

Contributions of the research community to climate action and implementation of the Paris Agreement

Research into Practice Day Side Event

Tuesday, December 4th: 11:30 – 13:00 (Narew room)

Moderator: Diane White Husic, Moravian College (USA)

Panelists

Article 7

- **Johanna Nalau**, Griffith University, Gold Coast Campus (Australia)
- **Val Kapos**, UN Environment - World Conservation Monitoring Centre (Cambridge, UK)
- **Bruce Currie-Alder**, International Development Research Center (Ottawa, Canada)

Article 12

- **Neil Jennings**, Imperial College London (UK)
- **Beth Martin**, Washington University in St. Louis (Missouri, USA)

Articles 11 and 12

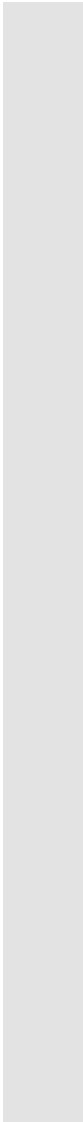
- **Saleem Huq**, International Centre for Climate Change & Development (ICCCAD) since 2009 and International Institute for Environment & Development (IIED)

Article 14

- **Angel Hsu**, Data-Driven Yale, Yale University (Connecticut, USA)



Johanna Nalau

- IPCC AR6 lead author for Ch. 15, Working Group II
 - Griffith Climate Change Response Program, Griffith University, Gold Coast Campus (Australia)
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Adaptation

Adaptation Science, Indigenous Knowledge and the Paris Agreement

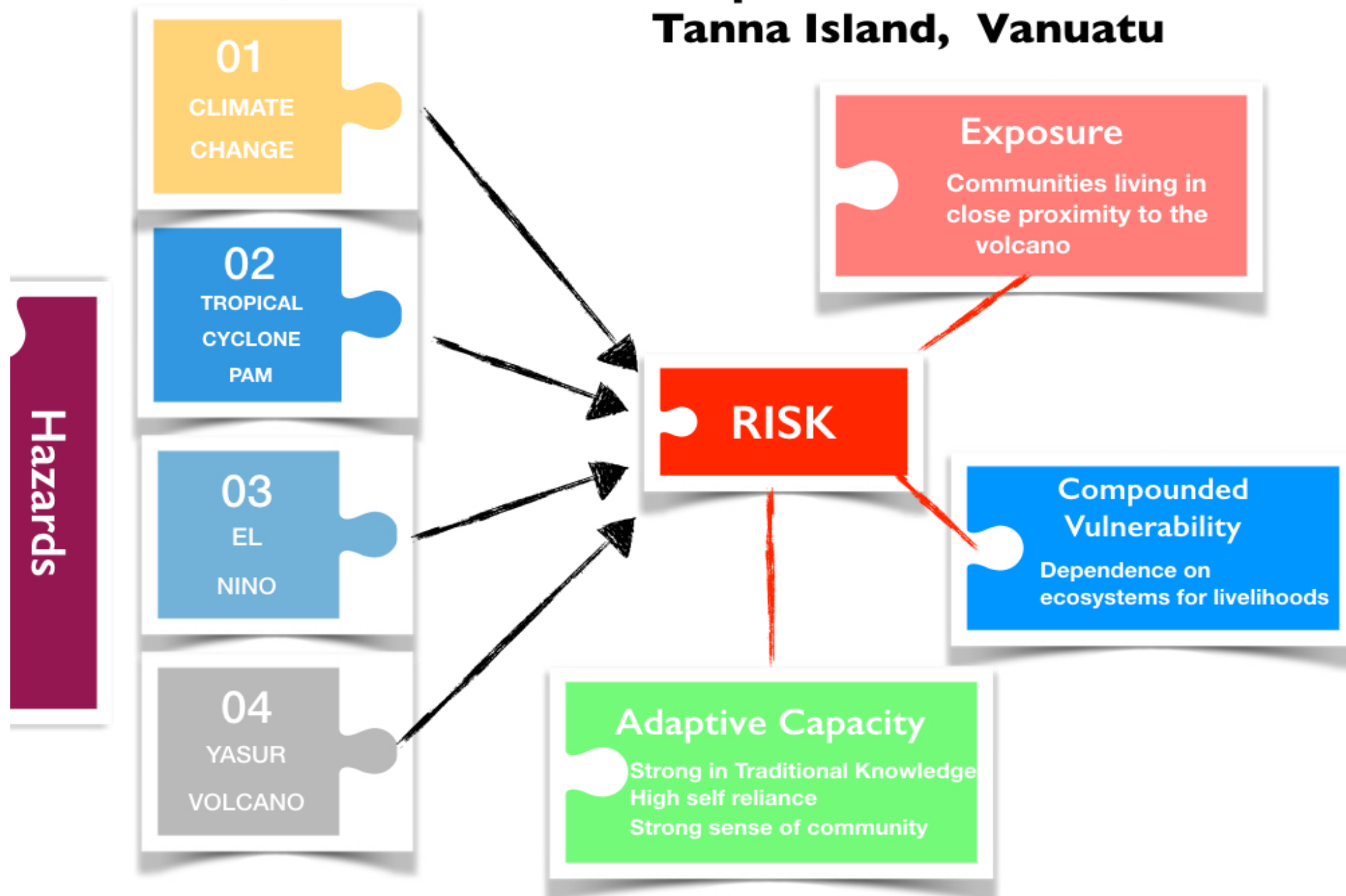
Dr Johanna Nalau, Griffith University

INFORMATIVE
RESEARCH

*Understanding
Context*

Dr Johanna Nalau, Griffith University

Impacts and Risks on Tanna Island, Vanuatu



BUILDING
CAPACITY

*Gendered
Knowledge*

Val Kapos

- UN Environment - World Conservation Monitoring Centre (Cambridge, UK)



BUILDING THE EVIDENCE BASE FOR ECOSYSTEM-BASED ADAPTATION

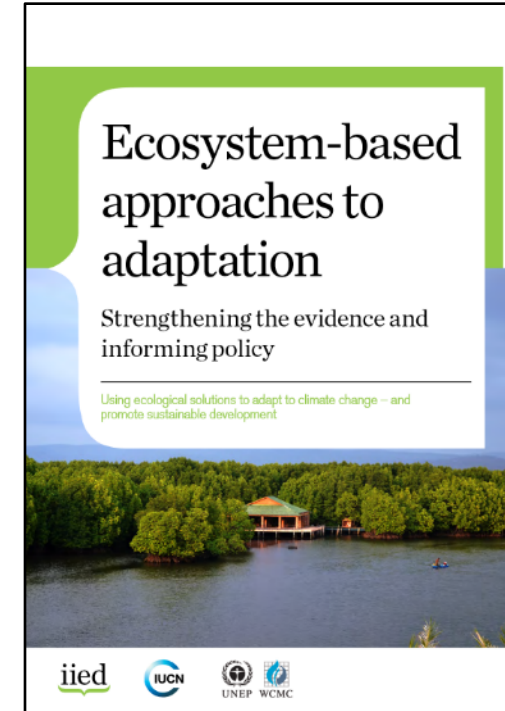
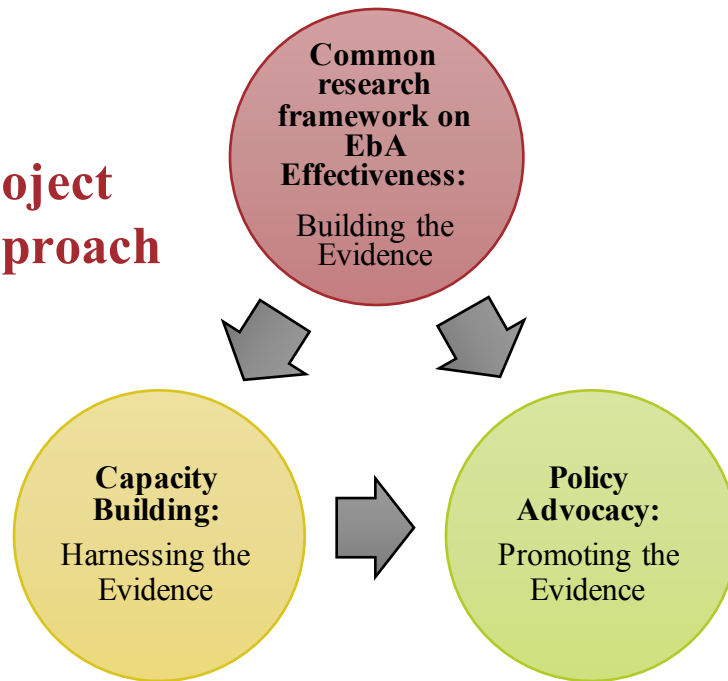
Valerie Kapos, Head of Programme, Climate Change and Biodiversity

Ecosystem-based approaches to adaptation

Why no broader uptake?

1. Uncertainty how best to finance EbA
2. Long-term nature of EbA projects
3. Weak evidence base
4. Governance issues

Project approach



International Climate Initiative (IKI)-funded project:
2015-2019

Partners: IIED, UNEP-WCMC, IUCN, in-country partners

Countries: South Africa, Kenya, Uganda, Burkina Faso, Mali, Bangladesh, Nepal, China, Chile, Costa Rica, El Salvador, Peru

Four overarching questions to assess EbA effectiveness

Does the initiative:

1. Help people maintain or improve their adaptive capacity or resilience, and reduce their vulnerability to climate change?
2. Restore, maintain or enhance the capacity of ecosystems to continue to provide services and withstand climate change impacts and other stressors?
3. Provide a cost-effective and economically viable option?
4. What institutional, political and capacity-related factors influence the implementation of effective initiatives and how might challenges best be overcome?

Question-based guidance for assessing effectiveness

Ecosystem-based adaptation:
Question-based guidance for assessing effectiveness



Among >250 tools in the

*Navigator of Tools &
Methodologies for
Ecosystem-based
Adaptation (EbA)
Practitioners*



<http://pubs.iied.org/17606IIED/>

Results to date

Effectiveness for people and society

Improvements in relation to resilience and/or adaptive capacity:

- Disaster risk reduction
- Livelihood improvements
- Livelihood diversification
- Knowledge and capacity improvements
- Strengthened governance

Who experienced these changes?

- Especially most vulnerable groups – in particular, those relying on ecosystems and ecosystem services for livelihoods and wellbeing

Any trade-offs?

- Some groups accrued more adaptation-related benefits than others (e.g. project target group, differentiated interest, availability to participate)

Importance of participation

- Adopting participatory processes was essential for building adaptive capacity



Results to date

Effectiveness for ecosystems

Improvements in ecosystem resilience

- Evidenced, strongly perceived or expected at majority of sites

Impacts at scale

- Some rapid improvements (e.g. increased water provisioning, water run-off reduction)
- Most changes expected on longer timeframes

Economic effectiveness

- Case studies adopted varying methods to assess EbA project cost-effectiveness
- Of 10 EbA measures (spread across six project sites) where formal cost-benefit studies were conducted, 9 shown to be cost-effective
- Comparison of EbA vs non-EbA interventions showed greater cost-effectiveness of EbA in a majority of cases



**UN Environment
World Conservation Monitoring Centre**

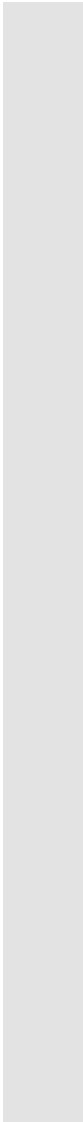
www.unep-wcmc.org
[@unepwcmc](https://twitter.com/unepwcmc)

- Hannah Reid: hannah.reid@iied.org
- Ali Raza Rizvi: ali.raza@iucn.org
- Charlotte Hicks: charlotte.Hicks@unep-wcmc.org

<https://www.iied.org/ecosystem-based-approaches-climate-change-adaptation>



Bruce Currie-Alder

- International Development Research Center (Ottawa, Canada)
- 

OVER 450
RESEARCHERS
WITH DIFFERENT BACKGROUNDS
AND EXPERTISE

40+
INSTITUTIONS



IN **15+**
COUNTRIES
IN ASIA
AND AFRICA

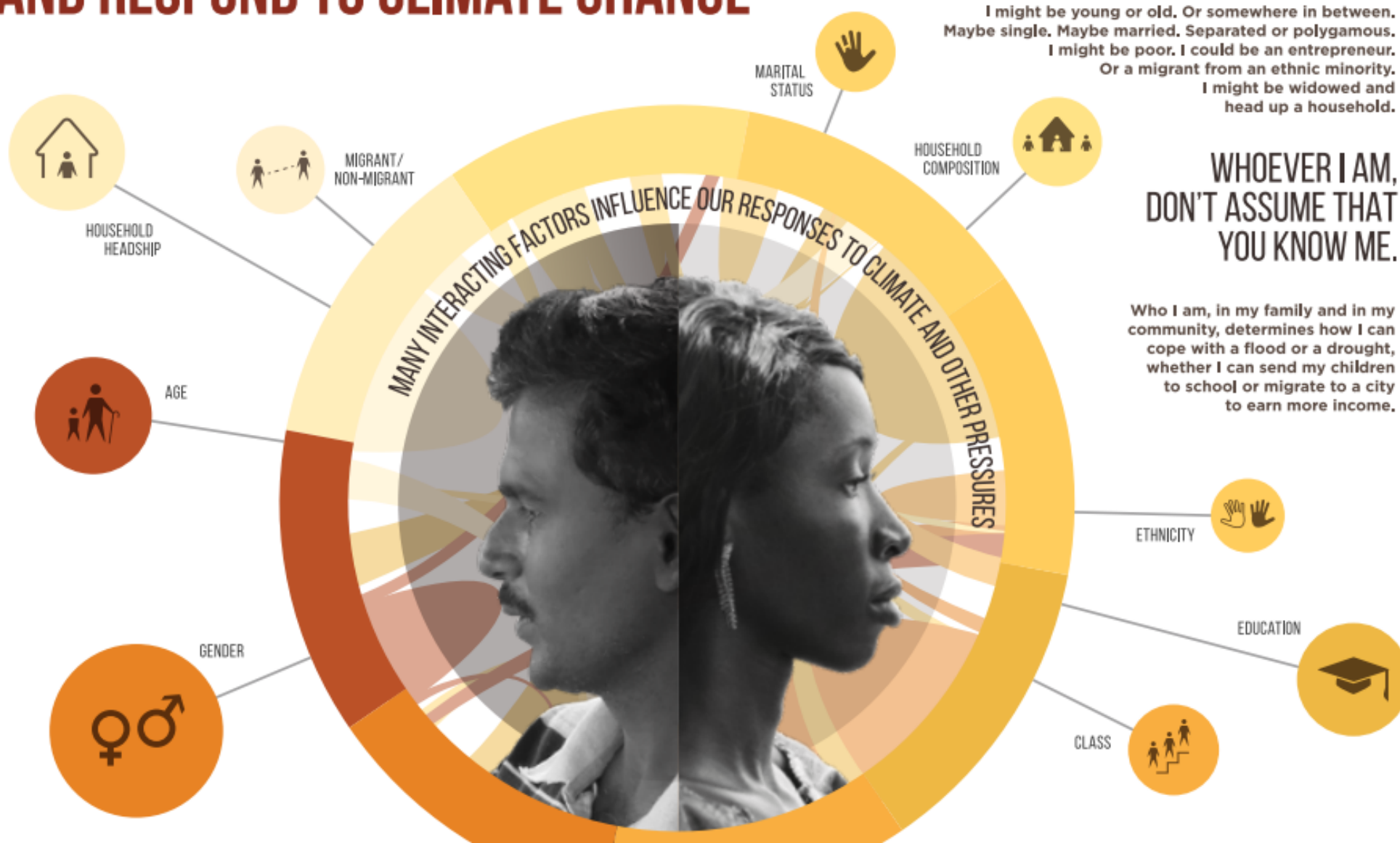


COINCIDE WITH LARGE
NUMBERS OF VULNERABLE
AND POOR PEOPLE.



PILOTED NEW OPTIONS FOR
EFFECTIVE ADAPTATION
INCLUDING FLOOD RESISTANT
SANITATION AND HOUSING

GENDER IS ONE OF MANY FACTORS THAT INFLUENCE HOW WE ARE IMPACTED BY AND RESPOND TO CLIMATE CHANGE



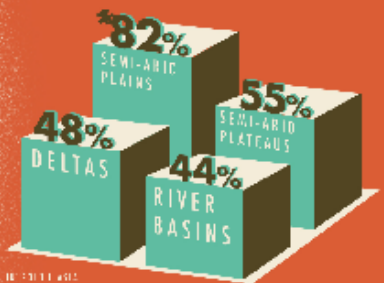
HUMAN MOBILITY AND RESILIENCE IN CLIMATE CHANGE HOTSPOTS

HOTSPOTS ARE AREAS HIGHLY EXPOSED TO CLIMATE CHANGE IMPACTS, WHICH ALSO HOST LARGE NUMBERS OF VULNERABLE PEOPLE.



REASONS TO MIGRATE.

SOCIO-ECONOMIC INEQUALITY IS THE PRIMARY REASON PEOPLE IN HOTSPOTS DECIDE TO MIGRATE, IN LARGE PART DUE TO ASPIRATIONS TO BETTER LIVELIHOODS:



MIGRANT FAMILIES HAVE **HIGHER PERCEPTIONS** OF ENVIRONMENTAL CHANGE AND THEIR VULNERABILITY TO **CLIMATE CHANGE** THAN NON-MIGRANT FAMILIES.

ENVIRONMENTAL DEGRADATION AND **EXTREME WEATHER EVENTS** ARE A MAJOR CONTRIBUTOR TO LIVELIHOOD DECLINE AND PERCEPTIONS OF INEQUALITY.



GEOGRAPHY.

SOUTH-SOUTH MIGRATION DOMINATES.



SOUTH ASIA:
MORE THAN 80% OF MIGRATION FROM HOTSPOTS IS INTERNAL



SUB-SAHARAN AFRICA:
MORE THAN 90% OF MIGRANTS FROM HOTSPOTS STAY ON THE CONTINENT

GENDER.

WOMEN'S MIGRATION IS INCREASING AT A **FASTER RATE** THAN MEN'S WITHIN THE LAST DECADE.

PROPORTION OF FEMALE MIGRANTS:



WOMEN MIGRATE MORE WHEN:

- They have higher skills & education
- They have more autonomous roles in the family and the community
- Fertility rate is lower
- When environmental degradation is so extreme that the whole family moves

MIGRANTS ARE STILL PREDOMINANTLY YOUNG MEN (20-30 YEARS OLD)



SKILLS.

CONTRARY TO POPULAR BELIEF, MIGRANTS IN HOTSPOTS ARE ON AVERAGE **MORE EDUCATED** THAN PEOPLE WHO STAY BEHIND.

MOST MIGRANTS ARE:



PROPORTION OF SKILLED MIGRANTS:



AMONG NON-MIGRANTS IN THE SAME AREAS, THE PROPORTION OF SKILLED LABOUR IS ONLY AROUND 20%.

TRENDS.

AS MIGRATION TRENDS ARE CHANGING, **SERVICES** FOR MIGRANT FAMILIES MUST ADAPT TO CHANGING NEEDS.



WOMEN IN RECEIVING AREAS ARE EXPOSED TO DIFFERENT RISKS



SKILLED MIGRANTS CAN OFFER DIFFERENT SERVICES



PRODUCTIVE INVESTMENT OF REMITTANCES IN SENDING AREAS



HOWEVER WITHOUT APPROPRIATE SUPPORT SERVICES, MIGRATION CAN TRANSFER VULNERABILITY OR EVEN INCREASE IT.

SERVICES.

MIGRATION IS MORE EFFECTIVE AS AN ADAPTATION STRATEGY WHEN SERVICES MEET THE **DIFFERENT NEEDS** OF MIGRANTS & THEIR FAMILIES IN SENDING & RECEIVING AREAS:



8 DECENT WORK AND ECONOMIC GROWTH

EMPLOYMENT



3 GOOD HEALTH AND WELL-BEING

HEALTH



4 QUALITY EDUCATION

EDUCATION



16 PEACE, JUSTICE AND STRONG INSTITUTIONS

LEGAL

TO ENSURE WE LEAVE NO ONE BEHIND



5 GENDER EQUALITY

10 REDUCED INEQUALITIES



1 TOPOLOGY



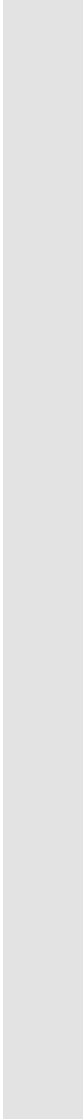
13 CLIMATE ACTION

CAR AND S CAN I RESPOND FIND



REVEALED NEW EVIDENCE ON **MIGRATION**

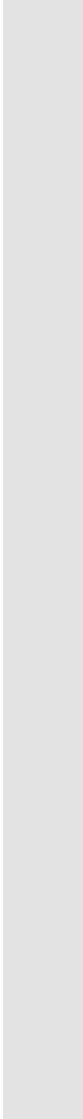
AS AN ADAPTATION STRATEGY THAT NEEDS **RECOGNITION**



Questions?



Neil Jennings

- Grantham Institute for Climate Change and the Environment
 - Imperial College London (UK)
- 

Moments of change – engaging university students in climate action and sustainable behaviours

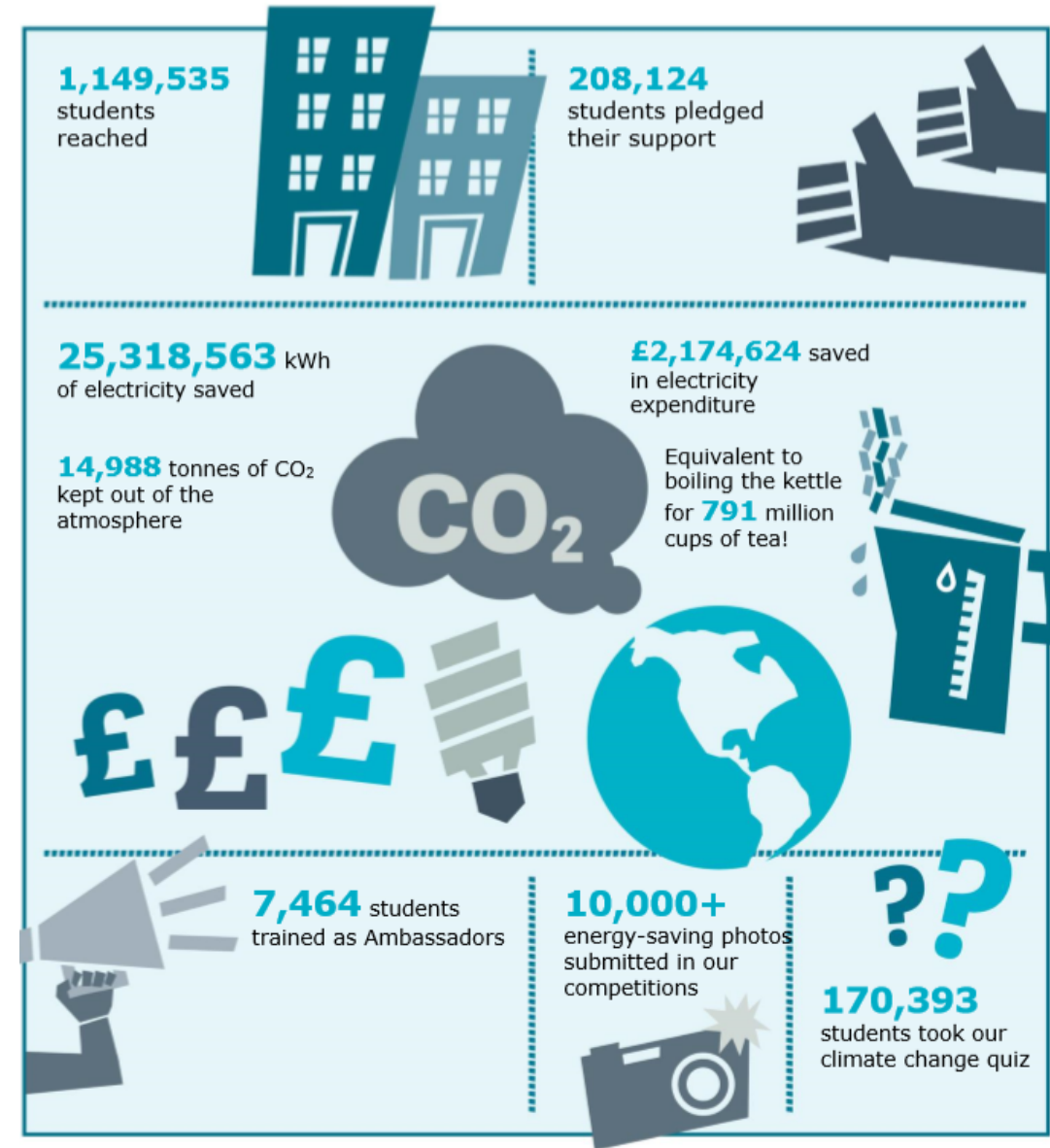
Dr Neil Jennings

04/12/2018

Student Switch Off



- Encouraging students to work together to take action on climate change - saving energy and recycling
- Trying to make climate action a positive and fun experience
- Providing feedback, celebrating and rewarding success



Grantham Institute

Climate Change and the Environment

An Institute of Imperial College London

Moments of change



3% of people attend university
but they take up **80%** of the
leadership positions.

Chuck Hopkins, UNESCO Chair



Grantham Institute

Climate Change and the Environment

An Institute of Imperial College London

Not just climate!

- Co-benefits of climate action
- SDG Teach-in 18-22nd Feb 2019 run by National Union of Students (NUS)
 - Open to all universities and colleges worldwide

e: neil.jennings@imperial.ac.uk

🐦: @NeilRJennings



Grantham Institute

Climate Change and the Environment

An Institute of Imperial College London

Beth Martin

- RINGOs Steering Committee member and focal point
- Senior Lecturer in Environmental Studies
- Gephardt Institute Community Engagement Faculty Fellow
- Washington University in St. Louis (Missouri, USA)

Teaching
climate
leaders
through
experiential
and engaged
learning

WASHINGTON
UNIVERSITY IN ST.
LOUIS

SUSTAINABILITY EXCHANGE

- **Partner** - OneSTL
- **Goal** – provide accurate data on emissions for the entire St. Louis region
- **Product** – Regional GHG Emissions Inventory



RESET: RENEWABLE ENERGY STUDENT ENGAGEMENT TEAM

- **Program Goals:**
 - Provide professional development and leadership opportunities for students interested in the renewable energy industry.
 - Build a professional pipeline for students interested in careers in renewable energy.
 - Create opportunities for students to acquire practical skills and knowledge that complement classroom learning.



INTERDISCIPLINARY ENVIRONMENTAL CLINIC



- Interdisciplinary student teams with interdisciplinary faculty supervision, handle cases and projects for environmental and community organizations.
- Case Examples
 - Recently conducted week-long trial challenging water pollution permit for 2400 MW coal plant – the largest in MO and one of the largest in the US.
 - Lawsuit against EPA challenging exclusion of a county in the St Louis region with a large coal plant from the area designated “nonattainment” for ozone pollution.

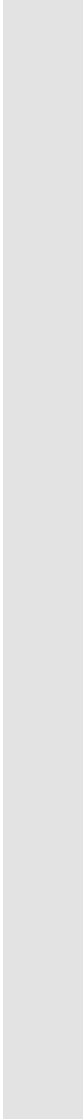
INTERNATIONAL CLIMATE NEGOTIATIONS SEMINAR

- Select Goals
 - To understand the basics of the UNFCCC process
 - To identify, analyze and evaluate policy positions and decisions in context of science and policy
 - To see the interaction between climate policy and science and technology
 - Connect our local community with international actions



HIGH IMPACT PRACTICES

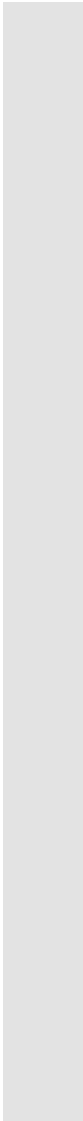
- **Collaborative Assignments and Projects**
- **Diversity/Global Learning**
- **Service Learning, Community-Based Learning**
- **Capstone Courses and Projects**



Questions?

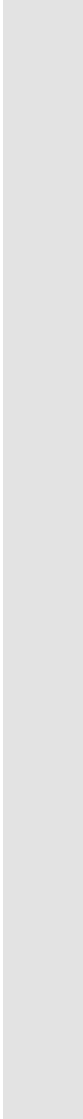


Saleem Huq

- Director, International Centre for Climate Change and Development
 - Senior Fellow, International Institute for Environment & Development
- 



Angel Hsu

- Director of Data-Driven Yale
 - Assistant Professor of Environmental Studies, Yale University
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NARROWING THE GAP: QUANTIFYING NON-STATE ACTOR CONTRIBUTIONS TO GLOBAL CLIMATE MITIGATION

GLOBAL
CLIMATE
ACTION SUMMIT

GLOBAL
CLIMATE
ACTION SUMMIT

GLOBAL
CLIMATE
ACTION SUMMIT

GLOBAL
CLIMATE
ACTION SUMMIT

Angel Hsu
Assistant Professor, Yale-NUS College
COP-24 Katowice Climate Conference

December 4, 2018
angel.hsu@yale.edu



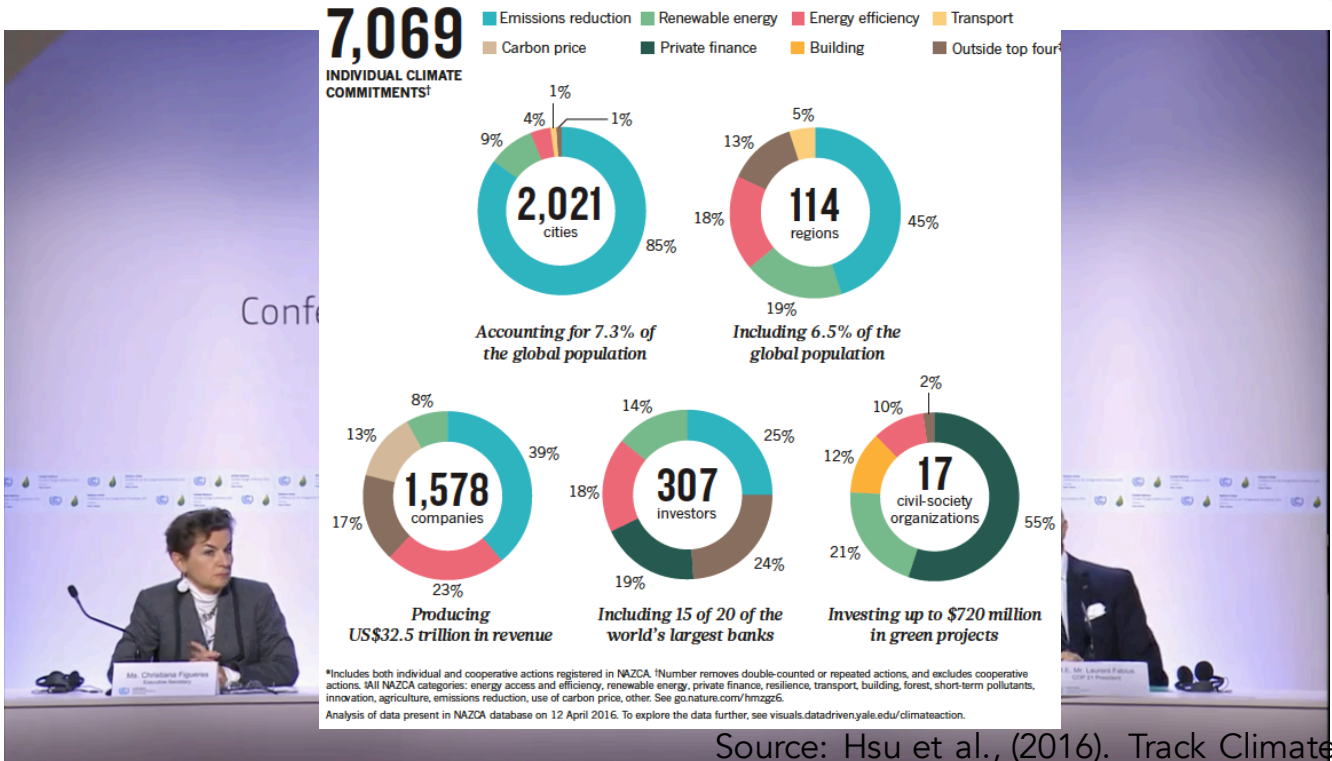
FOUR PILLARS OF PARIS AGREEMENT

UNIVERSAL
CLIMATE
AGREEMENT UNDER
UNFCCC
FOR 2020+

NATIONAL
CONTRIBUTIONS TO
THE UNFCCC
(INDCS)

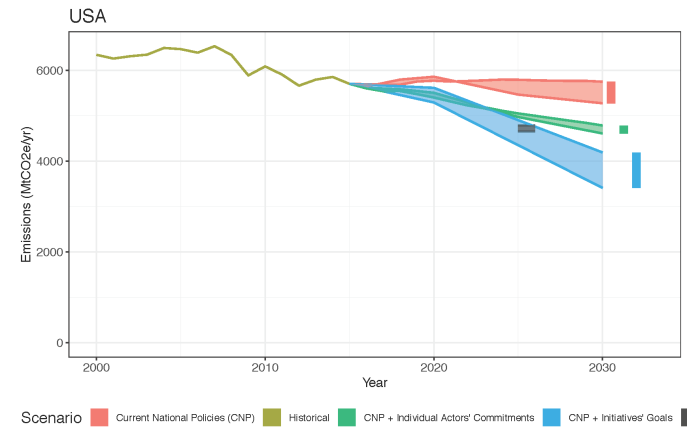
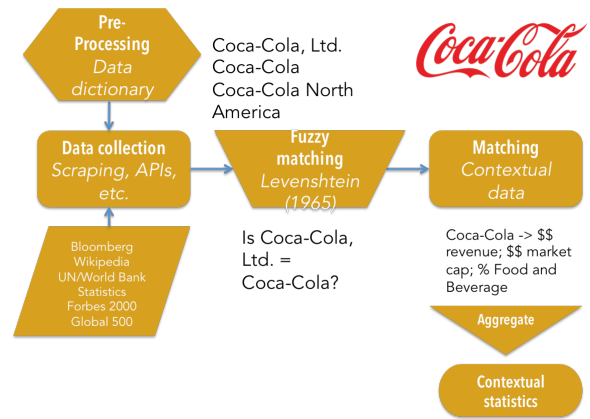
SCALED-UP
FINANCE FOR
DEVELOPING
COUNTRIES

SCALED-UP
PARTICIPATION
WITH ALL LEVELS
OF GOV'T +
STAKEHOLDERS



Source: Hsu et al., (2016). Track Climate Pledges of Cities and Companies. *Nature*.

APPLIED DATA SCIENCE + MODELING



Data on city, state and region, business, investor, civil society climate commitments and actions are mined from various data sources.

Data are cleaned and matched using a series of “grooming algorithms” using fuzzy matching algorithms (i.e. Levenshtein 1965).

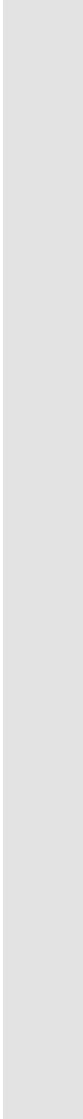
Data are mapped to a database structure that includes information on an actor’s metadata (e.g., location, population or evenue, etc.), climate actions, and emissions.

Climate mitigation actions for major emitters are aggregated at by country and compared to national-level climate commitments or nationally-determined contributions (NDCs).

Using global climate models, emissions reductions resulting from non-state and subnational climate actions are then compared to assess “additional” contributions.



<http://bit.ly/yale-nci-pbl-global-climate-action>



Questions?

For Discussion

As you know, the pledges for reduction of greenhouse gas emissions are currently insufficient to keep the global temperature from staying below a 2 degree increase, much less 1.5 degrees. The latest IPCC report is a stark reminder of the need for urgency of action, and the need to do more.

*Given this, **what more we can do as a community of researchers and educators to address the global challenge of climate change?***