of labor rights revealed through the modern slavery scandal has challenged sustainable fisheries globally. We argue that labor traceability has reshaped the space of fisheries governing in two ways: it makes seafood producers and migrant fishworkers identifiable and it connects the producers to a specific commodity: fish. We aim to make visible the benefits and frictions that occur between the government’s implementation of labor traceability and workers’ concerns and perceptions towards the reform.

Methods: Drawing from a Thai fisheries reform case study, we observe how labor standards are pulled into fisheries governance through traceability of fishworkers as a governing technique. We base our analysis on 24 respondents and six key-informant interviews, document analysis and two periods of fieldwork in Thailand.

Results: The results show that while fishworkers have seen a major improvement in cases of extreme violation, labor traceability does not solve underlying problems regarding the complex formalization of migrant workers, working conditions on fishing boats, the dilemma between freedom of movement and rights connected to employment and everyday experiences of being a migrant worker.

Conclusions: We conclude that labor traceability has promising policy relevance to the integration of labor rights in fisheries governance, especially when connected to the tracing of fish, but that it requires contextual underpinning.

Oral Presentation Session 2: Multisectoral research and policy transitions for energy systems and climate change

When: 2022-08-22 **Time:** 11:00 - 12:00 **Location:** TBD

Moderators: Anna-Karin Hurtig and Irene Wanyana

OP 2.1 - Sustainable Development, Renewable Energy Transformation and Employment Impact in the EU

11. Multisectoral research and policy transition

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³ Department of Economics, Department of Cape Town, South Africa

Introduction: A successful transitions towards renewable energy systems in the European Union is expected to improve growth, reduce greenhouse gas emissions, and create employment. Analysing recent data from 28 European Union (EU) countries, we investigate the potential interlinkages in employment, renewable energy, and non-renewable energy amongst the EU countries. We further examine assess the contributions of renewable energy and non-renewable energy to the future variation in employment, output, and carbon emissions within the EU. Our results suggest that renewable energy has a positive and significant net employment impact for EU. We further find that renewable energy consumption contributes substantially to the future variability in employment both for the short and the medium term. Also, carbon-dioxide emissions negatively impact the employment level in the EU.

Methods: The focus of this study is to examine the impact of renewable and non-renewable energy on employment, considering the interlinkages between energy, economy and the environment. Furthermore, we quantify potential contributions of renewable energy and non-renewable energy to the future variation in employment, output, and carbon emissions within the EU. To address the various interlinkages between the energy sector, economy, and the environment, we use a system of equations modelling approach that underpins the PVAR econometric model. An additional reason for the choice of PVAR is the fact that by design it makes it easy to quantify the potential changes in renewable and non-renewable energy on future changes in employment, output (GDP) and carbon emissions.

Results: Several interesting results emerge. We find that renewable energy has a positive and significant employment impact for the EU and renewable energy consumption contributes substantially to the future variability in employment both for the short and medium term. We also find that the average total net effect of carbon emission on employment is negative.

Conclusions: Our findings support and extend the earlier research on employment impact of renewable energy (Moreno & López, 2008; Lehr et al., 2012). We further contribute by explicitly estimating the value of the net effect of energy on employment. Furthermore, renewable energy consumption contributes substantially to the future variability in employment, both for the short and medium term. Our results suggest that the transition towards renewable resources and technologies will have a positive employment impact. This employment impact within EU can be further amplified by designing policies that continue to support this transformation and policies that attempt to relocate renewable resource value chain within the European Union.

OP 2.2 - Sustainability and climate change resilience in urban Sudan; translating research into policy and practice

11. Multisectoral research and policy transition

Josepha Wessels¹

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¹ Malmö University

² University of Khartoum

Introduction: Sudan will increasingly become severely affected by climate change with alarming projections of rising temperatures up until 3.1 Degrees Celsius in 2060. In addition to a hotter climate, the country is also challenged by erratic rainfall, drought and extreme flooding events, dust storms, thunderstorms, and heatwaves. This paper assesses and analyses the results of a study on climate change resilience in urban Sudan, supported by the Swedish Research Council, implemented by Malmö University in collaboration with the Institute of Environmental Studies (IES) at the University of Khartoum and the Lund University Centre for Sustainability Studies (LUCSUS). In order to integrate local knowledge into national and international policy strategies and governmental practices, the study is focused on learning from the grassroots in two different urban localities in Khartoum that differ in size, population diversity and are affected by climate change threats, specifically erratic flood events.

Methods: An interdisciplinary Swedish-Sudanese research team studied various aspects of two selected neighborhoods in Khartoum using a mix of research methods. Between 2020 and 2022, the researchers have conducted over 30 semi-structured interviews in person, on zoom and via digital means in over two different selected study sites, it also implemented a participatory approach to photography and ESRI story mapping and organised community level workshops on local knowledge and its important role for policy development on climate change and flood mitigation.

Results: Focusing on the extreme floods of 2020, gave the researchers an excellent data range to closely observe a climate change event. A series of community workshops gave wider insight into local knowledge. A delegation of the research team also participated in COP26 to engage with international policy makers. The results indicate that an elaborate knowledge system on disaster risk reduction and early warning is present at grassroots level and provides excellent opportunities to develop and implement good governance and policy on climate change action and development plans. The study organised two seminars to engage with a wider stakeholder group, including policymakers and politicians.

Conclusions: The researchers conclude that generated data, in particularly composed and compiled through story maps, video and 360 degree video content, has good potential to be translated into policy documents at both national level at the Sudanese Higher Council for Environment and Natural Resources as well as international level through the IPCC delegations in which Sudanese counterparts in this study participated. The final step is to translate this policy making into practice and good governance.

OP 2.3 – Adaptive capacity framings and their implications for knowledge generation and practice.

11. Multisectoral research and policy transition

Fabiola Espinoza¹

Torsten Krause¹, Alicia N'Guetta¹, Emily Boyd¹

¹ Lund University- Centre for Sustainability Studies

Introduction: Adaptive capacity has become a central aspect of climate change adaptation efforts. Within this area, the assessment of adaptive capacity is considered a key element, as it is expected to provide information on where to prioritize adaptation actions and which strategies might be most effective. With the latter in mind, interdisciplinary research focused on developing methods for assessing adaptive capacity has increased exponentially. While the latter may be conducive to the pluralism of knowledge, the variety of ways in which research addresses this issue and the diversity of methodologies that emerge from it, may limit the ability to adequately inform adaptation practices. Aware of the latter, some reviews have provided insights on the diversity of approaches for studying adaptive capacity while others have focused on providing insights on how practitioners could implement those assessments. However, these reviews do not shed light on understanding how the dominance of certain approaches within the field influences certain policy prescriptions. If we aim to support sustainable adaptation practices, it is vital to understand how trends in research influence the prioritization of certain policy responses, while discarding others.

Methods: This research, as part of the EU funded MaCoBioS project, aims to advance the latter by (i) identifying how current research deals with adaptive capacity assessments, (ii) how the field is progressing in overcoming key challenges in adaptive capacity assessments and (iii) what it means for the prioritization of potential adaptation strategies. Specifically, we focus on analysing assessments conducted through index-based approaches, which focuses on marine coastal social or social-ecological systems. We draw on a systematic literature review of peer-reviewed articles dealing with the topic (2014-2021) as well as the use of analytical concepts of frames and framing.

Results: Although data analysis is still ongoing, preliminary results indicate that current trends in adaptation capacity assessments (within coastal communities) originate primarily from risk assessment paradigms. This situation influences the prioritization of indicators that focus on socioeconomic conditions and the proposal of adaptation strategies that focus less on livelihood support and more on technocratic solutions.

Conclusions: This research is important because it explicitly addresses what the connections are between studies on adaptive capacity and policy action while encouraging us to reflect on our role as researchers in setting up policy agenda. Understanding these linkages is essential to fostering research that will enable policy transitions toward more sustainable and just practices that benefit vulnerable communities and the environment in which they live.

OP 2.4 - Analyzing Role of Hybrid Energy System for Improving Urban Energy Potential

11. Multisectoral research and policy transition

Deepak Kumar¹

¹ Amity University Uttar Pradesh

Introduction: Scientific and industrial development has given escalation to a rapidly increasing energy demand. Alternative and augmented sources of energy are being sought everywhere due to the depletion of other non-renewable resources. Solar and wind energy have emerged as one of the cleaner energy sources offering a promising solution to typical polluting energy resources with better efficiency. Hence, the attention has now shifted towards the large-scale propagation of hybrid renewable energy systems.

Methods: Numerous attempts have been taken to illustrate technological advancement considering the requirement of the particular region. Whilst some research has begun to examine the functionality and assessment of hybrid energy systems, but little attention has been paid towards the contribution of the hybrid energy system for urban areas. The proposed work also focuses on the simulation of hybrid renewable energy systems concerning techno-economic feasibility. This work also reports the various technological, scientific, and industrial growths that occurred in the area of the hybrid renewable energy system.

Results: This paper tries to showcase the modeling of a typical urban setup to determine the hourly load profile. The study identifies the growths in the energy potentials of the urban region with the use of a hybrid energy system. It also summarizes the past, present, and future trends of the hybrid energy system design, development, and implementation for the urban region, which can be used in other parts of the world.

Conclusions: It also summarizes the past, present, and future trends of the hybrid energy system design, development, and implementation for the urban region, which can be used in other parts of the world.

Oral Presentation Session 3: Planetary and One Health

When: 2022-08-22 **Time:** 13:30 - 14:30 **Location:** TBD

Moderators: Paul Egan and Mahbubur Rahman

OP 3.1 - Addressing One Health integration challenges in antimicrobial resistance through the co-creation of knowledge and practice with health practitioners

8. Planetary and One health

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Introduction: Antimicrobial resistance (AMR) has emerged as a sustainability issue, comparable in complexity and severity to climate change. Low-income and middle-income countries (LMICs) are especially vulnerable to AMR, with the Southern African region highlighted as particularly susceptible. The research addresses a multi-levelled integration challenge in health-oriented development research, including (i) the implementation gap between knowing and doing, (ii) the relationship in AMR knowledge and practice, of human, animal, and environmental health as separate knowledge domains, and (iii) the need to join research, governance, and community action. When engaging with the 'wicked' problem of AMR (problem evading standardised solutions due to unknown or contradictory conditions), analytical separations between different forms of health or between policy and local communities that are useful analytically can either limit or undermine said effort. To this end, a praxeological research approach, centered on co-creation of knowledge and practice, provides opportunities for transforming development research towards addressing questions of "what to do". As such, the research presents a methodology for the co-creation of AMR practices in "x", i.e., Zimbabwean health care and community environments.

Methods: The abstract utilises a retroductive analysis in developing an existing participatory research workshop tool into *Re-Solve AMR*, engaging Zimbabwean health practitioners in co-creation to substantiate and nuance AMR education. The analysis draws on a One Health approach that understands human, animal, and environmental health as integrated coupled with an expanded understanding of AMR that includes social and biological elements as a biosocial phenomenon and process.

Results: The results include *Re-Solve AMR*, a methodology for co-creating knowledge and practice integrating human, animal, and environmental health dimensions of AMR in ongoing health practices. Starting in health practitioners' knowledge and experiences, the co-creation of AMR educational knowledge and practices supports the evaluation of existing AMR practices, generating practical insights and tools for community-oriented and transformative efforts in addressing AMR. Health practitioners with diverse competencies and experiences are thus able to engage praxeologically, with AMR as it emerges in their shared practices, transforming established ways of addressing AMR.

Conclusions: *Re-Solve AMR* presents co-creation, together with health practitioners, of substantiated and nuanced AMR knowledge and practice that increases the relevance to contextual conditions and situational practices of AMR efforts, addressing the integration challenge in health-related development research. AMR as a wicked problem is not epistemologically 'solved' on a generalised level but re-solved together with health practitioners through co-creation of knowledge and practice in relation to the conditions of healthcare in Zimbabwe.

OP 3.2 - Status of One Health implementation in Ethiopia

8. Planetary and One health

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Introduction: Ethiopia is the second-most populous country in Africa and the 13th in the world, with a population of about 115 million people. It has a growth rate of 2.6 percent. Due to its large population growth, aggressive livestock intensification plan, rich biodiversity, the expansion of rural areas near wildlife habitat, and the prevalence of traditional animal husbandry practices and close contact between humans and animals, the country is at a heightened risk of emerging pandemic diseases and other public health threats. The objective of this study is to assess the development and current status of One Health (OH) in Ethiopia and provide recommendations for future activities.

Methods: Qualitative studies using expert opinion

Results: In recent decades, the Government of Ethiopia (GOE) has made significant investments in animal and human health systems. However, the systems still operate largely independently. Additionally, there are no policies, institutional or legal linkages, to encourage. While ad-hoc cross-sectoral collaboration initiatives for control of infectious disease outbreaks have occurred, they have been limited in their scope and lifespan. In response, in 2016, the GOE established the National One Health Steering Committee (NOHSC). Four relevant ministries signed a MoU for operationalization of OH. The NOHSC is mandated to facilitate multi-sectoral coordination and collaboration among OH stakeholders at national and subnational levels and strive toward a sustainable institutionalized OH platform. Since its establishment, the NOHSC has established different national disease specific Technical Working Groups (TWGs) including Rabies, Anthrax, Brucellosis, Emerging Pandemic Threats (EPT), National Antimicrobial Resistance Taskforce and a National One Health Communication Taskforce to promote multi-sectoral coordination and collaboration. These are expert platforms for addressing zoonoses, facilitating cross-sectoral collaboration and response across sectors, and increasing efficiencies in zoonotic diseases management and other health threats. Additionally, OH coordination structures have been extended to 7 subnational/regional states. Despite this progress, no inventory of the policy and legislative documents and activities supporting the OH approach has been carried out in Ethiopia. Likewise, the impact, added value and cost-benefit of the approach has not been established.

Conclusions: It is imperative to review the existing policy and legislative document, the number, and types of OH activities implemented in the country and their benefits as well as costs

OP 3.3 - Impact of climate on coffee berry disease and coffee yield in Arabica coffee's native range

8. Planetary and One health

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Introduction: Climate change is threatening Arabica coffee production, both due to the direct effects of climate on coffee physiology and berry production, but also through changes in the associated pests and diseases. One of the major threats to coffee production in Africa is coffee berry disease (CBD), which is caused by the fungus *Colletotrichum kahawae*. However, little is known about how temperature, humidity, canopy cover and management may affect coffee berry diseases incidence and coffee yield in the natural populations of Arabica coffee's native range.

Methods: To investigate the effects of temperature and relative humidity on coffee berry disease and yield in the center of origin of Arabica coffee, we recorded daily minimum and maximum temperature, relative humidity, incidence of coffee berry disease and coffee yield for two consecutive years (2018-2019) in 58 sites along a broad environmental and management gradient in southwestern Ethiopia.

Results: Minimum and maximum temperature as well as the mean relative humidity affected coffee berry disease incidence. For example, the incidence of coffee berry disease increased with increasing minimum (low) temperature in March-April 2018 and minimum temperature in July 2018 and mean relative humidity in July 2019, whereas coffee berry disease incidence decreased with increasing minimum temperature of May-June 2018 and maximum (high) temperature in March-April 2019. Improved coffee cultivars had a marked effect on coffee berry disease incidence, with berry infection rates decreasing with increasing proportion of coffee cultivars. The incidence of coffee berry disease and yield consistently decreased with increasing canopy cover in 2019. Coffee yield increased with management intensity, while the coffee berry disease incidence was unaffected by management intensity.

Conclusions: Our findings highlight the potential of canopy cover (shade) and improved cultivars in limiting coffee berry disease.

OP 3.4 - Malaria vectors bionomics linked to irrigation scheme in Ethiopia: implication to malaria transmission intensity

3. Sustainable water management and sanitation systems

Dawit Hawaria¹

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Introduction: Water resource development like irrigated agriculture is key to increase crop productivity and ensure food security in Africa. However, unintended negative public health impacts such as malaria have been a challenge around such developmental projects. This study aimed at assessing the effects of irrigation practices on malaria vector mosquito development and survivorship in Ethiopia.

Methods: The study was conducted in two agroecosystems, irrigated and non-irrigated areas, in western Ethiopia. Monthly larval surveys were conducted between 2017 and 2020. A life-table experiment was done to examine the effect of environmental modification on survivorship and development of both immature and adults *An. arabiensis*. Habitat diversity, larval abundance, pupation rate, development time of immatures, and adult longevity and fecundity were compared between the two agroecosystems.

Results: The number of anopheline positive habitats was two-fold higher in irrigated than non-irrigated areas. Anopheline larval abundance in the irrigated area was 16.6 % higher than in the non-irrigated area. Irrigated agroecosystem was significantly associated with the larval anopheline occurrence. The estimated mean survival time of female *An. arabiensis* in the irrigated and non-irrigated areas was 37.9 and 31.3 days, respectively. The study found that fecundity of *An. arabiensis*, was 96.2% higher in the irrigated agroecosystem than in the non-irrigated area.

Conclusions: The findings of this study underscore that irrigation in semi-arid areas of Ethiopia increases the survival and fecundity of the major malaria vector, *An. arabiensis*, which has an implication on malaria transmission intensity at corresponding settings.

Oral Presentation Session 4: Gender dimensions in health and development

When: 2022-08-22 **Time:** 13:30 - 14:30 **Location:** TBD

Moderators: Helle Alvesson and Iryna Mogilevkina

OP 4.1 - Accessibility of career development programs for male, female, persons, who combine family and occupational responsibilities in Ukrainian energy

5. Diversity and gender in sustainability initiatives

Denys Verba¹

Mariia Tyshchenko¹

¹ Kyiv National Economic University named after Vadym Getman

Introduction: Reforming the energy sector is critical for creating the economic preconditions for sustainable development of modern Ukraine and establishing a democratic model of its social order. Adherence to the principles of inclusive employment, equality for all socio-demographic groups, access to corporate programs, aimed at the development of company's human capital are necessary conditions for the social effectiveness of reforms in the Ukrainian energy sector.

Methods: As the programs of developing the corporate human capital, we understand measures to eliminate the factors of severity and harmfulness of the work environment, providing opportunities to harmonize the performance of family and professional responsibilities, in particular in the form of ensuring access to corporate vocational training for persons, involved in childcare. Accordingly, the prevalence of severity or harmfulness of work are the inverse indicators of such programs' effectiveness for women and men employed in Ukraine's energy sector. The coverage and frequency of participation in corporate vocational training, the spread of voluntary employment with flexible working time, indicators of coverage, and scale of social assistance are direct indicators of the benefits, gained by men and women through corporate programs for the development of human capital in the energy sector of Ukraine.

Results: Using the results of the sample survey, conducted among the energy companies during the fourth quarter of 2020 within the grant, provided by ESP USAID we have obtained the empirical evidence, that intensity of involvement in corporate vocational training are significantly differentiated depending on whether respondents are involved in childcare, or not. In addition, such differentiation applies much more to women than men: there are indications that having children is a much more powerful risk factor for women to be outside of corporate vocational training programs than for men.

Our results have evidenced that for respondents taking care of children in a single-parent family, there is a significantly lower intensity of involvement in vocational training. The vast majority of such respondents (who take care of children in a single-parent family) are women, but for the few men who take care of children in a single-parent family, the most radical differences in the intensity of involvement in vocational training activities were noted.

Conclusions: Such results may be applied for development policy of inclusive employment in the energy sector and would promote better understanding from developed countries about the challenges and problems, which faced personnel of energetic enterprise and policymakers in Ukraine, to Ukrainian partners in energetic reforms.

OP 4.2 - Women's urban livelihoods in the context of COVID 19 in Harare, Zimbabwe

5. Diversity and gender in sustainability initiatives

Manase Chiweshe¹

¹ University of Zimbabwe

Introduction: This paper explores the lived experiences of urban women in low-income spaces with COVID 19 restrictions in Zimbabwe. The paper argues that women in diverse social spaces were affected differently by COVID 19 lockdowns in terms of their access to livelihoods and survival. This paper explores the lived experiences of urban women in low-income spaces with COVID 19 restrictions in Zimbabwe. Utilising an intersectional lens, it provides a radical analysis of how space and restrictions operate in a gendered way to produce differentiated livelihood impacts of a pandemic.

Methods: In terms of research methods, the research utilised a qualitative research approach which focused on in-depth interviews, key informant interviews and desk research. It included interviews with 30 women in two low-income suburbs including young women, women with disabilities, women in informal sector, sex workers, working women and married women.

Results: Because of pre-existing gender inequalities, deep-rooted discrimination and feminized poverty, the multifaceted consequences of the current Covid crisis have impacted women more than men, while at the same time placing increased responsibilities on women's shoulders. Women's livelihoods were negatively affected by COVID 19 leading to some participants noting they were suffering from 'povid' (poverty + COVID 19). The study found that the lockdown affected the women's lives and livelihoods mostly in the negative. This is mainly so because the lockdown was abrupt, hurried and not well planned such that these had not anticipated it in anyway. From the research most women with disabilities highlighted that they survive on begging, vending and handouts that they get from support organizations. Others explained that they are mainly dependent on their husbands who go to work for survival. With the coming in of the lockdowns these livelihood options were heavily affected which eventually plunged them into abject poverty. Most of these participants highlighted that 21-day lockdown was put in place which limited travel and made sure that movement was limited to the radius of 5km only.

Conclusions: The paper concludes that the geographies of exclusion and vulnerability structured by roadblocks, police raids, imprisonment and various other state sanctioned violence within the urban spaces have intersected with domestic spaces to exacerbate women's vulnerability. The responses took on a 'one size fits all' approach that did not take into consideration of unique and contextual challenges faced by women in low-income communities. It did not take into consideration the intersectional challenges facing women in diverse contexts.

OP 4.3 - Gender-based climate change adaptation and disaster risk reduction in Cambodia's local fishery and forestry communities

5. Diversity and gender in sustainability initiatives

Monin Nong¹

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¹ Cambodia Development Resource Institute

Introduction: Cambodia is extremely susceptible to the impacts of weather variabilities. Local women are more vulnerable to changes in weather and risky to disasters due to poverty and low education, poor health linked to pregnancy and childbirth, lack of decision-making power, and high fertility rates. Gender aspect is more important for social inclusiveness than gender needs, and women's roles are carefully considered in the research towards policy implications.

Methods: The objectives are to understand the root causes of gender-based vulnerabilities to climate hazards and disaster risks and identify existing coping strategies of local women and men and finally suggest affordable and practical adaptive measures for local women in selected cases of fisheries and forestry communities. The study employs participatory action research and the combination of quantitative and qualitative and gender-sensitive approaches in designing the research methodology and tools. The data collection comprises both secondary and primary sources of a wide range of national secondary data and various types of interviews of key informant interviews, focus group discussions and in-depth interviews.

Results: The study found despite the distinct sensitivity and exposure both communities were confronted with, local women's capacities to cope with the adverse impact of climate change adaptation and disaster risk reduction are relatively low. It witnesses both local women applied the autonomous adaptations which are an unsustainable strategy and reactive and short-term responses oriented towards survival, usually motivated by the emergency while the planned adaptations, which is considered as an ongoing strategy that enables them to sustain both their livelihoods and the environmental resources, they rely on are quite negligible.

Conclusions: The study suggests that the improvement of awareness-raising on climate change and disaster risk reduction to local women of fisheries and forestry communities is very crucial at the moment compliant with the participatory action research tools towards strengthening local governance in terms of women's engagement and participation. Local women need different types of provisions to maximize their benefits. Future related programs and interventions could improve the engagement of the women before, during, and implementation. At the same time, local women, in particular, require specific forms of support to ensure they can fully advantage the climate change adaptation and disaster risk reduction programs. The number of local women participating needs wisely taking into account and ensuring that projects are gender-responsive and related to diversified sources of income for climate resilience and improved resource access.

OP 4.4 - Layers of Inequality: Gender, Medicalization and Obstetric Violence in Ghana

5. Diversity and gender in sustainability initiatives

Abena Yalley¹

¹ University of Konstanz

Introduction: This study interrogated how gender inequality in health systems and care influences women's experiences of obstetric violence in Ghana. Obstetric violence, conceptualized as the mistreatment and abuse of women during pregnancy and delivery is a major challenge with devastating psychological and health implications, including death. Obstetric violence reduces women's trust in health facilities and is a major disincentive to women's use of obstetric services which provide appropriate management of maternal and neonatal complications, thereby increasing the risks of maternal and child mortality. Empirical studies on facility-based birthing in Ghana have revealed gross human rights abuse and mistreatment associated with institutional deliveries. Although the negative impact of obstetric violence on women's health has been well documented, little is known about how unequal gender relations and inequality in health systems contribute to the abuse and mistreatment of women during delivery. Using the qualitative research methodology, this study examined the gender inequalities in health systems and the medical profession and interrogated how they contributed to women's experiences of obstetric violence in Ghana.

Methods: Specifically, in-depth interviews were conducted with 30 midwives in the Kwesimintsim polyclinic, Esikado government hospital, Disxcove hospital, Maternal and Child clinic and Ejura government hospital in Ghana. In addition, 30 women who have delivered in these hospitals were purposively selected and interviewed.

Results: The findings of the study revealed that although the health profession is highly feminized, there are huge structural inequalities that kept women in a lower position in the health system's hierarchy. Women's roles and positions were therefore demeaned including midwifery. As a feminized department, the birthing and maternity sections in the hospitals were grossly neglected and under-resourced, thereby increasing the pressure on midwives. In a bid to exert the power and recognition deprived in the health system, midwives employed power and control during the delivery process. Withholding knowledge, abandonment, abuse, and mistreatment of women were major instruments of domination and control.

Conclusions: The study concluded that structural inequalities in health systems and practices greatly affected the kind of maternal services women receive and recommend that gender-responsive approaches that address structural inequalities in health systems are crucial in dealing with obstetric violence in Ghana.

Oral Presentation Session 5: Frameworks and integrated water and sanitation management

When: 2022-08-22 **Time:** 13:30 - 14:30 **Location:** TBD

Moderators: Sahar Dalahmeh and Arun Kumar

OP 5.1 - Developing a pragmatic framework for indexing groundwater governance under stress: initiative on groundwater sustainability in the Lower Mekong Region

3. Sustainable water management and sanitation systems

Saurav KC¹

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Introduction: Groundwater plays a crucial role in the water security, poverty reduction, and sustainable development of the Lower Mekong Region (LMR) countries. The hidden resource is being extensively exploited to supplement the deficiency of other freshwater resources, and the various climatic and non-climatic stresses have catalysed the process. Furthermore, insufficient baseline information on existing provisions, disparities and requirements for good groundwater governance and fragmented groundwater management strategies with other attributes of socio-economic developments has led to its unsustainable management in the region. So, this study recognises the key stresses to groundwater in the region and develops an assessment framework for indexing the current state of groundwater governance.

Methods: The study employed a participatory multi-stakeholder consultation approach for identifying the key stresses to groundwater and a literature-based (policies, legal and institutional frameworks, reports, and peer-reviewed articles) qualitative methodology to develop the pragmatic framework for evaluating groundwater governance. The multi-stakeholder workshop consisted of participants representing government agencies, international research organisations, academic institutions, the private sector, and youths performing research in similar themes at LMR.

Results: The result of the study shows that climate change and urbanisation (land-use change, demographic change, and water demand change) are the key stresses to groundwater in the fast-growing cities of the LMR. Furthermore, the developed assessment framework consisted of 4 dimensions: “technical, legal and institutional, cross-sectoral policy coordination, and operational” and 30 indicators aligned towards components groundwater governance and addressing climate change, urbanisation, and inclusiveness in the governance mechanism. Each indicator in the framework shall be rated from 0-3, indicating non-existence level to optimum level, respectively, based on 2 variables, “adequacy of existing provision” and “capacity for implementation”. Additionally, the aggregation equations accumulate the pre-normalised rated variables to obtain Groundwater Governance Index (GGI). The GGI represents the current state of groundwater governance, providing the current provisions and gaps.

Conclusions: Groundwater sustainability plays a significant role in LMR and auditing the baseline state of groundwater governance under stressors support preparedness and informed decision-making. The pragmatic framework from the study is developed so that it reflects the general situation of groundwater governance in the context of key stresses. Further, the framework shall be convenient to decision-makers and practitioners in rendering the existing state of governance under

multiple aspects. Ultimately, the individual appraisal of the current state of governance by the countries in LMR shall facilitate the expansion of joint-action strategies for sustainable development and management of groundwater, internally and internationally.

OP 5.2 - Piloting the “Clean and Green” framework for rural productive sanitation – base line study results from three villages in Burkina Faso

3. Sustainable water management and sanitation systems

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¹ Stockholm Environment Institute

² WaterAid-BF

Introduction: Many rural sanitation interventions have a narrow focus on toilets and handwashing. However, emerging research shows a more comprehensive approach is needed to target the multiple pathogen pathways in the local environment, with increased focus on e.g., animal excreta, food/water hygiene and child feces. Similarly, resource recovery and reuse of human excreta is just one piece of the local resource puzzle, where also animal dung and urine, grey water, organic waste, and wood ash together make up substantial resources that could enhance agricultural production and sustainability. However, there is currently a lack of implementation frameworks supporting such integrated risk and resource management, leading to un-coordinated and partial interventions. A new implementation framework, “Clean and Green” (C&G), aims to fill this gap by combining the advantages of the community engagement of the CLTS approach with the systems view of ecological sanitation, focusing on progressive risk and resource management in the domestic environment. SEI and WaterAid are piloting C&G in Burkina Faso 2020-2022 in three villages as an action-research component of a larger conventional rural sanitation program.

Methods: A baseline study was carried out in 2021 using a survey administered to 381 men and 386 women in the three target villages as well as three control villages. The aim was to better understand perceptions and practices to inform the intervention and to later enable an impact evaluation on indicators linked to health, agriculture, and gender/equity.

Results: Farming is the main activity for almost all households, producing 200-250 kg grain per person/yr (average values per village) which is barely enough for subsistence. Soil fertility is declining according to 89-100% of respondents and 95-100% would like to produce more compost than today with 92-98% also expressing interest to test the safe recycling of urine and feces. However, respondents assigned a low value and high risk to human excreta in contrast to the high value and low risk perception of animal excreta. This low-risk perception of animal excreta in combination with >98% of households owning livestock and keeping them in the domestic area call for measures to reduce zoonotic pathogen exposure.

Conclusions: Survey results show the relevance of managing a wider range of risks and resources in the household environment, requiring innovative and integrated practices. During the pilot intervention, we will monitor indicators related to health and agricultural production to evaluate the impact of the C&G implementation framework and potential for scale-up.

OP 5.3 - Collaborative Governance and Governance Principles of Natural Resource Management: Water Management in the Lower Mekong Basin

3. Sustainable water management and sanitation systems

Patchara Jaturakomol¹

¹ University of Bath

Introduction

Governance principles of collaborative governance and natural resource management have not received much empirical scrutiny in terms of outcomes. This study subjects the principles to robust empirical tests, with the Lower Mekong Basin and the Mekong River Commission as the setting.

Methods

The study employs mixed methods of inquiry (qualitative case-study method and a quantitative survey). Semi-structured personal interviews were conducted to gather qualitative data from local residents and administrators and staff members of the Commission. A questionnaire using a 5-point Likert scale was utilized to obtain quantitative data from the panelists and attendees of the 9th Regional Stakeholder Forum held in Luang Prabang, Lao PDR in late 2020. The stakeholders (attendees) were placed into one of three groups: government/public sector, private sector, and civil society organizations.

Results

Qualitative analysis reveals that there are communication problems. The local communities have to rely on word of mouth because they lack relevant information that should have been provided by the state. Interviews also reveal a widespread experience of the destructive effects of a dam on the landscape, water quality and conditions, the quantity and variety of the fish population, and unpredictable seasonality. These grievances are largely ignored by the authorities.

All three groups of stakeholders are in moderate agreement with regard to the three and five dimensions of the Commission's collaborative practice. Additionally, they endorse all eight governance principles. The views of the three groups of stakeholders differ significantly with regard to the degree of the Commission's effectiveness and efficiency. The public sector consistently gives the Commission a higher mark, while the private sector consistently gives a much lower score.

Conclusions

From the standpoint of policy, the Mekong River Commission needs to realize that its role and performance may not be shared by the others. It is imperative to have an accurate understanding of the stakeholders (especially riparian residents), and it is crucial for the Commission to adapt its communication strategy to gain support of the stakeholders and member governments.

OP 5.4 -Understanding Water Governance in the Central Rift Valley of Ethiopia

3. Sustainable water management and sanitation systems

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Introduction

Rapid population growth and increasing demand for freshwater have increased the importance of water management and governance around the world. Water policy, a critical and integral part of water governance, helps to avoid water use conflicts and ensures equitable water distribution among users resulting in more efficient and sustainable water uses. The big and main water resources problem in Ethiopia is the uneven spatial and temporal occurrence and distribution. The Ethiopian Central Rift Valley (CRV) has a variety of water resources, which are sources for livestock drinking, ecosystem services, industry, municipality, and agricultural irrigation. However, these water supplies are under severe strain due to unbalanced human-water interactions. The growth of irrigation has increased the water demand in the region. This is exacerbated by unfair distribution of irrigation water in upstream and downstream irrigation water distribution, deforestation in the area.

Methods

The study was conducted in the CRV of Ethiopia in three districts. The study employed qualitative research approach. Participants of this study were stakeholders including officers, experts, development partners, NGOs, researchers, fishery associations, private company representatives and individual farmers/irrigators. 26 key informants' interviews (KIIs), 6 in-depth interviews and 6 focus group discussions (FGDs) were held. The data was collected through face-to-face personal contact interviews, focus group discussions and field observations. The primary collected data were supported by secondary data collected from different sources. After transcribing both primary and secondary collected data, the data were imported into NVivo 11. Following this, all the imported data were carefully read and coded, and data analysis were undertaken qualitatively.

Results

Water resources governance in the CRV lacks integration with other resources such as land, soil, forests, and wetland management to protect and conserve these resources. Irrigators aim to exploit the available water resources to maximize current production, lack of integrated plan among relevant sectors, limitations of stakeholders' engagement on policy development, absence of incentives and other enforcement mechanisms were attributed for poor sustainable water governance. The current practices of irrigation water use in the upstream of CRV is characterized by grabbing available water resources. Participation of stakeholders in planning, implementing, monitoring and evaluation processes in water resources governance was not systematized. Consultation of stakeholders also lack enforcement mechanisms, consistent platform, and monitoring system. Traditional irrigation practices such as furrow irrigation and inadequate crop water requirement knowledge have exposed water resources for wastage in the CRV. Over abstraction of available water, cultivation of buffer zone, overuse of agro-chemicals and its erosion have caused decrease in depth and quality of Lakes. These all factors resulted in degrading the aquatic lives, decrease income of fishery communities, insecure water availability for different uses, and endangering the local communities' livelihoods.

Oral Presentation Session 6: Sustainable Water Governance & gender inequality

When: 2022-08-23 **Time:** 11:15 - 12:15 **Location:** TBD

Moderators: Neil Powell and Shozi Mendy Zibuyile

OP 6.1 - What evidence exists on gender equality and social inclusion outcomes of WASH interventions? Insights from a systematic mapping of research evidence

3. Sustainable water management and sanitation systems

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Introduction: Safely managed water, sanitation and hygiene (WASH) services are viewed as fundamental for human wellbeing, enabling a range of positive outcomes related to health, education, livelihoods, dignity, safety, and gender equality. Awareness of the ways WASH can address inequalities has resulted in the implementation of WASH interventions that include mainstreaming of gender equality and social inclusion (GESI) considerations. Despite the wide range of GESI outcomes thought to be associated with WASH interventions, evaluation of this evidence is scattered across different sources. To support the design, implementation, and evaluation of WASH interventions and ensure they effectively address inequalities, this review aimed to collate and describe the latest research evidence on gender equality and social inclusion outcomes of WASH interventions.

Methods: Qualitative, quantitative, and mixed methods primary research published after 2010 in English, Spanish, and French, conducted in low- and middle-income countries was eligible for this review. We searched for academic and grey literature in 16 bibliographic sources, bibliographies of relevant reviews and 54 organisational websites. We screened records for eligibility using predetermined inclusion criteria. Metadata were extracted following a theory of change and narratively synthesised.

Results: Our evidence base included 482 studies containing a wide range of GSE outcomes in the context of WASH interventions. We categorised eligible GESI outcome themes into inclusive (i.e., safe water supply or sanitation facilities inclusive of the needs of all users) and transformative (related to power dynamics and social norms). Inclusive GESI outcomes such as the provision of safe WASH facilities, service quality and knowledge of WASH and similar, were common in our evidence base. In contrast, studies measuring the level of violence, education, economic empowerment, and participation and leadership in WASH services were less common. GESI outcomes were mostly reported for women or girls, but rarely for other social and gender identities (including people with disabilities, ethnic groups, gender minorities or similar). Only 21% of studied WASH interventions were designed to influence gender equality and social inclusion (via capacity building, creating participation and leadership opportunities, providing financial support and similar).

Conclusions: More research is needed to understand the transformational potential of WASH interventions. Wider use of GESI outcomes should be incorporated in intervention design and evaluation, for which greater cross-sector collaboration among engineers, public health and gender

practitioners is necessary. Future research should develop validated tools to monitor and measure (transformative) GESI outcomes.

OP 6.2 - Sustainable Water Governance under Public and Community Managed Irrigation Systems in Pakistan

3. Sustainable water management and sanitation systems

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Introduction: Climate change is expected to affect water security and agricultural productivity in Pakistan. Pakistan is facing huge water crises and unable to manage water shortages. Pakistan's 90 percent land is semi-arid and most of the land depends on canal irrigation system. Hence, a robust and resilient system is required to manage irrigation water resources. Therefore, this study was carried out to assess the impact of communication and external shocks on farmers' decisions and to compare the public and community managed systems for managing these resources.

Methods: Behavioural irrigation games were played, under irrigation dilemmas, with the farmers (who daily manage irrigation water) in Gujrat, to analyse their behavior and adaptability towards environmental disturbances due to climate change. Farmers from 'Saroki' village and 'Chookna Vali' village were selected through multistage stratified random sampling to play in groups to represent public and community managed systems. Total 50 farmers participated in this game experiment, divided into ten groups and each group comprising of five participants. Multi-level mixed effect linear regression was used to find the effects of communication and external shocks on investment and extraction decisions of farmers. The performance of both systems was evaluated through Ostrom's design principles for managing commons efficiently.

Results: The analysis results highlighted that the cooperation among farmers is enhanced by better flow of information and the farmers tend to maximize their personal gains under water scarcity conditions which testifies their rational behavior. The water scarcity also leads head-end farmers to exploit more than their fair share of water leaving tail-end farmers worse off and causing collective action and free rider problems. Moreover, it was found that mutual trust and individual earnings were the main determinants of farmers' contributions in infrastructure investments and consequently resource generation.

Conclusions: The external shocks applied in this study showed that the irrigation extraction was unequal with farmers at the head-end using higher proportion in the first round of game leading towards lower investments by the tail-end farmers making the whole system vulnerable.

The community managed systems were found to be more robust under water stress conditions. The collective water management was least popular with farmers in government managed systems. The findings also suggested higher efficiency and equity of water use in community managed irrigation systems.

OP 6.3 - Transitioning towards the Circular Economy - Direct urine capture for fertiliser use business case

3. Sustainable water management and sanitation systems

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Introduction: This project is a direct response to the food shortages being experienced in many communities by developing a simple technique to capture and concentrate nutrients from urine in the context of communities with non-sewered sanitation facilities, such as informal settlements, rural communities, and social housing communities. The economic feasibility that the production of a fertiliser directly from urine can be rapidly scaled and rolled out to interested communities across the municipality and throughout the country, would also be investigated. The roll-out of urine diversion dry toilets in eThekweni Municipality created the problem of what to do with the separated waste streams. Additionally, urine is an environmental nuisance in that urine contributes the majority of the nitrogen, phosphorus, and potassium that are found in domestic wastewater, but contributes less than 1% of the wastewater volume

Methods: Using available literature from the already proved concept, available South African data and conducting small-scale field trials where necessary was the methodology used. A hypothesised business case was conducted in the South African context, using eThekweni Municipality (Durban) as the study area. Stakeholder engagement from key players, plus conducting targeted small-scale agricultural trials and chemical analysis, assisted in giving a snapshot real-world context of the business case, to build a financing model in future. The study took place in one year.

Results: Transitioning to a circular economy within the South African water and sanitation sector is where the future of research lies, and it is already key priority research area. In that sense, the aims of the study were met in that the concept was proved and can be applicable in the South African context. A hypothesised business model was developed from available literature, available South African data (including stakeholder engagement) and small-scale field trials.

Conclusions: As this was only a relatively short desktop study, further research is recommended to ensure that what was found in literature can be implemented in the field. Any technology introduced needs to make economic and socio-technical sense in the South African context. Valorisation of the dry urine fertiliser mixture and of the food crops grown may be one of the selling points for this business model to be accepted. Changes in policy and regulations is necessary in order to align to legislature and sanitation standards that have been adopted nationally and internationally.

OP 6.4 - Evaluation of Stakeholders participation in Integrated Water Resources Management

3. Sustainable water management and sanitation systems

Rasford Malambo¹

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Introduction: Water when properly managed can constitute an instrument for socio-economic recovery and poverty alleviation. Business as usual in water resource management is not the way to overcome this problem. Water resource requires a new management paradigm that considers water not only from a holistic and multi-disciplinary perspective, but that, which seeks to fully associate all the different stakeholders into all the stages of the process.

I intend to focus and show the role of youth as important stakeholders in an integrated water resources management (IWRM) process in the Zambia (Upper Zambezi basin area). increasing populations and their associated activities are placing a high demand on very scarce water resources.

Methods: The study by White et al. (1972), a classic American study of East African water issues became a standard reference work for water-resource planners in the 1970s and 1980s (Woodhouse, 1995). Despite its specific focus on an integrated approach involving social issues, like water use, health, individual costs, and communities, it did not address the role of some key stakeholders participation such as women and youth in IWRM, except to note that in most African societies it is considered women's and children's work to carry water.

This study will hold that in order to adequately address water problems in the developing countries in the light of fast growing difficulties, we need to analyse and assess the roles played by the different stakeholders in the process, evaluate their contributions and importance to the process.

“Youth” and seek to increase the understanding of their role in a sustainable participatory development process such as IWRM.

Results: The aim of this study will be to present a case for highlighting the role of youth as important actors (stakeholders) for sustainable integrated management approach for a sustainable integrated water resource management and use in the Upper Zambezi sub-basin part of Zambia.

Conclusions: The conclusion will speak to the following: (i). Evaluate the use of a participatory approach in community IWRM in the Upper Zambezi sub-basin.

(ii). Analyse the potentials youth dispose and the contribution they can make in an IWRM process in the Upper Zambezi sub-basin.

(iii). Examine some of the constraints and challenges faced by young people in their contribution to a development approach such as water resource management in the Upper Zambezi sub-basin.

(iv). Recommend various Monitoring and Evaluation strategies through which effective participation of youth could be facilitated in water management process in the Upper Zambezi sub-basin.

Oral Presentation Session 7: Sustainability in light of COVID-19 and handling future pandemics

When: 2022-08-23 **Time:** 11:15 - 12:15 **Location:** TBD

Moderators: Helena Nordenstedt and Wendy Murillo

OP 7.1 - COVID-19 public health restrictions on older adults' well-being in Uganda: Psychological impacts and coping mechanisms

2. Shifts in sustainability in the context of COVID-19

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Introduction: Older adults across the globe have been particularly affected by the novel coronavirus due to their increased susceptibility to the virus. To date, very limited to no research however has explored the psychological impact of public health measures on the lives of older adults, especially those living in low- and middle-income countries (LMICs). The aim of this study was to explore how COVID-19 public health measures have affected older adults living in Uganda psychologically and how older Ugandan were coping.

Methods: Thirty semi-structured interviews were conducted with older Ugandans (aged 60+) in June 2020. Participants were asked about their experiences of public health measures, and how these have affected their lives compared to pre-pandemic.

Results: Three themes were identified: (1) Impact on emotional well-being; (2) Implications on physical well-being; (3) Coping mechanisms. Older adults felt psychologically affected in numerous ways, with restrictions appearing to have some first impacts on their physical well-being also. The lack of cognitive and social stimulation may lead to cognitive deterioration and encourages a great deal of being sedentary. This in return can lead to increased physical weakness and frailty, thus causing concerns for the long-term emotional and physical health of older Ugandans.

Conclusions: Public health measures need to be considerate of the potential long-term implications on the well-being of older adults in LMICs and high-income countries and ensure the possibility for continued physical exercise and social connection. This can be particularly challenging for people from more disadvantaged backgrounds who may not be able to afford a smartphone or laptop, with older adults further requiring support in using digital technologies

OP 7.2 - Green innovation, resource price and carbon emissions during COVID-19: New findings from wavelet local multiple correlation analysis

2. Shifts in sustainability in the context of COVID-19

Umer Shahzad

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Introduction: The COVID-19 pandemic has caused a new recession, financial collapse, disruption of supply chain, and resource consumption issues. Such fears of de-growth and recession call for strong and resilient management in the business, government, and healthcare sectors. The present study examines the association between energy innovation, COVID-19, oil price and carbon emissions at the global level for the period 31st December 2019 to 31st May 2021. There is currently meager evidence on the association of green innovation, carbon emissions, oil price and COVID-19, so we fill this gap in the literature

Methods: This work applies a fairly new and innovative method known as Wavelet Local Multiple Correlation (WLMC), introduced recently by Polanco-Martínez et al. (2020). The main limitation with the bivariate wavelet methods is that they cannot capture the interrelationship between more than two variables simultaneously, so Polanco-Martínez et al. (2020) introduced a multivariate version of the wavelet correlation. This method can analyze multivariate time series dynamically over time horizons, considering the time evolution that conventional statistical methods cannot do. Since the data of this study involve daily observations, the fluctuations and volatility of these variables can be captured through this method

Results: The study finds that the COVID-19 might enhance carbon level in the short run, while in the long run correlation empirics, it was found to mitigate the emissions. The findings are justified because lockdown policies take effect after a few weeks, and the sudden lockdown and restrictive policies in most parts of the world significantly reduce industrialization, transportation, production, and processing activities. The empirical findings further mentioned a negative association between COVID-19 and oil price, which might be due to the sudden surge in demand shock of the oil industry. In most bivariate and multivariate empirics, the empirical results are consistent and state the strong correlation between COVID-19, oil price, and green innovation.

Conclusions: In order to maintain green innovation and stable growth, there is a strong need for synchronized reforms and policies during and post-COVID times. With combined synergy, there is a need for socio-economic development plans at a broader scale and an ecosystem to encourage resource supply and low emissions. It is very prudent for the developed and developing countries, global environmental and financial organizations to constantly re-evaluate and re-assess the COVID-19 pandemic, environmental issues, and resource supply.

OP 7.3 - Regional pandemic governance: The role of sovereignty in ASEAN's Covid-19 response

7. Handling future pandemics

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Introduction: This paper investigates the role of national sovereignty for the regional governance of Covid-19 and future pandemics. The existing literature on global health and regional governance emphasizes that national sovereignty can pose an obstacle to managing infectious diseases. Yet, this literature generally employs a monolithic understanding of national sovereignty, and its nature and effects remain poorly understood. To address this shortcoming, the paper analyses the Association of Southeast Asian Nations' (ASEAN) response to the Covid-19 pandemic. ASEAN has reacted to the Coronavirus outbreak through a multitude of institutional initiatives that range from coordination fora and regional policy frameworks to plans for new agencies for the management of infectious diseases and financial instruments. However, actual regional cooperation has been uneven across these areas and several observers have criticized the response for being incoherent.

Methods: To provide a more nuanced understanding, this paper interprets ASEAN's multifaceted Covid-19 response as a result of Member States' parallel enactment of different *sovereignty scripts*. Drawing on sociologically inspired scholarship on national sovereignty in International Relations, it develops an analytical framework that distinguishes between four scripts that carry competing understandings of what a state must do to appear as sovereign. Using document analysis and interviews with a variety of stakeholders involved in pandemic management, it tracks how ASEAN has responded to the Covid-19 challenge and how the different initiatives and mechanisms correspond to the various scripts.

Results: ASEAN's Covid-19 response does not follow a singular cooperation logic but can be interpreted as policymakers' attempts to enact the different sovereignty scripts. These scripts differ with respect to the referent object of sovereignty (the state apparatus vs. the population) and the conception of autonomy (absolute vs. relational). Accordingly, they encourage different forms of regional cooperation, ranging from empty symbolism for political self-legitimation purposes to enhancing public health partnerships with international partners. The simultaneous enactment of these different scripts accounts for the multifaceted and partly incoherent nature of the response.

Conclusions: The multidimensional perspective on sovereignty advanced in this paper provides a counterpoint to research on health governance that understands sovereignty in a monolithic way as either constraining or enabling transboundary cooperation. Rather, practices of governing pandemics are shaped by complex and partly competing ideas about national sovereignty. Understanding and negotiating those ideas is a key competence for policymakers engaged in the management of Covid-19 as well as future pandemics.

OP 7.4 - Lessons learned during COVID19 pandemic in Ethiopia: what need to be done to be better handle for pandemics

7. Handling future pandemics

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Introduction: The COVID19 pandemic has caused severe disruption to the health system and unimaginable social and economic impact in low-income countries. Commonly, pandemics pass in low-income settings without being properly documented and drawing lessons that help to reduce the impact of future pandemics. This study was conducted with the aim of documenting lessons learned during the pandemic in Ethiopia.

Methods: The study utilized a qualitative approach supplemented by desk review which addressed nine major themes. Data collection was conducted at national, regional, and facility levels. A total of 102 in-depth interviews were conducted using a semi-structured interview guide. The interviews were audio-recorded and transcribed verbatim. A thematic framework analysis was conducted using Atlas to 7 qualitative data analysis software.

Results: The COVID19 response efforts were led by the Ministry of Health and the Ethiopian Public Health Institute. The involvement of professional associations, non-governmental organizations, academic/research institutions, and professionals from the diaspora was critical. The government responsibly and timely implemented a state-of-emergency however enforcement was compromised by cultural, social, and economic realities. Risk communication efforts were initiated timely but its effectiveness was challenged by the high volume of information and misinformation. Efforts to step up surveillance and contact tracing were hampered by a lack of capacity and resources. Infection Prevention and Control was enhanced by revising protocols, training of health workforce, and procuring IPC materials but the shortage of supplies and failure to adhere to preventive measures were challenges. Immediate actions were taken to establish treatment centers in existing facilities and by remodeling public buildings. However, facilities with well-functioning ICU were very low. The involvement of the private sector improved the availability of testing and treatment services. The protracted pandemic has also caused fatigue and burnout to the health taskforce. The Government procurement system was found to be not conducive to handling emergency procurements compounded by the lack of emergency funds. Domestic resource mobilization efforts and innovations to overcome supply shortages were encouraging.

Conclusions: The health system was overstretched to its limits by the pandemic and the human losses could have been tragic if not for its mild nature. Improving risk communication approaches, strengthening the human resource capacity and the health information system, establishing an emergency procurement system as well as emergency funds, supporting efforts to produce essential medical supplies domestically, and establishing a permanent advisory council need to be given serious considerations to better handle future pandemics.

OP 7.5 -Student health services' work in top 10 Swedish universities in relation to “global pandemic” of climate anxiety among youth

7. Handling future pandemics

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Introduction

In 2021, 77% out of 10000 youngsters from 10 countries covering both Global North and South, named their future “frightening” in relation to climate change (Hickman et al.,2021). At the same time, the problem of climate-anxiety is “only gradually beginning to show up in general health care” (Pihkala,2021), remaining rather new. Universities, that should act as “engine of transformational sustainability” (Verhoef&Bossert,2019) also do not meet climate-anxiety of student youth properly. What is the role of student health services (SHS) in transformation of climate/eco anxiety attitude from “a chronic fear of environmental doom” (APA definition,2017) to “an adaptive response to the threat of climate change” (Comtesse et al.,2021)?

Methods

Our hypothesis argued that SHS do not address sufficiently rising climate-anxiety cases within student communities in Sweden. As an initial surface level method to test this hypothesis, a comparative analysis of the top 10 most populated universities (Antal registrerade studenter,2021) in Sweden was conducted to compare the visual information available on SHS webpages. Comparative characteristics included availability of contact information, statistics/progress reports, anxiety identification procedures and terminology variations, advice and interventions on anxiety coping mechanisms.

Results

Our study shows that none of the SHS webpages mentions climate-anxiety. However, all SHS offer some form of contact information, advice and/or physical coping strategies against mental health issues such as anxiety, depression, stress, and worry, often with a focus on study-related stress and anxiety. The University of Lund’s SHS stands out as being particularly insightful in terms of information available and choice of interventions, yet still no mention of climate-anxiety. Moreover, no yearly reports or performance statistics are clearly accessible from any of SHS websites. Interestingly, five out of ten SHS utilized a common “lifestyle questionnaire” (Hospital Anxiety and Depression Scale, HAD) for interpreting depression and anxiety, although it is unclear how well such questionnaires are able to detect instances of climate-anxiety.

Conclusions

SHS within universities in Sweden are not properly addressing climate-anxiety as a mental health threat. More collaboration of SHS is needed with university sustainability initiatives (such as Gothenburg Centre for Sustainable Development), more information should be available to “legitimize” students address their climate-anxiety to SHS. Do universities realize a mission of developing supportive conditions to raise “agents of positive change” among student youth within university borders to combat climate change? Continuing education on emotional skills, multidisciplinary groups with eco-psychological expertise, and coping protocols are strongly needed under “global pandemic” of climate anxiety among youth.

Oral Presentation Session 8: Food safety

When: 2022-08-23 Time: 11:15 - 12:15 Location: TBD

Moderators: Johanna Lindahl and Luz de Regil

OP 8.1 - The association of socio-demographic characteristics and the dietary diversity among Thai elderly people

6. Sustainability along the value chains for food systems

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Introduction: Dietary diversity (DD) is an indicator of nutrient intake and is related to nutritional status in elderly people. Although there are many studies that determine the associated factor of DD in elderly people, the main of studies still confine in developed countries. Currently, limited study exists regarding factors associated with DD in elderly people in developing countries. Thailand is a developing country in Southeast Asia with one of the most rapidly growing older populations in the world. Therefore, Thailand represents the issue of elderly people in developing countries. this study aims to examine the association between socio-demographic characteristics and DD in Thai elderly people.

Methods: A cross-sectional study based on the fifth Thai National Health Examination Survey (NHES-V) conducted between 2013 and 2015 was performed. The NHES-V was a nationally representative survey using multistage, stratified sampling of the Thai population. A total of 7,300 elderly participants aged ≥ 60 years were included. The individual-level dietary diversity score (DDS) was assessed as the frequency of consumption of eight food groups using food frequency questionnaires. Each food group was scored from 0 to 4 according to the frequency of consumption. The DDS was calculated as the sum of the scores, ranging from 0 to 32. Socio-demographic characteristics, including age, sex, the highest education level, wealth index, living conditions, and residential area, were assessed. Data were analyzed using linear regression and adjusted for complex survey design.

Results: The participants had a mean age of 69.7 (SD 7.6) years. The mean DDS was 18.4 (SD 3.9). In the adjusted model, a higher educational level, a higher wealth index, and living in an urban area were positively associated with DDS, with adjusted β (95% CI) values of 1.37 (1.04, 1.70) for secondary education or higher, 0.81 (0.55, 1.06) for the richest group, and 0.24 (0.10, 0.44) for living in an urban area. Nevertheless, living alone had negative associations with DDS, with a β (95% CI) of -0.27 (-0.53, -0.00). However, sex and age were not significantly associated with DDS in the adjusted model.

Conclusions: This study showed that the higher educational level, the higher wealth index, and living in the urban area had a positive association, whereas living alone had a negative association with DD among Thai elderly participants. Interventions aiming to improve DD among elderly

people might benefit from targeting more vulnerable groups, particularly those with less education and wealth, those living alone, or those in rural areas.

OP 8.2 - Socio-economic and gender stratification of ultra-processed food consumption among rural adolescents: perspectives from Bangladesh

6. Sustainability along the value chains for food systems

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Introduction: Observational studies link consumption of ultra-processed foods (UPFs) with higher intake of refined sugar, added salt, saturated and *trans*-fats. The growth in UPF sales has stalled in high-income countries, while low- and middle-income countries (LMICs) are observing a marked increase in their availability. UPFs have started infiltrating rural food environments in LMICs and adolescents are major consumers of UPF. Nevertheless, little is known about the socio-economic and gender stratification of UPF consumption among rural adolescents. We aimed to explore the associations of household wealth and gender with UPF consumption in a birth cohort of rural adolescents from Bangladesh.

Methods: Data were collected through a household survey in Matlab – a rural sub-district. The analytic sample comprised 2463 adolescents. We assessed consumption of locally available UPFs arranged into four groups: ready-to-eat or “instant” foods; confectionery, sweets, and similar packaged products; savory snacks; and sugar-sweetened beverage (SSB) with a 24-hour, qualitative recall. This grouping was based on the NOVA system that considers extent of industrial processing and multi-ingredient (typically >5) formulation to identify UPFs. Prevalence of reported consumption was calculated and compared between groups. We employed logistic regression models to analyze the associations.

Results: Approximately 73% (71.7–75.2) adolescents consumed at least one UPF. Confectionery, sweets, and similar packaged products were the most consumed (53.5%), whereas SSB was the least consumed (12%) UPF group. Adolescents from the richest households had greater odds of consuming ready-to-eat foods (adjusted odds ratio (aOR) = 1.55; 95% confidence interval (CI): 1.12, 2.16) and SSB (aOR = 1.44; 95% CI: 1.02–2.03) compared to their peers from the poorest households. Boys had greater odds of consumption than girls for all four UPF groups. The association was strongest for SSB (adjusted odds ratio (aOR) = 2.57; 95% CI: 1.97, 3.37), followed by ready-to-eat foods (aOR = 1.85; 95% CI: 1.45, 2.38).

Conclusions: A socio-economic gradient was observed in consumption of two of the four UPF groups, possibly indicating the role of affordability for certain types of UPF. The role of gender was pre-eminent: consumption was more likely among boys across the UPF groups. This may expose them to a heightened risk of diet-related non-communicable diseases.

OP 8.3 - Food safety in the informal markets in the East Africa Community: Perceptions of key stakeholders in the food chain

6. Sustainability along the value chains for food systems

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Introduction: Five of the six countries in the East Africa Community are classified by the World Health Organization (WHO) under the AFR-E sub-region. This sub-region is the second highest in foodborne disease burden with 1,200 DALYs per 100,000 inhabitants. Unsafe food can have serious impacts on health and livelihoods of the people, as well as trade and economic development. Addressing food safety gaps requires participation of all stakeholders in the food value chain. The objective of this study is to analyse the perceptions of relevant stakeholders on status of food safety, food safety gaps in informal markets and discuss opportunities to improve food safety in the region.

Methods: This is a qualitative study involving the use of participatory methods. Burundi and Kenya have purposively been selected for the study, with defined informal market settings. The protocols to guide data collection will be developed in English and translated to Swahili (for Kenya) and Kirundi (for Burundi), and pre-tested before use in the field. Ethical approvals in line with requirements in each country will be sought. Informed consent will also be obtained from all participants prior to their involvement in the study. Data will be summarized and synthesized thematically. Statistical methods for handling non-normal data will be considered.

Results: The perceptions of stakeholders on status of food safety in informal markets and suggestions on priority value chains that should be considered for food safety intervention will be discussed.

Conclusions: This study will provide in-depth understanding of food safety status in both countries, as perceived by the stakeholders. The findings are expected to guide future research work and further inform decision making for policy development and donor investment.

OP 8.4 - An intervention to reduce household-level lead exposure from the food chain among pregnant and lactating women in rural Bangladesh

6. Sustainability along the value chains for food systems

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Introduction: Lead exposure is harmful at any age; it is especially detrimental, to the children's cognitive development during the pre and postnatal periods. Lead exposure is common in low- and middle-income countries and the adverse health effects may also be more severe due to a higher prevalence of micronutrient deficiency. When compared to fully nourished children, children with poor nutritional status, particularly calcium and iron deficiency, have higher lead absorption and metabolism. In rural Bangladesh, multiple household-level lead exposures may pose a risk to children's cognitive development. Turmeric adulterated with lead chromate was identified as a primary contributor to elevated blood lead levels (BLLs) among pregnant women in rural areas of several districts in Bangladesh.

Methods: Within a cluster randomized control trial of an integrated child health and nutrition intervention, we developed and evaluated an intervention to reduce household lead exposure among pregnant women and mothers of children <2 years. The primary aim was to raise awareness and reduce lead exposure from food stored in lead-soldered cans and turmeric contaminated with lead chromate, and the secondary aim was to increase consumption of calcium- and iron-rich foods. Based on formative research, we developed theory-based behavioural recommendations: avoiding consumption of polished turmeric, avoiding storage of food in lead-soldered containers, and increasing intake of calcium and iron-rich food. Trained community health workers delivered the intervention through group sessions and home visits. This intervention was implemented in 31 villages with 621 participants from October 2017 to May 2018. To assess the intervention, we administered an in-person household survey along with interviews and focus group discussions.

Results: We found that knowledge on a lead at endline was 50% higher in the intervention group compared to control (74% vs 24%, p-value <0.001). Prevalence of safe turmeric consumption was 15% higher (46% vs. 31%, p=0.01) and safe food storage was 14% higher (95% vs. 81%, p=0.005), and adulterated turmeric consumption was significantly lower in the intervention versus control arm (54% vs. 71%, p=0.009). Calcium and iron-rich food intake were also higher at the intervention arm. Qualitative findings revealed the barriers to practising the behavioural recommendations and how mothers negotiate with family heads to buy non-adulterated turmeric and calcium-iron-rich food.

Conclusions: The study demonstrates a group-based, community health worker-led, integrated intervention to pregnant and lactating women can effectively raise awareness about lead toxicity and bring positive changes in food intake practice among rural Bangladeshi women.

Oral Presentation Session 9: Inequalities and future needs in sustainable health and education

When: 2022-08-23 **Time:** 11:15 - 12:15 **Location:** TBD

Moderators: Mats Målqvist and Rhoda Wanyenze

OP 9.1 - The ethical involvement of LMIC governments in global health research: findings from a scoping review and stakeholder consultation.

12. Inequalities and future needs in sustainable development partnerships

Cai Heath¹

¹ University of Oxford

Introduction: Engaging with governments in low and middle-income countries (LMICs) before, during, and after health research is identified as a priority by many researchers to both improve health system capacity and inform evidence-based policy. However, multi-sectoral engagement with state actors in global health research is generally limited in terms of priority setting, direct co-production of research, and translation of evidence. There is a lack of data, both qualitatively and quantitatively, on co-productive research approaches that embrace the involvement and capacity development of government staff in order to improve research uptake, avoid the creation of parallel health systems, and ensure that research is harmonised with local need and strategy.

Methods: This oral presentation will present the findings of a scoping literature review and a currently ongoing stakeholder consultation exercise to investigate how and when global health research collaborations engage with governments along the research pathway, a focus of research that to date has seen little academic focus, especially from the 'state-side'. This DPhil study investigates the normative and practical challenges of health research co-production involving state actors with a focus on research design, decision-making processes and research uptake.

Results: The scoping review to date has highlighted the crucial importance of research design that considers: long-term sustainability of the findings; local leadership and ownership; power imbalances in both responsibilities and finance; partnerships and relationship-building threaded through the research process. Negatives associated with the co-production of research across multiple stakeholders are also highlighted, including increased resource and time intensity of co-productive approaches and risks of research becoming politicised or unscientific in approach. These themes are being investigated further through an online stakeholder survey which has ethics approval from the University of Oxford and will particularly aim to capture the views of non-academic actors who collaborate on global health research, namely policymakers and senior health systems staff in LMICs.

Conclusions: The outcomes of this study will provide insights into the barriers and enabling factors for designing global health research equitably and in a way that can maximise impact through successful connections with policy formation and capacity for national implementation through health systems.

OP 9.2 - Managing Innovation for Sustainable Health: a training model for public sector officials in fragile states to accelerate action on the 2030 Agenda

12. Inequalities and future needs in sustainable development partnerships

Karin Båge¹

Charles Batte², Linn Tomasdottter³, Mapatano Mala Ali⁴, Mohammed Alasow⁵, Rawlance Ndejjo², William Bertrand⁴, Daniel Helldén¹, Grace Ndeezi², Roy Mayega², Hassan Nur⁵, Jeilani Qasim Sayidii⁵, Tobias Alfvén¹, Rhoda Wanyenze²

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Introduction: There is great urgency for action to achieve the Sustainable Development Goals, especially in fragile settings. While these settings face acute yet complex challenges ranging from climate crisis to violence and extreme poverty, the public sector may be limited in its capacity to address these appropriately, with devastating effects on the health of people, communities, and environment now and in the future. Due to their complexity and urgency, the challenges to sustainable health require professionals that are trained in innovation for evidence-based action through multisectoral collaborations.

Methods: In 2020, Karolinska Institutet, Sweden, and Makerere University, Uganda, developed the Centre of Excellence for Sustainable Health (CESH), under which a new partnership was established with Benadir University, Somalia, Kinshasa School of Public Health, the Democratic Republic of Congo, and Tinkr, Norway to develop training on innovation for sustainable health. The aim of “Managing Innovation for Sustainable Health” (MISH) is to strengthen the capacity to contribute to achieving sustainable health through innovation in the public sector. It targets managers in Somalia, DRC and Uganda from the public and private sector, academia, and civil society. It is one year long, part-time and delivered online with one study trip. It features three modules covering Agenda 2030 and Sustainable Health; Multisectoral Collaboration and Implementation Science; and Innovation and Innovation Management. Integration of participants’ learnings into their professional role, mutual learning between participants, and an emphasis on applicability, all underpin the learning strategies of the program. Quality is monitored through expectation surveys, baseline mid and final impact assessments, module, and final program evaluations

Results: The program has trained about 50 managers, 85% of which say that the training was useful. Since the training, a few have been promoted; others have started to implement their action plans. A solid partnership has been developed between the individuals who coordinate, design, and deliver the training. All partners are represented in both operational and strategic organizational bodies of the program. The model is being tailored to fit similar projects and target groups, including a short version of MISH supported by Makerere University, and projects financed by SIDA.

Conclusions: There is momentum for higher education to leverage the opportunities of the COVID-19 pandemic and how societies have chosen to respond to it, by rethinking learning for the global challenges. Our model shows that this has been possible through relevant collaborative online learning delivered by partnerships defined by teamwork, trust, and a dedication to true impact.

OP 9.3 - Reversing the gaze: exploring sustainability from the vantage point of the global South

12. Inequalities and future needs in sustainable development partnerships

Timos Karpouzoglou¹, David Nilsson¹

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Introduction: Development research and interventions were for many years based on the assumption that rich countries had superior knowledge, solutions and expertise that could and should be transferred to "developing" countries. Strengthening capacity, institutions and scientists in low-income countries soon formed part of the agenda in order to increase their "absorptive capacity", create a more level ground for international research collaboration, and boost development. There is a growing need of placing the Southern hemisphere in the forefront in global sustainability research. However, little attention has been given to the advantages of collaboration with low-income regions in order to produce new insights with global relevance. In the global South, there are experiments and innovations which might well inspire new practises as well as alternative ways of understanding, and solving, sustainability challenges. Further, juxtaposition and distance may enable those in the north to see phenomena 'at home' differently. In this paper we explore some distinct aspects of what can be gained from research collaboration with the global South.

Methods: Our study draws on a series of research projects carried out in collaboration between researchers and students in and from India, Kenya, Sweden, Uganda, the United Kingdom, and the United States, that the authors are, or have been part of between 2015 and 2022. All projects focus on urban sustainable development and span several disciplines such as geography, anthropology, sociology, political science, and history and involve extensive field work. In this paper we take a synthetic and reflexive approach, mapping and discussing key outcomes and their implications from a methodological and research policy point of view.

Results: Results unsurprisingly include new empirical findings and typical outputs like papers and student theses, but also broadened networks, and training for young scholars in the global South. More interestingly, new theoretical and conceptual frameworks have emerged, such as "heterogeneous infrastructures", "critical interface" and "modest imaginaries". We discuss how these are relevant for sustainable development in urban settings across global geographies, not limited to developing countries. Through studying phenomena in low-income settings, we have been able to see new things beyond the stereotypical dichotomies of developed/underdeveloped and formal/informal and learn from - and with - the global South.

Conclusions: We argue that research in the global South, in collaboration with local actors, is a necessary academic endeavor in itself due to its inherent qualities and its potential for providing insights into sustainability challenges also in the global North.

OP 9.4 - Whose knowledge counts? Inequalities in evidence and learning and Global North-Global South partnerships.

12. Inequalities and future needs in sustainable development partnerships

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Introduction: Increasingly, the concept of ‘Evidence-Based Practice’ (EBP) features in discussions around sustainable development programming. EBP can be described as the process of integrating best available research evidence, with practitioner expertise, and targeted community preferences, accounting for context. The quality of evidence is assessed against a hierarchy of evidence, where systematic reviews, evidence synthesis and randomised-control trials are considered significantly more valid and reliable than case studies or other qualitative research findings. With a promise to generate evidence on ‘what works’, EBP is the latest product of the international development effectiveness and accountability discourse. Yet it is based on dominant epistemological values and understandings of what constitutes valid knowledge that may perpetuate inequalities across Global North-Global South partnerships. It also raises questions around the weighting and sequence of EBP’s different components, including whose expertise, knowledge and needs drive decision-making.

Methods: This paper contributes to the EBP discussion by critically examining how EBP impacts local agency, including what emerges in the dialectical process of power and knowledge in development partnerships, who is able to define how evidence is collected and applied, and who ultimately decides ‘what works’. The study utilises a qualitative research design comprising interviews but also ethnographic approaches, including auto- and meeting/event ethnography, drawing on the experience of the researcher as a development and humanitarian practitioner.

Results: Engagement with a range of experts - including academics/researchers, aid practitioners at the local, national, and international level as well as funders - will provide the data to analyse how they understand and apply concepts such as ‘evidence’, ‘knowledge’, ‘EBP’ and ‘expertise’ in their work. This will include the political use of evidence and problematic interpretations of who is an expert, and the difference between knowledge and ‘local knowledge’. Guided by critical, postcolonial and governmentality theory to examine processes of power and knowledge, the paper will pay particular attention to exploring acts of resistance as productive in challenging epistemological narratives, the construction of expertise, and governance and partnership structures within aid and development.

Conclusions: The paper will argue that in order to establish more equitable partnerships that encourages sustainable development for all, and bridges the research-practitioner divide, a stronger emphasis on the democratisation of evidence-based practice and the laying bare of structural inequalities among partners, is needed.

Oral Presentation Session 10: Migration's impact on health and development

When: 2022-08-23 **Time:** 13:45 - 14:45 **Location:** TBD

Moderators: Soorej Puthooppambal and Papa Sow Sow

OP 10.1 - Who moves and who gains from internal migration in Egypt? Evidence from two waves of a labor market panel survey

4. Migration, health, and development

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Introduction: Like many other developing countries, Egypt has witnessed rapid internal migratory movements during the past few decades fueled by urbanization together with associated environmental and socioeconomic changes. From a literature perspective, few scholarly studies have empirically examined the drivers and welfare impacts of internal migration in Egypt, despite the increasing recognition of its inextricably links to urban sustainability.

Methods: Using data from two waves of the nationally representative Egyptian Labor Market Panel Survey (ELMPS) conducted in 2012 and 2018 and consisting of 63,909 observations, we employed a Heckman two-stage modelling approach to examine the determinants and welfare effects of various internal migration streams: rural-to-rural, rural-to-urban, urban-to-rural, and urban-to-urban flows.

Results: We found that both the drivers and welfare effects of internal migration vary considerably depending on the migration stream, as well as the socioeconomic characteristics of the migrants. In particular, females were found to be much more likely to migrate from rural to urban areas, lending support to the growing literature on the “feminization of migration” in developing countries. The OLS regression results, after correcting for self-selection, make a strong case for the positive welfare gains from internal migration in Egypt. Specially, females and older migrants achieve higher welfare gains from internal migration. A comparison of the welfare effects between different migration streams shows that all migratory movements were associated with positive and statistically significant welfare gains, except for rural-to-urban migration that was surprisingly found to be associated with significant welfare loss for the migrants. Urban-to-urban migration was found to have the strongest welfare enhancing effects on all migrant groups.

Conclusions: Our empirical findings confirm the integral role that internal migration can play into the process of human development as well as in achieving the SDGs in developing countries. In spite of that, a deeper look at Egyptian population and urban development strategies reveals that they are often aimed at preventing or reducing migration. Egyptian policymakers should concern themselves with strategies that can maximize the potential welfare gains of migrants and society at large. Urban planning should incorporate an area-based understanding of potential migrants to characterize migrant groups, identify motives for various spatial movements, and include them in development plans. Local authorities in receiving communities and other stakeholders must also harness and

optimize the skills, experience, and productivity of migrants. Such policies will contribute to achieving SDG #11 aiming to “make cities inclusive, safe, resilient and sustainable”.

OP 10.2 - Gender Dimension and Environmental Refugees in Tanzania

5. Diversity and gender in sustainability initiatives

Victoria Makulilo¹

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Introduction: For the past decade, there has been an increasing magnitude of floods due to rainfall variability along the coastal zones of Tanzania. Repeated flooding occurrences in Dar es Salaam along the Msimbazi Valley provides evidence. The Valley has recorded floods in 2009, 2010, 2011 and from 2014 to 2020 consecutively. Floods have affected people and communities badly rendering them into temporary or permanent “*environmental refugees*”. Women and children are the most affected people during flooding events. Theories of migration explain human adaptations to climatic disasters like floods in either proactive migration or reactive migration. Various studies have shown that reactive migration increases not only vulnerability and poverty but also lowers levels of agency.

Methods: Through interviews and focus group discussions with affected communities the current study was conducted to investigate gendered experiences of ‘*environmental refugees*’ and assess gender sensitive strategies by individuals and government in reducing climate change impacts in Tanzania.

Results: The findings suggested that about 633 households were resettled at Mabwepande in 2011 following floods at Jangwani area; and most of these resettled households were composed of women and children. In some instances, men left women and children suffering after they have sold plots and houses in their refugee homes. Also, most of strategies and measures applied did not pay attention on the analysis of gender regardless of the fact that the most vulnerable group was women and children.

Conclusions: Floods have affected people and communities badly rendering them into temporary or permanent “*environmental refugees*”. Women and children are the most affected people during flooding events.

OP 10.3 - A Sustainable Solution or Just Humanitarian Assistance in an Alternative Way? Examining the Kalobeyei Integrated Refugee Settlement in Kenya

4. Migration, health, and development

Måns Fellesson¹

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Introduction: The Kalobeyei Integrated Socio-Economic Development Plan (KISED) in Kenya has gained much international attention due its assumed innovative way of promoting economic and social integration through greater opportunities for self-reliance, livelihood, and inclusion in national service systems for refugees and the host population alike. Guided by a development-oriented and sustainable approach to refugee hosting, the plan can be seen as an attempt to materialise the essence of the New York Declaration, the Global Compact on Refugees (GCR) and its implementation tool – the Comprehensive Refugee Response Framework (CRRF). As such it responds to the recognised concept of local integration as a durable solution in refugee hosting.

In view of the current contradictory global development in refugee movements, reception and hosting, the paper aims to shed light on the conditions and prospects for developing the KISED by examining the circumstances and interplays in two areas central to the idea of refugee/host integration – the legal framework and the composition of grounding socio-economic factors decisive to the issue of self-sufficiency and its close linkage to among other things food security, nutrition and health status.

Methods: The paper is based on empirical observations and meetings at site in Kalobeyei (in the role of UNHCR staff member), in-depth reviews of published policy documents, academic literature, and data on key areas within the two selected integrative dimensions which is analysed in relation to the objectives and envisioned development of the KISED.

Results: Through the lens of the current global displacement situation, the harshening refugee political climate and the historical context and practice of the durable solution of local integration in Africa the results display a fairly dark picture of the prospects for developing the KISED according to plan. Results display that the legal restrained framework has remained unmodified, that there is discrepancy between local and national policy levels, that there is limited international development support and not least that there is a mismatch between the operational requirements of the KISED and geographical/environmental realities - effecting the long-term nutrition and health status of the population of concern.

Conclusions: If the existing legal hindrances for societal inclusion remain unchanged and if the issues of livelihood opportunities and economic integration are not addressed realistically, the Kalobeyei settlement will have little prospect of benefiting from the sustainable and integrative solution envisioned by the plan but will, at best, remain an alternative to humanitarian assistance while awaiting repatriation or resettlement as durable solutions.

OP 10.4 - Analyzing the Impact of International Migration on Multidimensional Poverty in Sending Countries: Empirical evidence from Cameroon

4. Migration, health, and development

*Morelle Mape*¹

¹ Master Student in Economics

Introduction: The international migrants stock from Cameroon is growing every year since 1990s and the poverty rate has been almost steady between 1996 and 2014 and income inequality has globally increased on the same period (National Bureau of Statistics). The aim of this paper is to analyze the impact of international migration from Cameroon on multidimensional poverty in the country through a microeconomics lens.

Methods: Data from the 2014 national representative survey on the Living Standard Measure Survey in Cameroon realized by the National Institute of Statistics. The Alkire and Foster methodology is implemented to compute a multidimensional poverty index based on three dimensions and seven indicators. We use Rubin's 1977 causal framework to conduct the impact analysis in which we control the selection bias related to observable characteristics through the propensity scores matching technique and the selection bias due to unobservable characteristics thank to an application of the Heckman's double selection model procedure.

Results: We find that international migration negatively impacts the multidimensional poverty among households in Cameroon. Indeed, the rate of multidimensional poverty among non-migrant households 2.55 is per cent higher than the one observed in the international migrant households sub-group. The intensity of multidimensional poverty among poor households is also stronger in the non-migrant households compared to the migrant ones, meaning that migration negatively impacts the deepness of multidimensional poverty.

Conclusions: Migration policies from developing countries to the developed world should prioritize the sending of skilled population to enable migrants to assist more effectively the families' members left behind.

Oral Presentation Session 11: Multisectoral research and policy transitions in health and development

When: 2022-08-23 **Time:** 13:45 - 14:45 **Location:** TBD

Moderators: Claudia Hanson and Deepak Kumar

OP 11.1 - Hekima: participatory action research for inclusive policy transition in international development

11. Multisectoral research and policy transition

Billy Jones^{1, 2, 3}

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Introduction: International Development is a historically top-down field, where policies and experts “from above” often shape the development context unilaterally. Achieving the SDGs by 2030 requires a shift from top-down policies that conflict with local priorities to bottom-up solutions anchored in the lives of the world’s poorest. Understanding the sociocultural context in which solutions are presented is essential to ensuring they are relevant, inclusive and truly leave no one behind.

Hekima is a multisectoral research project tackling disconnects between academia, policy and local communities to promote inclusive, evidence-based policy transition. We put mobile camera technology in the hands of rural Kenyans to tell their own stories in their own way.

Academic research can facilitate bottom-up approaches to development; but the widening communications gap between academia and policy actually exacerbates disconnects. Research is typically defined by research agendas rather than the needs of people on-the-ground. Moreover, traditional approaches to dissemination - books and articles- don’t enable easy access to relevant research.

Methods: Our approach accelerates the research impact, improving cost-effectiveness and shaping Development narratives from the ground-up. By anchoring interventions in the lives of their recipients and orchestrating conversations between them and policymakers, our method allows the development context to do the shaping and foster genuinely transformative, bottom-up solutions to development challenges.

We collaborate with a duo of local researcher-filmmakers in Northern Kenya. Together, we co-create ethnographic shorts that raise awareness of key issues facing marginalised communities and highlight the bottom-up solutions they create. With local voices in front and behind the camera, indigenous knowledge drives the narratives and dictates what Development means as it shapes their lives.

Results: This project decolonise the research process, centering it around local voices. This enables marginalised communities to tell their own stories of resilience, adaptation, and Development.

A constant feedback loop between the on-the-ground researchers and academic researchers means we can discover and present insights in real time. This provides policy makers with the agility to react and adapt to changes on the ground as they happen.

Conclusions: By putting local voices and up-to-date changes at the center of policymaking, we enable targeted policy interventions. This significantly reduces the costs of misinformed policies as well as the costly monitoring, assessment, and reporting of policy interventions.

This approach works to bridge the gap between academia, policy, and local communities. Through

tailored communications and decolonising research, we foster ownership of Development narratives and promote inclusive, bottom-up decision-making.

OP 11.2 - A Multisectoral Approach to Sustainable Health and Wellbeing in Uganda.

11. Multisectoral research and policy transition

Irene Wanyana^{1, 2}

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Introduction: Since adopting the agenda 2030 for Sustainable Development in 2015, Uganda has made considerable progress towards achieving Good Health and Wellbeing (Sustainable development goal (SDG) 3). However, several health indicators are still below the targets in the National Development Plan III and SDG 2030 agenda. Given the limited time to the targets, there is an urgent need for innovative strategies and modes of governance to achieve the SDG targets. Like many other low-income countries, Uganda focuses most of its public health efforts on health-related interventions such as ensuring access to medical services. However, determinants of health outside the health sector affect good health and wellbeing. Therefore, it is critical to determine the vital role of multisectoral action in sustainable health. This study aimed to identify, classify, and document the strength of the connections between SDG 3 and other SDGs within the Ugandan context.

Methods: In October 2021, we undertook a two-day workshop in Kampala, Uganda, with stakeholders from government, private, civil societies organizations, and academia representing health and non-health sectors. During the workshop, 30 participants with knowledge of implementing different SDGs discussed and scored linkages between the SDGs. We analyzed the results using the SDG synergies framework to determine the strength (or weakness) of linkages between the different SDGs, focusing on health. The SDG synergies framework uses a seven-point scale from strongly restricting (-3) to strongly promoting (+3) to assess interactions. Results were presented using a Cross Impact Matrix and satellite diagrams to show synergies and tradeoffs.

Results: Our results indicated that in Uganda, SDG 3 is positively influenced by most SDGs but primarily Goal 10 (Reduced inequalities), Goal 1 (No poverty), Goal 2 (Zero hunger), and Goal 4 (Quality education). Thus, making progress on these SDGs could significantly improve Good Health and Wellbeing. On the other hand, progress on Goal 3 could positively influence Goal 1, Goal 4, and Goal 8 (Decent Work and Economic growth).

The results further revealed that Goal 10 had the most significant positive influence on all SDGs. Therefore, reducing inequalities in Uganda would significantly improve health and wellbeing. Other SDGs with a highly positive influence on other goals included Goal 11 (Sustainable Cities and Communities) and Goal 15 (Life on land)

Conclusions: Multisectoral approaches are critical in achieving good health and wellbeing for all; Governance and policymaking strategies should consider factors beyond the health sector boundaries when addressing SDG 3 challenges.

OP 11.3 – Implementation of Effective Practices in Childbirth: A Net – Based multi-sectoral capacity building program Ethiopia, Kenya, Malawi, and Somalia

11. Multisectoral research and policy transition

Helena Lindgren¹

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⁵ The Swedish Gender Agency

Introduction: During the 2020-21 academic year, the Swedish MIDWIZE care model, defined as midwife-led interdisciplinary care and zero separation between mother and newborn, was implemented in Ethiopia, Kenya, Malawi, and Somalia in a capacity building program funded by the Swedish Institute.

The aim of this study was to determine the feasibility of using an internet-based capacity building program contributing to effective midwifery practices in the labor rooms through implementation of dynamic birthing positions, delayed umbilical cord clamping and skin-to-skin care of newborns in the immediate postnatal period.

Methods: The design is inspired by process evaluation. Focus group discussions with policy leaders, academicians, and clinicians who participated in the capacity building program were carried out. Before and after the intervention, the numbers for dynamic birthing positions, delayed umbilical cord clamping and skin-to-skin care of the newborn in the immediate postnatal period were detected.

Results: Participants believed the internet-based program was appropriate for their countries' contexts based on their need for improved leadership and collaboration, the need for strengthened human resources, and the vast need for improved outcomes of maternal and newborn health. Data showed that midwives can work in interdisciplinary teams providing midwife-led care practices to women and newborns more effectively with internet-based capacity building and knowledge transfer of international and national guidelines between policy leaders, academicians, and clinicians.

Conclusions: The findings provide insight into the feasibility to expand similar online capacity building programs in collaboration with onsite policy leaders, academicians, and clinicians in sub-Saharan African countries with an agenda for improvements in maternal and child health.

OP 11.4 - Building Capacity for Sustainable Development in Fragile States -Spearheading a broader development agenda in Africa through health and well-being

11. Multisectoral research and policy transition

Nina Viberg¹

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⁶ Department of Disease Control and Environmental Health, School of Public Health, College of Health Sciences, Makerere University, Kampala, Uganda

Introduction

Although progress has been made, many complex sustainable development challenges still exist in fragile settings. These include high poverty rates, health challenges, gender inequalities, governmental instability, security issues, environmental degradation, and climate change. There is limited institutional capacity to handle complex development challenges and lack of public space for advocacy and mechanisms to hold governments and stakeholders accountable. The health care system is often the last functioning institution, albeit with challenges. The Sustainable Development Goals (SDGs) are interconnected and must be addressed through multisectoral action across societies where a broad range of actors can form a virtuous circle for positive institutional and societal change. This program strives to contribute to improved health and wellbeing, reduced poverty and gender inequality focusing on the most vulnerable to achieve the SDGs in DRC, Somalia, and Uganda.

Methods

This capacity building program uses a cross-sectoral approach to leverage institutional and societal change to reach the SDGs. The Inception phase was conducted May–Dec 2021 followed by the now ongoing project phase from January 2022–Dec 2023. Target groups are actors in public and private sectors, academia, and civil society organizations (CSOs). Activities include creating multisectoral platforms, multisectoral SDG-workshops, mobile-technologies to improve SDG data-collection and reporting, virtual platforms for SDG visualization and collaboration with CSO on SRHR information to young people.

Results

The intended impact is improved health and wellbeing, reduced poverty, and gender inequalities, with improved institutional capacity in Africa towards realizing the 2030-Agenda.

Expected outcomes:

1. Multisectoral cooperation, collaboration and knowledge-sharing is strengthened across stakeholders in health and non-health sectors.
2. Targeted public sector institutions are well prepared and positioned to work towards SDGs using a multisectoral approach in an effective, accountable, and transparent way.
3. Targeted CSOs are better prepared to contribute towards the 2030-Agenda including effectively promote and advocate for responsive and representative decision-making at all levels.
4. Targeted private sector actors are more aware of their role and actively strive to contribute to the implementation of the 2030-Agenda using a multisectoral approach.
5. Targeted academic actors are better prepared and positioned to collaborate and generate new knowledge and innovative solutions and to communicate to relevant actors for evidence-based action and policy making.

Conclusions

Core assumption is that improved knowledge on and attention given to SDGs through multisectoral collaboration, coupled with improved capacity for research and communication will strengthen ability to plan, implement, evaluate, and continuously improve innovative solutions towards the SDGs across the societies of DRC, Somalia and Uganda.

Oral Presentation Session 12: Inequalities and future needs in sustainable development

When: 2022-08-23 **Time:** 13:45 - 14:45 **Location:** TBD

Moderators: Marie Hasselberg and David Guwatudde

OP 12.1 - Exploring the science for development discourse: Swedish research aid 2009-2020

12. Inequalities and future needs in sustainable development partnerships

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¹ Linköping University

² Department of Thematic Studies - Environmental Change

Introduction: Support to science has been pursued as part of public aid agendas since the 1960's, with the goal to contribute to (sustainable) development directly and indirectly through research. The modes of support have varied over the decades and depending on donor. Some have emphasized the contextual specificity of knowledge production in their approaches while others have upheld the universal applicability of research results. Sweden was one of the pioneers to engage in aid to research. Previous studies show that Swedish research aid balances a contentious policy space between aid and science, and though it has received much praise, there is also a significant amount of debate concerning its past and present effects and organization.

Methods: Text analysis of annual reports, central evaluations and other key documents and interviews with former directors of the research unit at SIDA as well as other key informants.

Results: In this presentation, I discuss preliminary findings on the development of Swedish research aid discourse 2009-2020. I discuss how the policy has changed in relation to previously identified discourses (localist and universalist) in order to understand how the sociotechnical imaginaries have changed compared to previous decades and what these can say about current and future "North-South" research collaboration.

Conclusions: Work in progress. Conclusions will be presented in the presentation.

OP 12.2 - Accelerating Transformative Partnerships for Sustainable Development: Uncovering the Power of Representation

12. Inequalities and future needs in sustainable development partnerships

Marie Stissing Jensen¹

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Introduction: Multi-stakeholder partnerships have been promoted by the UN as an important part of the solution to implement the 2030 Agenda and the Sustainable Development Goals (SDGs). With the report from the General Secretary, Our Common Agenda, and its call to boost partnerships, there is an even stronger emphasis on this agenda. Since the 2002 World Summit on Sustainable Development in Johannesburg, there has been an evolving body of research on the effectiveness of partnerships, and since the 2012 Rio+20 summit also research on their legitimacy. This paper analyses the partnership agenda pursued by the UN by scrutinizing the governance of SDGs through

multi-stakeholder partnerships with a focus on power relations using governmentality as an analytical framework, thereby offering a new perspective to the existing literature on partnerships.

Methods: The analysis zooms in on the 2030 Agenda Partnership Accelerator, a collaborative initiative between United Nations Department of Economic and Social Affairs (UNDESA) and The Partnering Initiative (TPI) intended to support country driven Partnership Platforms for SDGs. Through a discourse analysis of the content on the website of the Partnership Accelerator, including handbooks, webinars, and assessment reports, the paper exposes the various ways in which multi-stakeholder partnerships are represented in the UN.

Results: The paper seeks to answer the questions: How are partnerships defined and categorized by the Partnership Accelerator, that is, how are partnerships represented by the UN? How do these definitions and categorizations affect the knowledge collected and disseminated about partnerships? What do these representations tell us about the power structures embedded in the Partnership Accelerator and the subjects (stakeholders) they aim to govern? And how does this affect the governance of the partnerships? It thus shows how these representations enable a certain kind of governance and hence the possibilities to use the acceleration of partnerships as a mode of transformation.

Conclusions: The result of the analysis suggests that more research is needed in order to identify how power structures play out in practice in the implementation process of UN's multi-stakeholder partnerships and how different stakeholders navigate these structures.

OP 12.3 - Designing Sustainability transformation pathways: A study to find balance between “Freedom” and “Justice”

12. Inequalities and future needs in sustainable development partnerships

SAURABH VIJ¹

Shauhrat Chopra¹

¹ School of Energy and Environment, City University of Hong Kong

Introduction: Conceptual basis of justice for global sustainable development (SD) issues remains unfounded. This situation creates vulnerability for players and continues to lead observations of unsustainability across the planet for different environmental, social, and economic issues. In this paper, we argue that if common values such as those reflected via UN SDGs are universally embraced at all scales of units (i.e., individuals, organizations, governments), along with a negative connotation, then utilizing collective intelligence systems theory, governing systems for sustainable transformations can be designed. Such reflexive systems can provide the required balance between freedom “to do and to be” and order of providing “justice” for all, while ensuring that negatively connotated outcomes of unsustainability (as derived from SDGs) continually reduce. The theoretical basis for such systems is proposed.

Methods: Study is conceptualized by performing a thought experiment, where value-based theories from psychology are used to establish a mathematical geometric basis for conceptualizing (a) conflict to highlight “freedom” to take action, and (b) order to highlight “justice seeking spaces” for the negative outcomes created by actions. The application of resulting developed theory is illustrated via two case-studies utilizing quantitative and qualitative data.

Results: The generated theory provides a normative structure, in which we identify four spaces where balance between freedom and justice must be sought - (i) Collective Weightage/Preference of

a SD issue (ii) De-incentivization for all units, creating effects (iii) De-incentivization differentiation for all units, creating effects (iv) Means of providing resilience and adaptability to the affected units
Conclusions: Calls for further research inquiries in the design of collective intelligence systems to achieve sustainable outcomes while ensuring freedom and justice for all are made. Also, policy implications of adopting the connotation of negative outcomes for SDGs, spatial scales as a basis to understand negative outcomes, and unification of all types of impact generating units (i.e., organizations, individuals, families) under one type of unit are proposed.

OP 12.4 - Connecting national ownership and local participation in aid recipient countries. The cases of Cambodia and Rwanda

12. Inequalities and future needs in sustainable development partnerships

Malin Hasselskog¹

Joakim Öjendal¹

¹ School of Global Studies, University of Gothenburg

Introduction: This paper is part of a project that challenges the assumption that national ownership is conducive to local participation. Examining previously underexplored links between two widely promoted approaches, it connects major debates in development thinking that have been conspicuously separated and, we believe, misconstrued.

Inequalities among the actors involved is a persistent concern in international development cooperation, and the ambition to establish more equal relations has resulted in recurrent calls for various partnerships. With the ownership agenda – at its height after the Paris declaration in 2005 – focus was on aid recipient countries' development priorities and policies being determined domestically, rather than by donor agendas. Local participation, meanwhile – promoted since the 1970s and part of the mainstream since the 1990s – refers to community members being actively involved in decree and design, rather than exposed to externally determined endeavors. National policy space is however constrained by donor preferences, as is the room for local agency in activities funded from outside the community. Also, we hypothesised, there exists a tension between national ownership and local participation.

Methods: The paper presents partial and preliminary results of a qualitative comparative case study of what happens to local participation as national ownership increases in two strategically selected countries. In Cambodia and Rwanda, national ownership is increasing, while local participation has for decades been advocated, not least through decentralisation and endorsement of civil society, partly funded by international aid.

Hence, in parallel fieldworks, we investigate how local participation in decentralisation and civil society fares in the process of evolving national ownership. Based on government and donor documentation and around 50 interviews, manifestations are traced of external influence and local engagement. Country specific qualities of national ownership and local participation are revealed, while comparative analyses illuminate the overall climate for local participation in situations of increased national ownership.

Results: Tentative results indicate that national ownership has come with – possibly contributed to – centralised and top-down policymaking, which has not provided for local participation. While there

are examples of complementarities between centrally derived policies and local agency, the overall pattern is that a focus on firm policy implementation has impeded local participation.

Conclusions: The much-celebrated principle of national ownership has seemingly been promoted under the naive expectation and/or ignorant assumption that it would be pursued in a democratic, participatory, and generally desirable manner. While representing efforts to decolonialise development cooperation, it is found to allow for suppression of local initiative and influence.

OP 12.5 -Theory of Common Conflicts: An Introduction

12. Inequalities and future needs in sustainable development partnerships

Saurabh Vij¹, *Apoorva Maheshwari*¹, *Shauhrat Chopra*¹

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Introduction

There is a convergence of sustainable development issues across the world. In this pretext of a society that values common outcomes, what kind of conflicts may arise, and how acknowledgment of such conflicts can shape our understanding of a new social order that is more “just” in nature, is the subject of our study. In this paper, we argue that if common values such as those reflected via UN SDGs are universally embraced at all scales of units (i.e., individuals, organizations, governments), along with a negative connotation, then utilizing collective intelligence systems theory, governing systems for sustainable transformations can be designed. Such reflexive systems can provide the required balance between “conflicts” that arise from the notion of freedom -to do and to be- and “order” of providing justice for all, while ensuring that negatively connotated outcomes of unsustainability (as derived from SDGs) continually reduce. The theoretical basis for such systems under the title “Theory of Common Conflicts” is proposed.

Methods

Study is conceptualized by performing a thought experiment utilizing Ajzen’s “Theory of Planned Behavior” to identify a list of common conflict types for sustainability issues that are modeled using simulation and scenario development method.

Results

The resulting model and the conflict types provide a normative basis, under which constructive conflict resolution approaches can be developed that can lead to cooperation and trust between societal members towards SD issues of common interest.

Conclusions

Calls for further research inquiries in the design of collective intelligence systems to support consistent sustainable outcomes achievement while settling of conflicts through constructive resolution are made. Also, policy implications of adopting the connotation of negative outcomes for SDGs, spatial scales as a basis to understand negative outcomes, and unification of all types of impact generating units (i.e., organizations, individuals, families) under one type of unit are proposed.

Oral Presentation Session 13: Urbanization and its impact on health and development

When: 2022-08-24 **Time:** 13:30 - 15:00 **Location:** TBD

Moderators: Syed Mosfhiqur Rahman and Luke Amadi

OP 13.1 - Lived experience as a means to more effective & sustainable access to ample nutrition for caregivers and their children in low-income urban settings

1. Urbanization and its impact on health and development

Mark Spires¹

Jane Battersby^{2,3}, Scott Drimie⁴, Jo Hunter-Adams², Yandiswa Mazwana⁵, Ermillia Mutombene⁵, Nomsa Ngalo⁵, Esther Nqakala⁵, Mmeli Shotshononda⁴, Corinna Hawkes¹

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³ Department of Environmental and Geographical Science - University of Cape Town

⁴ Southern Africa Food Labs

⁵ Community member / Co-researcher

Introduction: Many problems accompany urbanization in various parts of the world, one of which is limited access to nutritious foods, particularly for low-income households with young children. It has been shown that poor food access for these households is not simply a food systems concern, but rather a result of multiple actions taken by multiple government (and other) ‘systems’ (e.g., health, education, housing, sanitation, urban planning, etc.). The experienced effects of these actions, and how to potentially improve them, can be better understood from the perspective of those that experience them in these urban settings.

Methods: The Nourished Child Study (Feb 2020-present) is being conducted in two urban settings in the Western Cape Province of South Africa and is adopting multiple participatory approaches in seeking to better understand the lived experience of low-income community members (specifically female caregivers) in accessing nutritious foods for themselves and their children, and specifically what influences these practices. Research methods include one-on-one in-depth interviews with caregivers; photo facilitated WhatsApp group discussions; systems thinking workshops and learning journeys conducted with caregivers and local relevant government officials; and facilitated community mapping activities.

Results: Participatory approaches have revealed how actions resulting from multiple government systems influence participants’ abilities to access nutritious foods, e.g., poor solid waste management leading to rat infestations that affect households’ ability to store food. Consequently, participants themselves have mobilised to rectify these specific issues by combining, and then connecting with City Environmental Health Officials to begin to identify and advocate for more effective and sustainable solutions. Additionally, study participants have shared these findings with other local government officials through guided learning journeys in their communities and are directly engaging in official government process to define developmental priorities for the next five years.

Conclusions: Through participatory research approaches, resulting ‘lived experience’ evidence can improve existing government actions towards more effective and sustainable access to adequate nutrition, especially for caregivers and their children. Key to this is for researchers and government officials to work alongside community members to not only identify potential solutions, but also

potential avenues for implementation. For potential solutions to have higher levels of impact and be sustainable, this process should ideally be community-led and supported by researchers through research findings / evidence and existing networks with government officials and others (e.g., advocacy groups).

OP 13.2 - Contesting the urban space, economic Inequality and slum clearance in post-colonial Africa: the case of Lagos

1. Urbanization and its impact on health and development

Adedeji Ademola¹

¹ Obafemi Awolowo University, Ile-Ife, Nigeria

Introduction: Slum neglect, demolition, and the creation of new cities are now commonplace in urban calculations in contemporary Africa. However, the neglect of the subalterns who are a significant of urban residents in post-colonial Africa could deepen inequality as well as worsen environmental damages. This study interrogates the risk factors involved in the total abandonment of people living in slums in Africa and examines the forceful takeover and destruction of slums as well as neglect of the poor in shanties in the name of urban development.

Methods: Using the demolition of *Otodo-Gbame* waterfront and the Makoko slums in Lagos State, Nigeria, as a case study, this study utilizes the use of archival materials, a review of the literature from theoretical and secondary sources, non-participant observation as well as narratology

Results: The paper contests the claim that governments' forceful eviction of people living in slums in Africa is ineluctable to rid the cities of criminals and prevent outbreaks of diseases. The study offers some important insights into the nexus between urban development and the politics of space control and discovered that people living in slums have no human rights safeguards especially in the light of government forceful eviction in urban geography without adequate consideration or compensation.

Conclusions: The most interesting finding is that pronouncements in favor of slum dwellers are not respected and evidence reveals that victims descend further into poverty with an impact on overall economic equality and environmental damages.

OP 13.3 - Urbanization and legacy waste management - challenges, experiences, and recommendations

1. Urbanization and its impact on health and development

Arun Kumar Rayavellore Suryakumar¹

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Introduction: The early part of urbanization resulted in solid waste in open dumps in India, with no specific treatment. This open dumping led to un-controlled dumpsites, many of those are within the urban settlements as towns expanded to cities. The dumpsites were abandoned and turned into legacy waste, mostly due to having reached their capacities or due to protests by the people residing close by as urbanization expanded.

Proper closure of these dumpsites is critical in the context of the growth of the cities, as these dumpsites are unhealthy, environmentally unsafe, aesthetically unappealing and occupy significant prime areas.

This research aims at understanding the challenges of legacy waste and recommending possible technological options for their safe management.

Methods: Field visits were made to different dumpsites with semi-structured interviews held with the administrative and technical teams. The visits included cities with different capacities of legacy waste and how different management techniques were adopted. The various studies necessary for initiating technology selection was carried out, which included on-site investigations such as topological survey, hydrogeological investigations, aerial photography, ambient Air Quality Monitoring (AQM), solid waste assessment tests and soil quality assessment test; and off-site investigations included geotechnical investigation, water quality assessment (surface water and groundwater) and drainage path studies.

Results: Visits were made to 4 different legacy waste management projects. This included visits to Gorai, Maharashtra, Tirunelveli, Tamil Nadu, Panki, Uttar Pradesh and Kumbakonam, Tamil Nadu. The dump capacity varied from 0.13 mil tons at Kumbakonam to 2.34 mil tons at Gorai. The technological options studied were containment-closure, and landfill mining. The technical feasibility, complexity of technologies, land-use patterns, cost-benefit analysis, environmental impacts, social impacts, and compliance to the regulations was studied in detail.

Conclusions: Legacy-waste dumpsite poses a definite risk to human health and to the settlement around it due to a high level of contamination in topsoil, upper groundwater reservoirs, sediment, and surface water. The ecosystem is at risk with serious risk of spreading of contamination by surface water, upper groundwater reservoirs and by air to the surroundings. Further, there is an imminent risk to human settlement around the dumpsite due to landslides of unstable slopes. Both the technologies - landfill mining and containment-closure - offer positives and negatives, and selection of the technology depends on the quality of recyclables that can be mined and the size and distribution of the dump in the area. Appropriate mitigation measures have to be undertaken during and post rehabilitation.

OP 13.4 - What explains the Differences in Children's Health Outcomes in Slum and Non-Slum Areas in India?

4. Migration, health, and development

Zeeshan Zeeshan¹

¹ Shaheed Bhagat Singh Evening College, University of Delhi, New Delhi, India

Introduction: Urban populations have increased significantly in India, and it's growing fast, which involved rural migration to informal settlements (slums) within urban areas. Thus, fast expansion of slums puts more pressure on municipal corporations and makes it challenging to accommodate the increased population and provide the necessities. In general, slums in urban areas are densely populated. They lack quality housing, adequate living space, access to public services, quality of basic amenities, and a high prevalence of poverty along with poor sanitation. Thus, the expansion of urban slums challenges policymakers to address policies that help in improving the living conditions for people living in slum areas. Therefore, it requires a proper assessment of significant indicators of their standard of living and a deep understanding of associated characteristics that explain most of the differences in health outcomes compared to non-slum dwellers.

Methods: This study examines urban health challenges among children in slum and non-slum areas in 8 major cities in India – Mumbai, Chennai, Delhi, Kolkata, Indore, Hyderabad, Nagpur, and Meerut. We use the latest two rounds, i.e., NFHS-3 (2005-06) and NFHS-4 (2015-16) of the national family health survey (NFHS). We are more interested in seeing how the health parameters have changed over time and then decomposing what explains the most differences in child health between slum and non-slum areas. Hence, multiple regression analysis and Oaxaca-blinder decomposition techniques are utilized.

Results: Our results confirm that the variation in mother's education explains approx. 43-48 percent explained the gap between slum and non-slum child health indicators (haz and waz). On the other hand, the use and ownership of phones explain roughly 26 percent of the explained part of the gap between slum and non-slum child health. Variation in wealth attainment explains approximately 25 to 34 percent of the explained part of the gap between slum and non-slum child health indicators. Household age (being older) explains around a maximum of 7 percent of the differences in child health outcomes. While the socioeconomics background variables explain a small share of the gap. Our results indicate that from 2006 to 2016, child health has improved in both slum and non-slum regions, and the difference is merely small among the slum and non-slum children in recent year.

Conclusions: We conclude that most of the differences in child health outcomes between slum and non-slum children (HAZ and WAZ) are explained by mother education, access to phone, caste, household head age, wealth, and time trend.

OP 13.5 - Youth Time Banking as a sustainable approach to address poor garbage management in new and emerging urban centers in Uganda.

1. Urbanization and its impact on health and development

Robert Kibaya¹

Joan Nannungi¹

¹ Kikandwa Rural Communities Development Organization

Introduction: According to the World Bank, around the world, waste generation rates are rising. In 2016, the world's cities generated 2.01 billion tons of solid waste, amounting to a footprint of 0.74 kilograms per person per day. With rapid population growth and urbanization, annual waste generation is expected to increase by 70% from 2016 levels to 3.40 billion tons in 2050.

Africa is urbanizing more rapidly than any other part of the planet and its 1.1 billion citizens will most likely occur in cities especially slums. One result of a rapid urbanization is the problem of waste. With such a rapid urbanization in many African cities, it will be seamlessly impossible for waste to be collected without technology tools and dedicated human resource.

The delay to collect garbage by town or municipal council authorities due to lack of resource results in garbage decomposition at urban locations centers in Mukono District and this is causing a number of healthy-related issues.

The Youth Time Banking (YTB) concept is getting introduced in schools to engage the youths in garbage management and handling activities as they accumulate credit points based on time spent. The accumulated credit time points are then exchanged into education materials like books, pens, pencils, and school fees which are needed by the youth to carry on with their education. The YTB model is helping to create new workforce motivated by awarded education materials other than cash.

Methods: In January to March 2019, we visited 20 trading centers in Mukono district to assess how people were disposing off the garbage, how town and municipal councils were managing the collection and handling. We sensitized selected youths in the affected areas on how they could accumulate points depending on time spent on collecting, sorting, and disposing off garbage. The accumulated time points are then converted into education materials needed by the youths to carry on with their education.

Results: The introduction of Youth Time Banking in some schools is helping to create garbage management ambassadors in communities for a sustainable garbage collection and handling services at all levels. The new young workforce is being motivated by educational awards needed for their education other than cash.

Conclusions: The alternative to cash as means of awarding those involved in the garbage collection and handling services is key in ensuring a sustainable motivated workforce.

Oral Presentation Session 14: Technological and other innovations in low resource settings

When: 2022-08-24 **Time:** 13:30 - 15:00 **Location:** TBD

Moderators: Nina Linder and Yap Boum II

OP 14.1 - Older person's motivations to participate in the use of mobile smartphone App monitoring of hypertension in Uganda.

9. AI based technological leapfrogging for health and development

Florence Nakyonyi^{1,2}

Isaac Ddumba^{1,3}, David Kasibante^{1,4}, Fredrick Musiige^{1,4}

¹ African Research Center 4 Ageing & Dementia

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⁴ Kampala International University

Introduction: Cardiovascular Disease (CVD) risk factors such as hypertension and diabetes are more prevalent among the older persons. The CVD risk factors contribute to over 60% of NCD related deaths in later years. Therefore, urgent need for strategies to optimally monitor and control CVD risk factors is paramount in averting morbidity and mortality among older persons. A mobile smart phone App focusing on monitoring of hypertension could be an innovative tool to encourage. The study aimed at exploring older persons motivates for participating in eHealth monitoring of blood pressure

Methods: A cross-sectional research using a qualitative approach (HTN SmartApp Study). The study was nested study from the prospective study of "Testing the use of Smartphone App in control of CVD risk factors among older persons in Uganda". A total of 45 interview guides and 4 focus group discussions were conducted. The study included older persons with Smart phone, diagnosed with hypertension and he/she is on treatment. We employed semi-structured questionnaires for data collection.

Results: Eager to know about their Blood pressure numbers, benefits from other CVD risk reduction strategies, reminder to take medications, being functionally independent, daily check up their BP numbers, presence of individual at home and being the first cohort to participate in this trial, were some of the prominent motivators to participate in this trial. Although the design of the study could have influenced the reasons to participate in the trial, physical navigating of Mobile SmartApp independently could have been a great motivator.

Conclusions: Individual benefits and social networks motivated seniors to participate in this trial; such features should be put into consideration while conducting recruitment for older persons for future trials. Additionally, maintenance of level of independence and optimal control of hypertension emerged as a great concern among older person living alone.

OP 14.2 - Mobile microscopy and artificial intelligence can provide access to diagnostics of cancer and infectious diseases in resource-limited settings

9. AI based technological leapfrogging for health and development

Nina Linder¹

¹ Nina Linder, Department of Women's, and Children's Health, International Maternal and Child Health, Uppsala University, Uppsala, Sweden, Sweden and: Institute for Molecular Medicine Finland, University of Helsinki, Helsinki, Finland

Introduction: We have developed a method for point-of-care diagnostics in low-resource settings based on a combination of mobile digital microscopes and artificial intelligence (AI), with a broad potential application to infectious diseases and cytology/histopathology diagnoses. The small-sized microscope scanners are wirelessly connected via mobile networks for AI-based image analysis using deep learning.

Methods: We have assessed the usefulness of the new diagnostic method for detecting cervical atypia, soil-transmitted helminths (STHs) and malaria parasites in the following three proof-of-concept studies in Tanzania and Kenya:

1. A) screening of cervical smears (740 women with HIV at Kinondo Kwetu Hospital, Kenya) with the aim of detecting precancers for the prevention of cervical cancer
2. B) monitoring STH infections in primary schools in the Kwale region in rural Kenya (1,180 conventionally prepared Kato-Katz faecal samples)
3. C) malaria diagnostics using thin blood smears stained with 4',6-diamidino-2-phenylindole fluorogen (n=125) collected from patients with microscopy-confirmed *falciparum* infections in rural Tanzania, prior to and 3 days after initiation of artemisinin-based combination therapy.

Results: For cervical screening in rural Kenya, the method showed a sensitivity for detection of atypical cervical cells of 96-100%, with higher specificity for high grade lesions (93-99%) than for low grade lesions (82-86%). For detection of STHs with light microscopy as the reference standard, the sensitivity and specificity were 88.7% and 78.5 – 85.7%, respectively. For malaria diagnostics a moderately strong correlation was observed between the deep-learning-based thin smear analysis and conventional visual thick smear-analysis ($r = 0.74$, $p < 0.01$).

Conclusions: The mobile microscopy and AI-based diagnostic system provides a promising tool for access to advanced microscopy diagnostics at point-of-care in resource limited settings.

This means a significant step towards a more equitable and sustainable access to high-quality diagnostics in low and middle-income countries.

OP 14.3 - A simplified Yolo-v4 Tiny Deep Learning Algorithm for the Detection of Diabetic Foot Ulcers from RGB Images

9. AI based technological leapfrogging for health and development

Rehema Mwawado¹

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¹ Department of Social Sciences and ICT, Mizengo Pinda Campus College, Sokoine University of Agriculture, Katavi, Tanzania

² Department of Computer Science and Engineering, University of Dar-es-Salaam, Dar es salaam, Tanzania

Introduction: Globally, Diabetic Foot Ulcers (DFUs) are among the major sources of morbidity and mortality among patients with diabetes and are the leading causes of non-traumatic lower-limb amputations. They present a significant therapeutic challenge to DFU specialists, especially in developing countries where healthcare resources are limited, and the vast majority of patients attend health facilities at later stages of ulceration. Current clinical approaches to DFU treatment rely on the vigilance of both the patient and clinician. Less accurate assessment methods, time-consuming diagnostic procedures and relatively high treatment costs are among the limitations of the existing practices. Hence achieving rapid and accurate detection of diabetic foot ulcers from images through Artificial Intelligence (AI) is essential for digital diagnostic tools that are aimed to address the aforementioned limitations.

Methods: Thus, this work proposes an ulcer detection method that is based on a simplified version of the Yolo-v4 tiny deep learning architecture inspired by previous studies. It further trains the model on the simple network structure and reduces parameters, which makes it be suitable for developing diagnostic tools on mobile and embedded devices. To evaluate the proposed model, 20% of the training data is used for the validation set

Results: The F1 score from the conducted experiments using the ethically obtained dataset of diabetic foot ulcer images indicated that the proposed pipeline is capable of detecting DFUs in provided images with an average accuracy of 95% - an advantage that gives more insights on the possible application of the method in time-sensitive tasks that can assist clinicians.

Conclusions: The promising results from this work demonstrate the potential of AI in developing fast and accurate ulcer detection and classification models that can be further employed in imaging systems to assist in the diagnosis and monitoring of DFUs and also be validated clinically in the future to help diabetic patients in Tanzania and the world at large.

OP 14.4 - Improving Targeting and Scaling Up Mental Health Services in Ukraine through high-frequency data, combined with machine learning

4. Migration, health, and development

Anton Tovchenko

Mirella Hernani

Introduction: Mental health programs in low- and middle-income countries are rare yet need for them is allegedly high and rising. With limited resources, the core question when introducing new programs is whom to target and with which products to achieve highest impacts? Answering this question in the absence of reliable information makes delivering aid challenging. Official, recent, and ideally real-time records on mental health problems are rare, especially on the needs of children and adolescents. Conducting for explorative reasons surveys is often costly and unsafe (pandemic; wars).

Methods: In this presentation, we will focus on innovative approaches to predict mental health topics and target groups using data that already exist. Relying on data from social media, in combination with further data sources, we want to illustrate how high-frequency data, combined with machine learning approaches, can be used to identify target groups to quickly adjust and scale-up programs. We will outline the potential and limitations of using big, real-time data approaches for more efficient and reactive resource allocation decisions.

Results: So far, pilot research with Ukrainian adolescents draws from 3550 keywords and 45 million total unique searches over a period of one year from October 2020 to September 2021 and an analysis of 2134 posts from 100 Instagram profiles of teenagers. The results cluster core topics discussed by adolescents and are illustrated on an interactive dashboard. Further research focuses on the validation of the approach and the exploration of alternatives.

Conclusions: According to a UNICEF study based on big data, when adolescents seek psychological help online, they most often enter search requests for counseling in anonymous chats, the experience of other adolescents, online emergency psychological support, professionals and NGOs providing such services.

OP 14.5 - Effectiveness of mobile health education messaging on glycaemic control and retention into care among patients with type 2 diabetes in rural Uganda

11. Multisectoral research and policy transition

David Guwatudde¹

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Introduction: As the global burden of type 2 diabetes (T2D) continues to rise, health systems in many low- and middle-income countries are struggling to manage T2D. This is especially so in Sub-Saharan Africa (SSA) where health systems are already over-burdened with management of both communicable and other non-communicable diseases. Patients with T2D in underserved settings like rural Uganda face greater challenges due to low awareness on self-management and access to health facility-based care. Mobile technologies provide opportunities for innovative ways to improve provider-patient communication, self-management support, and facility-based follow-up for better glycemic control and retention into care. The project “Mobile health for Improving T2D Management Outcomes in Uganda (MOBILE-4T2D)” aims at developing a context relevant mobile application that can be used to remotely communicate with patients with T2D to improve provider-patient communication, remotely provide continuous health education, and support compliance to medications and self-management.

Methods: The project is being implemented in two phases in three rural districts in Eastern Uganda at eight primary health facilities. Phase I involved: 1) conducting in-depth interviews with health care providers in government and non-government institutions on T2D management, 2) interviewing patients with diabetes through key informant interviews and focus group discussions on knowledge gap areas, 3) literature review on health education messages for persons with T2D, 4) drafting the health education messages to be delivered via text messaging, 5) scheduling the health education text messages, 6) developing the mHealth application, 7) pretesting the messages with the mHealth application, and 8) finalising the messages based on feed-back from the pre-test. Phase II will involve conducting a cluster randomized trial to evaluate the effectiveness of use of the mHealth messaging application on glycemic control and retention into care among patients with T2D.

Results: Through a consultative process with various stakeholders, context relevant health education messages have been developed and scheduled for delivery on a mobile app to patients with T2D. A web-based mHealth application has also been developed and successfully tested in a sample of patients with T2D. After testing, final corrections were made in the application, and is now ready for use. Phase II is yet to be implemented.

Conclusions: Using a recursive consultative process, health education messages for patients with T2D have been developed, and the mobile application to deliver the messages developed. The project has developed a low-cost application that is easily adoptable to similar settings and has a high scale-up potential.

OP 14.6 - Purification of cotton waste materials for reuse through electrospinning

10. Circular cities and their impact on health and development

Pendo Bigambo¹

Mark Hitii¹

¹ Department of Mechanical and Industrial Engineering, University of Dar Es Salaam

Introduction: The recent significant change in lifestyle, fashion culture and abrupt population growth has led to an increased demand for textile fibers and clothing. Furthermore, the increased short fashion seasons has in turn increased fabrics waste generated annually. The existing waste fabrics disposal routes, mainly landfill and incineration are associated with emission of greenhouse gases hence environmental pollution. This study investigates the potential reuse of cotton waste through electrospinning process. Prior to dissolution, the waste cotton fabrics were purified in a sequential acid/dithionite/peroxide treatment to produce a white, dissolvable material.

Methods: Pre-consumer waste cotton fabrics (shirting, T-shirt, and denim material) were collected from different garment manufacturers in Tanzania.

To remove impurities from the materials, fabrics were treated using the combined effect of acid hydrolysis, sodium dithionite reduction and hydrogen peroxide oxidative treatments. The effect of the treatment on the materials were assessed by visually observing colour changes on treated fabrics and changes in weight of the materials.

The purified cotton fabrics were cut into small pieces (10 x 10 mm) before disintegration into their fibrous forms using a blender equipped with stainless steel blades. The fibrous materials were then dissolved in 0.5M cupriethylenediamine solution and the solubility of cotton was then determined by a 'filtration and oven-drying' method.

Molecular properties of the reclaimed waste cotton materials was determined by viscometry method described in literature.

Results: Visual assessment of the samples indicated that, the combined acid/dithionite/peroxide treatment, removed a significant number of dyes from the materials indicating the efficacy of the treatment in stripping colourants from the selected cotton materials. Furthermore, the treatment resulted to a weight loss of only up to 5.6%, indicating that, higher number of materials could be reclaimed from the waste cotton even after the complete treatment.

The treatment was also meant to break any chemical bonds formed between dyes or finishing agents and cellulosic hydroxyl molecules, providing a white cotton material with a significant reduction in crosslinking and increased solubility in solvents. Thus, dissolution of the materials in CED solution indicated that, up to 99.5% of the treated materials could be dissolved in the solvent suggesting the probable destruction of crosslinking bonds that could have been present on the untreated materials.

Conclusions: It is clear that, pre-consumer cotton waste can be treated by using combined acid/dithionite/peroxide treatment to give a white, dissolvable cellulosic materials which can be used as a feedstock for various applications including electrospinning into nanofibers.

Posters

Posters will be shared on our conference portal/webpage and some submissions may have created a short video. These videos will be shown before the plenary sessions on the 1st and 3rd day of the conference as well as online. **We encourage you to visit the conference portal where you can view the posters and post questions** to the poster presenters.

P.1 - Developing an approach for assessing urban blue-green spaces towards sustainable urban growth

1. Urbanization and its impact on health and development

Deepak Kumar

Introduction: Urban blue-green spaces provide us benefits in form of social, environmental, and economic values, but disparities often exist in the distribution and accessibility of these resources. Traditionally urban blue-green spaces are a consolidation of “blue-green infrastructure” within urban areas. Several urban features like parks, forests, gardens, visible water, such as parks, rivers, canals, reservoirs, ponds, lakes, fountains, etc. are categorized or considered under the blue-green spaces and these are very much crucial for various urban ecosystem services. These play a significant role for all stakeholders of the urban community. Thus, everyone must ensure the equitable number of blue-green spaces for all. Recently, several rules and regulations towards the safeguarding of urban blue-green spaces have been outlined.

Methods: The work presents a methodological framework to develop an approach towards sustainable urban growth with the help of urban blue-green spaces assessments. The current work has attempted to examine the linkage between issues of the urban blue-green spaces for restoring the required infrastructures.

Results: It can be utilised for all sustainable urban development for urban planning and design projects to play a pivotal role. The work emphasizes more to develop a methodological framework to analyze the urban blue-green spaces for augmentation with a theoretical framework. It is expected that the advancement of a problem cum objectives-driven approach will help to design an impact-driven approach for planned and concrete action.

Conclusions: The work emphasizes more to develop a methodological framework to analyze the urban blue-green spaces for augmentation with a theoretical framework. It is expected that the advancement of a problem cum objectives-driven approach will help to design an impact-driven approach for planned and concrete action.

P.2 - Solid-liquid separability and moisture boundedness characterisation of fecal sludge from different on-site sanitation systems

3. Sustainable water management and sanitation systems

Arun Kumar Rayavellore Suryakumar

Santiago Septien, Jonathan Pocock, Edwina Mercer, Farida Karambu Gitonga

Introduction: Developing countries primarily rely on on-site sanitation systems (OSS) to ensure the provision of basic sanitary services. OSS are effective fecal sludge (FS) containment systems that are water-sensitive, and low on CapEx and OpEx. However, the waste still needs to be managed safely. Solid-liquid separation is one of the important treatment processes to result in volume reduction and help minimize treatment costs. It is well documented for sewage sludge that moisture is present as unbound and bound moisture, bound by different physical, chemical and biological forces. However, there is limited knowledge for FS from OSS.

The research aims at investigating the solid-liquid separability of FS and the proportion of unbound and bound moisture in FS from OSS.

Methods: FS samples are collected from different OSS (Ventilated Improved Pit latrines (VIP), Urine Diverting-Dehydrating Toilets (UDDT) and Septic Tanks (ST)) from the outskirts of Durban, South Africa. The experiments included preliminary characterisation of FS samples, post which the experiments were Sludge Volume Index (SVI) and Specific Resistance to Filtration (SRF) to determine the settleability and filterability of the samples, and centrifugation and sorption isotherms to determine the boundary between the unbound and bound moisture.

Results: The samples exhibited settleability of $SVI < 40$ ml/g, with VIP samples as low as 18 ml/g. The samples exhibited filterability with samples in the range 2.2×10^{14} to 3.6×10^{14} m/kg. The zeta potential of the samples was in the range of -14.00 to -18.98mV. The Particle Size Distribution (PSD) concurred with the particle size of 70-80% in 10-1000 μ m. Centrifugation results showed the mean moisture reduction at 10.10-13.30% for VIP samples, 11.20-13.30% for UDDT samples and 15.10-17.50% for ST samples. The sorption isotherms indicated the boundary between unbound and bound moisture between 57-65% of Moisture Content (MC). From literature, this region corresponds to the peak of the sticky zone.

Conclusions: The samples exhibited excellent settleability with low to very low SVI values. However, they showed poor filterability, with the VIP samples extremely poor. PSD indicates high interstitial moisture between the flocs because of its size. Negative zeta-potential values indicate the negative charge of the sludge particles, attributed to bound vicinal moisture.

Characterisation of moisture boundness fractions was obtained from centrifugation and sorption isotherms with unbound moisture up to 57-65% MC. Some of the loosely attached bound moisture (interstitial) possibly gets removed due to the centrifugal force. Such knowledge on understanding the bound moisture fractions will enable improved designs for solid-liquid separation processes.

P.3 - Assessing values and norms related to gender and sexual and reproductive health and rights to guide Swedish development cooperation

5. Diversity and gender in sustainability initiatives

Anna Kågesten

Karin Båge, Jesper Sundewall, Helena Litorp, Bi Puranen, Olalekan Uthman, Anna Mia Ekström

Introduction: Development cooperation grounded in justice and a human-rights based approach has never been more critical to mitigate both the backlash and the lost momentum against sexual and reproductive health and rights (SRHR) in the wake of COVID-19, particularly in low-income countries. To be effective, development cooperation must consider discriminatory social norms and values; yet there is little data on norms and values related to SRHR and gender in low-income countries. It is also unclear whether official development assistance (ODA) for SRHR considers such values and norms in strategies and activities.

Methods: In a recent report for the Swedish Expert Group for Aid Studies, we collected and analyzed nationally representative data on norms and values in the three sub-Saharan African countries (Ethiopia, Nigeria, and Zimbabwe) collected via the World Values Survey. We combined this with a descriptive mapping of ODA for SRHR from SIDA between 2010-2018 to better understand its alignment with prevailing norms and values. Data were analyzed using descriptive and multivariable statistics, guided by a conceptual framework for linking SRHR norms and values with ODA for SRHR.

Results: We found that while SRHR norms and values vary across countries, the most discriminatory ones are those related to sexual and reproductive *rights*, such as the right to safe abortion, women's decision making, and the rights of lesbian, gay, bisexual, transgender and queer (LGBTQ) populations. In contrast, issues related to reproductive health (e.g., contraceptive access) remain less controversial. Norms and values did not vary by gender, and there were few differences by socio-economic characteristics. We also found that SIDA's ODA for SRHR has increased from 1,019 million SEK (MSEK) in 2010 to 1,603 MSEK in 2018; and that this ODA is increasingly targeting sexual rights and reproductive rights rather than health directly. While values and norms appeared to be increasingly considered in SIDA's project operationalization, current systems do not allow for routine disaggregation of ODA for SRHR, preventing systematic follow-up.

Conclusions: We present a set of recommendations to guide Swedish development cooperation for SRHR going forward. We argue for a more informed, long-term approach that actively considers and addresses social norms and values, based on local and contextual needs and expertise, to achieve SRHR for all as part of the 2030 Agenda. Doing so requires sustained commitments from development actors and more robust data and methods for follow-up of how SRHR ODA is allocated and to what extent social norms and values are targeted.

P.4 - Impact of gold exploitation on soils from Mama wassande area, Adamawa Plateau, Cameroon

6. Sustainability along the value chains for food systems

Sabine Danala Danga

Leopold Ekengele Nga, Dieudonne Bitom, Clarisa Vorster

Introduction: Cameroon is one of African countries with manifold natural and mineral resources. As a pillar of economy and development, these resources should allow Cameroon to become a middle-range income country by 2035.

The study area Mama Wassande, SE of Meiganga, is a "golden area" where Au is extracted by artisanal and semi-mechanized exploitation. Despite its economic contribution to the country's BIP, this activity is a source of environmental pollution, health hazards, deforestation and the destruction of farmland due to enhanced erosion. The present work aims to assess the level of physical degradation and metallic pollution of the environment, to aid environmental preservation and promote sustainable exploitation of mineral resources.

Methods: In situ investigations, pedological well-drilling and morpho-structural description of profiles were undertaken, and soil samples were collected.

In the laboratory, the main soil parameters pH and electrical conductivity have been analysed using standard laboratory procedures with a digital Ph meter and Conductivity Meter; XRD analysis to determine main phasis carrying trace elements; X-Ray fluorescence (XRF) analyses were carried out to determine major elements contents and trace elements concentrations were determined by complete dissolution and ICP-MS (inductively coupled plasma mass spectrometry). Results were compared to control soil, assessing the potential sources and impacts of contamination by heavy metals after gold exploitation.

Analytical work was done at the Department of Geology, University of Johannesburg, South Africa, on a Fellowship from the Organisation for Women in Science for the Developing World (OWSD).

Results: Field observations show that depending on gold mining techniques, artisanal mining sites are exposed to different risks: constant high risk of accidents through excavation, risk of collapse, landslides, and destruction of water resources.

Macro-morphological characterization reveals that soils are clayey, slightly compacted and porous. Mineralogical analysis show that they are mainly composed of quartz, kaolinite and muscovite, with some hematite, gibbsite, orthoclase, albite and calcite. This can be explained by the region's geology, dominated by granites, gneiss, and sandstones. The soils are strongly acid to moderately acid. Geochemical analysis discloses high trace metal contents (Cr, Ni, Cu, Zn, As, Pb, Cu and Sb), exceeding maximum levels in upper continental crust and in control soil.

Conclusions: This study show that despite its importance, mining is a significant source of physical degradation and metal pollution. Ongoing analyses (SEM; microprobe) shall determine which mineral phases adsorb Trace Metallic Elements, the mechanisms of their retention and release into the environment, and transfer into the nutritional chain.

P.5 - Prevention future pandemics: a comprehensive approach to reduce their impacts, the Latin American and the Caribbean experience

7. Handling future pandemics

Wendy Murillo

Introduction: The COVID-19 pandemic has generated the worst health crisis in more than a century. In addition to exacerbating the disease and causing death, it hit the world economy when it was already showing structural problems that compromised its capacity for growth and stability. It was a shock of great proportions in a trajectory that faced increasing difficulties in the economic, political, and environmental spheres. To build a post-pandemic future, a clear understanding of the threat and the crisis is needed.

Methods: Situational analysis of the health, economic and environmental impact of the pandemic.

Results: The pandemic has had a huge health impact in Latin America and the Caribbean, demonstrating the weakness, fragmentation, and inequality in health systems. It has had a devastating impact on the elderly and the most vulnerable in society, this includes healthcare workers. Despite the unprecedented speed with which highly effective vaccines were developed against COVID-19, their distribution and access have been highly inequitable. Currently only 3% of people living in least developed countries have received even one-dose COVID-19 vaccine. The pandemic has also highlighted the weaknesses in economic systems, technological and productive asymmetries, digital exclusion, unemployment, low production, and closure of small businesses. Global environmental degradation is increasingly, and the COVID-19 pandemic is one of the manifestations of the poor relationship between human activities and nature. Latin America and the Caribbean is no exception: the destruction and degradation of ecosystems due to economic and social activities affect the global environment.

Conclusions: Countries must implement financing mechanisms and innovative technologies to strengthen health systems, new health care models, and One Health platforms to promote conservation, animal and human health, and prevention of the effects of pandemics. The economies of the region must incorporate changes in the productive systems, promote great successful technological transformations, promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all. An intergovernmental alliance must be established to address the risk and reduce the impact on the planet so as not to contribute more to climate change. Conserving intact tropical forests improve fragmented ones. Improve the biosecurity of domestic and wild farm animals, especially when animal husbandry is close to large and expanding human populations. Develop a waste management plan. In general, to prevent the impact of future pandemics, a comprehensive approach must be generated to reduce health, economic and environmental impacts.

P.6 - Student health services' work in top 10 Swedish universities in relation to "global pandemic" of climate anxiety among youth

7. Handling future pandemics

Oleksandra Khalaim

John MacQueen

Introduction: In 2021, 77% out of 10000 youngsters from 10 countries covering both Global North and South, named their future "frightening" in relation to climate change (Hickman et al.,2021). At the same time, the problem of climate-anxiety is "only gradually beginning to show up in general health care" (Pihkala,2021), remaining rather new. Universities, that should act as "engine of transformational sustainability" (Verhoef&Bossert,2019) also do not meet climate-anxiety of student youth properly. What is the role of student health services (SHS) in transformation of climate/eco anxiety attitude from "a chronic fear of environmental doom" (APA definition,2017) to "an adaptive response to the threat of climate change" (Comtesse et al.,2021)?

Methods: Our hypothesis argued that SHS do not address sufficiently rising climate-anxiety cases within student communities in Sweden. As an initial surface level method to test this hypothesis, a comparative analysis of the top 10 most populated universities (Antal registrerade studenter,2021) in Sweden was conducted to compare the visual information available on SHS webpages. Comparative characteristics included availability of contact information, statistics/progress reports, anxiety identification procedures and terminology variations, advice and interventions on anxiety coping mechanisms.

Results: Our study shows that none of the SHS webpages mentions climate-anxiety. However, all SHS offer some form of contact information, advice and/or physical coping strategies against mental health issues such as anxiety, depression, stress, and worry, often with a focus on study-related stress and anxiety. The University of Lund's SHS stands out as being particularly insightful in terms of information available and choice of interventions, yet still no mention of climate-anxiety. Moreover, no yearly reports or performance statistics are clearly accessible from any of SHS websites. Interestingly, five out of ten SHS utilized a common "lifestyle questionnaire" (Hospital Anxiety and Depression Scale, HAD) for interpreting depression and anxiety, although it is unclear how well such questionnaires are able to detect instances of climate-anxiety.

Conclusions: SHS within universities in Sweden are not properly addressing climate-anxiety as a mental health threat. More collaboration of SHS is needed with university sustainability initiatives (such as Gothenburg Centre for Sustainable Development), more information should be available to "legitimize" students address their climate-anxiety to SHS. Do universities realize a mission of developing supportive conditions to raise "agents of positive change" among student youth within university borders to combat climate change? Continuing education on emotional skills, multidisciplinary groups with eco-psychological expertise, and coping protocols are strongly needed under "global pandemic" of climate anxiety among youth.

P.7 - Adapting to the effect of climate change on dengue fever infection and hotspot analysis in Nakhon Si Thammarat province, Thailand

8. Planetary and One health

Fatima I. Abdulsalam

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Introduction: The tropical climate of Thailand encourages very high mosquito densities in certain areas and is ideal for dengue transmission, especially in the southern region where the province Nakhonsi Thammarat is located. Although the Thai Ministry of Public Health adopted the WHO dengue control strategy, all dengue virus serotypes continue to circulate. Health officers and village health volunteers implement some intervention options but there is a need to ascertain the most appropriate intervention(s) regarding the environment and contextual factors that may undermine the effectiveness of such interventions.

The objectives are (i) to determine how change in environmental variables in southern Thailand affects the occurrence of Dengue and severe Dengue, (ii) to identify possible high-risk clusters by spatial-temporal modelling and, (iii) determine how individuals, communities, together with all stakeholders (using a community-based participatory approach) can adapt by preventing Dengue infections in high-risk areas to curb recurrent Dengue epidemics.

Methods: Statistical analysis tools such as Partial Least Squares Regression and Poisson Regression were used to explore the relationship between weather variables and reported dengue cases and identify the predictors that have a high and significant impact on dengue infection at the district level. Geographic Information Systems was used to analyse transmission hotspots and cold spots at the district level. Using a Multi-Criteria Decision-Making tool, different criteria of the intervention options were assessed and evaluated by community stakeholders.

Results: Results show that the risk of dengue incidence occurring during the rainy season is almost twice as high as that during monsoon. The filtered predictors that were locally determined to drive dengue occurrence are temperature, rainfall, cloudiness, and sea level pressure. Nabon was identified as a hotspot district, while Pak-phanang district was a cold spot for dengue fever incidence. For the decision-making analysis, the criteria deemed most important were those related to 'Public Health' followed by 'Social Impact' category. The consistent ranking of some of the intervention options suggests specific protective behaviors that may have remained effective and acceptable by the community and should continue to be promoted.

Conclusions: The research proposes the inclusion of the *Use of geospatial tracking for entomological surveillance* as an early warning alert and response system at the district and community level in addition to its already ongoing Dengue control strategies. Policymakers, local authorities, and factory owners should combine efforts to invest in implementing this intervention option, which will be financially beneficial especially to the economy of the rubber industry of South-East Asia.

P.8 - Exploring the One Health Perspective in Sweden's Policies for Containing Antibiotic Resistance

8. Planetary and One health

Jaran Eriksen

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Introduction: Antibiotic resistance is considered to be a major threat to global health. The main driver of antibiotic resistance is antibiotic use. Antibiotics are used in humans, animals, and food production and are released into the environment. Therefore, it is imperative to include all relevant sectors in the work to contain antibiotic resistance, i.e., a One Health approach. In this study, we aimed to describe and analyse Sweden's policies related to containing antibiotic resistance, from a One Health perspective.

Methods: The data collection was conducted during the second half of 2018, with an updated search in September 2020, by searching for key policy documents on antibiotic use and resistance through relevant government agencies' websites. A list of the documents we selected was sent to key stakeholders to ask if they knew of more relevant documents that could be added to our list. When saturation had been reached, twenty-three key policy documents related to containment of antibiotic resistance in Sweden had been selected. The documents were analysed according to the Walt and Gilson policy triangle framework, to present the context of a policy, its content, the policy process, and the actors involved.

Results: Sweden started early to introduce policies for containing antibiotic resistance from an international perspective. Systematic measures against antibiotic resistance were implemented in the 1980s, strengthened by the creation of Strama (the Swedish strategic program against antibiotic resistance) in 1995. The policies involve agencies and organisations from human and veterinary medicine, the environment, and food production. All actors have clear responsibilities in the work to contain antibiotic resistance with a focus on international collaboration, research, and innovation.

Conclusions: Sweden has had a long tradition of work for containing antibiotic resistance. The work started in separate sectors, but since 2000, there are policies in place with a clear One Health focus. The policies have clear aims with specific action points and responsible actors. International collaboration is key in the policies and the Swedish government aims for Sweden to be a model and to show leadership in the work to contain antibiotic resistance.

P.9 - Political economy analysis of adolescent mental health and well-being globally

11. Multisectoral research and policy transition

Olivia Biermann

Mariam Claeson, Stefan Swartling Peterson

Introduction: Introduction: Adolescents face enormous problems regarding their mental health and well-being. According to the World Health Organization, mental health conditions including depression and anxiety represent 16% of the global burden of disease among 10-19-year-olds. Suicide was the fourth leading cause of death among young people aged 15 to 29 in 2019. The burden of mental health morbidity and mortality are likely to have grown due to the COVID-19 pandemic. Although there is growing attention to the problem, efforts, and resources to strengthen adolescent mental health and wellbeing across sectors remain fragmented. A deeper understanding of the political economy of adolescent mental health could help to augment global and national political priority-setting, alignment, and collective action for impact at scale of adolescent mental health and well-being.

Objectives: To investigate key stakeholders' views and perceptions of adolescent mental health and well-being globally in terms of political priority of the issue, problem definition and positioning, and governance and coalition-building among stakeholders, and how this influences priority-setting and collective action.

Methods: First, we conducted a document review (of political and policy documents and reports) and a literature review (of peer-reviewed articles). Second, we conducted key-informant interviews with representatives from universities, international organizations and funding bodies from across the world. Third, we organised focus group discussions with adolescent advocates. Fourth, we observed public deliberations on the topic to inform and refine our data collection.

Results: Results: Data were collected between November 2021 and February 2022. The data will be analysed in the spring of 2022, applying a political science framework which considers (1) the problem definition (how actors understand the problem); (2) governance (quality of institutions actors have established to facilitate collective action); (3) coalition-building strategies (how actors engage networks concerned with other issues to advance attention and resources); and (4) framing (communication strategies and tools to transfer knowledge from experts to the public). The framework will help to identify multisector barriers, and strategies for addressing them.

Conclusions: The results will inform policy and priority setting, facilitate alignment across sectors and collective action for adolescent mental health and well-being. The results will inform case studies on the same topic in Brazil, Kenya, Norway, South Africa, and Uganda. Moreover, we will use knowledge translation tools to bridge the gap between our findings and decision-making, reducing fragmentation and mobilizing resources in support of multisector action for improved adolescent mental health and well-being.

P.10 - Preschool children's and the UN agenda of 2030: Developing, implementing and monitoring of a psychological intervention for pursuing desired behavior

11. Multisectoral research and policy transition

Muhammad Babar Shahzad

Introduction: In 2015, the world leaders at the United Nations (UN) adopted the 2030 agenda of sustainable development goals (SGD's) to address the shortcomings and gaps of the millennium development goals. The scientists of education, policymakers, and researchers have a key interest in finding psychological interventions for the development of a positive attitude and behaviors in preschool children towards SGD's. However, until to date, the empirical evidence regarding the effects of different pedagogy methods for the development of desired behavior and attitudes in preschool children had not been studied in developing countries' settings. The current research study had examined the effectiveness of the most commonly available pedagogical approaches (Philosophical, role model & Storytelling) for creating positive beliefs and attitudes in pre-school children regarding SGD's. Moreover, this study has also examined the effects of a few new psychological interventions like "positive activity interventions", "operant conditioning" and "conditioning and learning" in pre-school children.

Methods: We had used a mix method approach in this research study for examining the effect of different pedagogy interventions on developing and promoting pro-SGD's behaviors in pre-school children. Moreover, the mix method approach may help us in providing more reliable and valid answers to the research questions. The current study was conducted in two big schools for preschool children's educations of an emerging country. The data was this study was collected by using both qualitative (Participant observation & Focus group) and quantitative (Survey) methods. The consent from parents of all participating children was also obtained. The confidentiality and anonymity of the participants were also assured to the parents of all participating children. While conducting this research study we had also adhered to all national, local, and international ethical principles. We had used SPSS software for conducting different statistical analyses of the data.

Results: The results had revealed that operant conditions, role models had the strongest effect on developing a pro-2030 behavior in pre-school children. The storytelling & conditioning and learning approach had a partial effect on developing desired behavior in preschool children. However, the study results had not demonstrated any support regarding the effects of a Philosophical approach on changing preschool children's behaviors.

Conclusions: The current study has validated and refined the research concepts regarding pedagogy education psychology. The research study has also extended current literature by suggesting modified techniques for developing the pro-2030 agenda attitude and behavior in preschoolers.

P.11- Hydrological research and applications for international development

No abstract sent.