International Scientific Conference

ABSTRACT BOOK

7-10 July 2015 • Paris, France

This Abstract book is based on a compilation of all abstracts selected for oral and poster presentations, as of 15 May 2015.

Due to the inability of some authors to attend, some of those works will therefore not be presented during the conference.

OUR UNDER
COMMON CLIMATE
FUTURE CHANGE

Welcome to the Conference

Welcome to Paris, welcome to 'Our Common Future under Climate Change'!

On behalf of the High Level Board, the Organizing Committee and the Scientific Committee, it is our pleasure to welcome you to Paris to the largest forum for the scientific community to come together ahead of COP21, hosted by France in December 2015 ("Paris Climat 2015").

Building on the results of the IPCC 5th Assessment Report (AR5), this four-day conference will address key issues concerning climate change in the broader context of global change. It will offer an opportunity to discuss solutions for both mitigation and adaptation issues. The Conference also aims to contribute to a science-society dialogue, notably thanks to specific sessions with stakeholders during the event and through nearly 80 accredited side events taking place all around the world from June 1st to July 15th.

When putting together this event over the past months, we were greatly encouraged by the huge interest from the global scientific community, with more than 400 parallel sessions and 2200 abstracts submitted, eventually leading to the organization of 140 parallel sessions.

Strong support was also received from many public French, European and international institutions and organizations, allowing us to invite many keynote speakers and fund the participation of more than 120 young researchers from developing countries. Let us warmly thank all those who made this possible.

The International Scientific Committee deserves warm thanks for designing plenary and large parallel sessions as well as supervising the call for contributions and the call for sessions, as well as the merging process of more than 400 parallel sessions into 140 parallel sessions. The Organizing Committee did its best to ensure that the overall organization for the conference was relevant to the objectives and scope. The High Level Board raised the funds, engaged the scientific community to contribute and accredited side events. The Conference Secretariat worked hard to make this event happening. The Communication Advisory Board was instrumental in launching and framing our communication activities on different media. We are very grateful to all.

We very much hope that you will enjoy your stay in Paris and benefit from exciting scientific

interactions, contributing to the future scientific agenda. We also hope that the conference will facilitate, encourage and develop connections between scientists and stakeholders, allowing to draw new avenues in the research agenda engaging the scientific community to elaborate, asses and monitor solutions to tackle climate change together with other major global challenges, including sustainable development goals.

Christopher Field, *Chair, CFCC15 Scientific Committee*
Jean Jouzel, *Chair, CFCC15 High Level Board*
Hervé Le Treut, *Chair, CFCC15 Organizational Committee*

Committees

Scientific committee

- Chris FIELD *(IPCC, USA) - Chair*
- Philippe CIAIS *(LSCE, France)*
- Wolfgang CRAMER *(IMBE, France)*
- Purnamita DASGUPTA *(IEG, India)*
- Ruth DEFRIES *(Colombia University, USA)*
- Navroz DUBASH *(CPR, India)*
- Ottmar EDENHOFER *(PIK, Germany / IPCC, USA)*
- Michael GRUBB *(University College London, UK)*
- Jean–Charles HOURCADE *(CNRS- France)*
- Sheila JASANOFF *(Harvard Kenny School of Government, USA)*
- Kejun JIANG *(Nanyang Technological Univerisity, China)*
- Vladimir KATTSO *(MGO, Russia)*
- Hervé LE TREUT, France *(CNRS-UPMC/France)*
- Emilio LEBRE LA ROVERE *(National University, Brazil)*
- Valérie MASSON–DELMOTTE *(LSCE/IPSL, France)*
- Cheik MBOW *(ICRAF, Kenya)*
- Isabelle NIANG–DIOP *(IRD, Senegal)*
- Carlos NOBRE *(SEPED/MCTI, Brazil)*
- Karen O'BRIEN *(Universty of Oslo, Norway)*
- Joe JACQUELINE PEREIRA *(University Kebangsaan, Malaysia)*
- Shilong PIAO *(Peking University, China)*
- Hans OTTO PÖRTNER *(Alfred Wegener Institute, Germany)*
- Monika RHEIN *(University of Bremen, Germany)*
- Johan ROCKSTRÖM *(Stockhom University, Sweden)*
- Hans Joachim SCHELLNHUBER *(PIK, Germany)*
- Robert SCHOLES *(University of Witwatersrand, South Africa)*
- Pete SMITH (University of Aberdeen, UK)
- Youba SOKONA *(The South Centre, Switzerland)*
- Jean–François SOUSSANA *(INRA, France)*
- Mark STAFFORD–SMITH *(Future Earth, Australia)*
- Thomas STOCKER *(University of Bern, Switzerland)*
- Laurence TUBIANA *(IDDRI, France)*
- Diana ÜRGE–VORSATZ *(Central European University, Hungary)*
- Penny URQUHART *(Independent analyst, South Africa)*
- Carolina VERA *(University of Buenos Aires, Argentina)*
- Alistair WOODWARD *(University of Aukland, New Zealand)*

Organizing committee

Chair:

- Hervé Le Treut *(CNRS-UPMC)*

Members:

- Wolfgang Cramer *(CNRS/Future Earth)*
- Pascale Delecluse *(CNRS)*
- Robert Kandel *(CNRS/Ecole polytechnique)*
- Frank Lecocq *(AgroParis Tech/CIRED)*
- Lucilla Spini *(ICSU)*
- Jean-François Soussana *(INRA)*
- Marie-Ange Theobald *(UNESCO)*
- Stéphanie Thiébault *(CNRS)*
- Sébastien Treyer *(IDDRI)*

Conference Secretariat:

- Claire Weill, Head *(INRA)*
- Géraldine Chouteau *(Météo-France)*
- Aglaé Jézéquel *(INRA)*
- Gaëlle Jotham *(INRA)*
- Ingrid Le Ru *(IDDRI)*
- Benoît Martimort-Asso *(IRD)*
- Nadia Mersali *(IDDRI)*
- Catherine Michaut *(CNRS-UVSQ/IPSL)*
- Aline Nehmé *(INRA)*
- Jeremy Zuber *(INRA)*
- Aimie Eliot *(INRA)*
- Eve Le Dem *(INRA)*

Communication Advisory Board:

- Richard Black, *Energy and Climate Intelligence Unit*
- Hunter Cutting, *Climate Nexus*
- Owen Gaffney, *Future Earth/Stockholm Resilience Centre*
- Kalee Kreider, *United Nations Foundation*
- Michelle Kovacevic, *Communications consultant*
- Jonathan Lynn, *IPCC*
- Kim Nicholas, *Lund University*
- Tim Nuthall, *European Climate Foundation*
- Nicholas Nuttall, *UNFCC*
- Roz Pidcock, *Carbon Brief*
- Charlotte Smith, *Communications INC*
- Sue Williams, *UNESCO*
- Denise Young, *ICSU*
- Jeremy Zuber *(INRA)*

outcomes as well as to underline the obstacles that persist in the implementation of socio-environmentally sustainable agricultural development projects.

4410 - POSTER PRESENTATIONS

P-4410-01

Strengthening the climate action movement: strategies from histories

L. Delina (1) ; M. Diesendorf (2)
(1) Independent Scholar, South Cotabato, Philippines; (2) Institute of Environmental Studies, Sydney, Australia

Since many governments lack the motivation to lead deep emission reduction initiatives, the climate action movement must strengthen its campaigns. This paper offers strategies for the movement derived from historical analysis of mechanisms that achieved effective social change in the past. Common elements of climate action with past social change movements, together with some differences, are identified. Although technologies, strategies and tactics vary, climate action groups can agree to support a shared common goal: effective climate mitigation, that can be accomplished not only through outward-oriented tactics, but also by forms of climate activism that are prefigurative - that is, based on action within local communities. Furthermore, the diverse campaigns that take place on a variety of scales and spaces, conducted by heterogeneous groups, should be integrated by establishing national and international hubs to facilitate coordination and communication.

P-4410-02

"Re-Imagining Radical Climate Justice for the Post-Paris World"

F. John (1)
(1) University of California, Santa Barbara, Sociology, Santa Barbara, United States of America

The science is not in question: climate change is here now, not in the future,[1] and it is already having devastating effects on people's lives. That's the bad news, of course.

Even worse, the massive social, economic, and political inequalities already generated by neoliberal capitalism would seem to set the social and natural worlds on a collision course which the elites cannot win -- even on their own terms -- without destroying the basis for all human life. To put it bluntly, the climate crisis is perilous, our 500 year-old economic system cannot see us through it safely, the window for resolving this dilemma is closing inexorably, and the forces arrayed against our common survival are strong, very strong.

The good news is that there's a global climate justice movement which is growing in numbers, reach, strength, and inventiveness. This movement is impossible to encompass easily, because it consists of literally thousands of organizations at every level - community, city, bio/region, nation, and the global - interlinked in a vast network of networks.[2]

The next few years will be the years that those of us in the climate justice movement must scale up our efforts toward the end of mounting irresistible pressure of all kinds on our governments and on the corporations, banks, and all the institutions of neoliberal capitalism that they serve. We must force them to take the decisive steps we all need and want, such as a fair and binding global climate treaty and a deeply sustainable post-capitalist society free of structured violence and run democratically by the ninety-nine percent.

Consider the following:

Parts of the radical left are turning their attention to climate change (System Change Not Climate Change in North America), while many members of the radical climate justice movement are turning their attention to anti-capitalist politics.

At the same time, the Big Green environmental organizations (the Sierra Club in the US), the mainstream global climate justice movement (CAN), and the biggest climate social movement organization (350.org) are all radicalizing.

The same can be said of climate science in general (The IPCC Fifth Assessment Report etc.) and particular climate scientists, such as Kevin Anderson, Alice Bows-Larkin, Michael Mann, James Hansen, et al.

Finally, there is an enormous push coming up from young people, and indigenous forces on all of these levels.

The question is: what are the prospects for synergy and movement building among all these forces? What is the way forward?

It appears evident that we will need to assemble the greatest social movement the world has ever seen to achieve these ends. The global climate justice movement is growing steadily, but it is still far too weak to win - at least for the moment.

This essay will trace some of what it has accomplished so far, asking where the major points of impact lie at the moment, and what strategic decisions must be faced moving forward.

[1] IPCC [Intergovernmental Panel on Climate Change], "Summary for Policymakers," pp. 1-28 in Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, edited by T.F. Stocker, D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P.M. Midgley (Cambridge: Cambridge University Press, 2013), http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdfhttp://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf.

[2] Paul Hawken makes the claim that the movement organizations number in the thousands: Blessed Unrest: How the Largest Movement in the World Came into Being and Why No One Saw It Coming (New York: Viking, 2007). For a partial, annotated list of some of the key climate justice movements and resources of which I am aware, see "The Global Justice Movement On-line" at www.iicat.org.

P-4410-03

Climate Change and Ebola Outbreaks: Are they connected?

D. Kassie (1) ; M. Bourgarel, (1) ; F. Roger (1)
(1) Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), Environnements et Sociétés (ES) / UR AGIRs - Animal et Gestion Intégrée des Risques, Montpellier, France, France

The climate factors have an impact on pathogens (resistance, selection, etc), hosts (biology like immunity, ecology like migration movements, etc), vectors (ecological niches, vector capacity) and epidemiological dynamics. The climate can affect the rate of transmission, the way in which pathogens are dispersed, contact networks between individuals and between different species, community structures. Livestock farming methods, or biodiversity and its ambivalent role in disease emergence are also depending of climate factors. The diseases most sensitive to climate factors are parasitic diseases with external life-cycle, vector-borne diseases and infectious diseases passed on by water or micro-mammals including bats. Most of them are zoonosis.

For a zoonosis like Ebola, several potential drivers are suspected to connect climate change to ecosystems, virus transmission to Human and heath care policies:

1. Ecology and behaviour of the bat species suspected to be Ebola virus reservoir could be affected by climate change: population density, migration, habitat utilisation, reproduction, feeding behaviour, and nature or intensity of inter-specific contacts. All those parameters would have an impact on the ecology of the Ebola virus. Therefore, researches for understanding the mechanisms of virus maintenance, circulation and transmission and for identifying reservoir and bridge species need to address the correlations between Ebola foci and its environmental factors, including climatic factors.

2. Human contamination by Ebola virus can occur through close or direct contact while hunting or through eating meat from wildlife. Climate changes can for one side, favour

contact between wildlife and humans by impacting the natural habitats of the reservoir species and by influencing their movements. For other side, climate evolution may also exacerbate food insecurity, which can in turn modify human behaviour, particularly by prompting people to look for alternative food sources, such as bushmeat.

3. Low-income countries must reinforce their health systems to detect earlier infectious zoonotic diseases and control outbreaks, by taking into consideration potential impact of climate change in their sanitary strategy and policy. Indeed, health systems are structurally inadequate in the least advanced countries, where they endure rather than anticipate climatic conditions and their variations. The recent Ebola epidemic in West Africa bears witness in particular to the need to step up the early detection and management of the emergence of zoonosis taking into account accurate environmental, social and climatic data.

Research and health management regarding these 3 items should be carried out through the "One Health" concept. This holistic approach includes both animal health and human health in their shared environment. The implementation of a multidisciplinary and intersectoral approach requires above all an awareness of its benefits and greater involvement of all the scientific and policy makers. The issue of climate change and its impacts on viral diseases may be an axis of reflection on this integrated approach, and Ebola disease is a topical issue.

Our poster presents some examples of North-South collaboration between teams which are fighting together against both climate change and Ebola crisis.

P-4410-04

Localised Climate Smart Agricultural Practices from the Global Permaculture Movement: Examples from the Semi-Arid Little Karoo in the Western Cape Province of South Africa

E. Kruger (1)
(1) University of the Witwatersrand, Department of Social Anthropology, Johannesburg, Gauteng, South Africa

A growing global social movement under the banner of permaculture is aimed directly at responding to the effects of climate change and mitigating human impact on our environment, in particular the consequences of unrestrained resource extraction and consumption and non-sustainable agriculture. Permaculture, a conceptual framework that originated in Australia in the 1970s, and now practiced across the globe, provides guidelines for the design of human living environments and the activities that we carry out in those environments. The underlying aim of permaculture design is to create productive anthropogenic landscapes of benefit to both humans and the environments that we inhabit - living and non-living by reducing the negative impacts of our actions through considered design. In the process, the intention is to also have an actively beneficent impact on those environments.

A principal focus in permaculture is the localisation of resilient food production systems which mimic and integrate with local ecologies and ecosystems, and are designed in anticipation of the climatic extremes expected to occur with climate change as well as reduced access to fossil fuels.

This presentation will introduce central approaches to agriculture and food production in the permaculture framework, and draw upon case studies from anthropological fieldwork conducted at a permaculture project located in the semi-desert Succulent Karoo biome of the Western Cape province in South Africa. In particular, the discussion will consider the design methods and technologies that have been employed to provide water and food in a highly degraded landscape of climatic extremes, and in the process contribute towards improved ecological resilience and biodiversity. Examples here include the use of water harvesting earthworks such as keylines, swales and tree pan systems, as well as employing a diverse range of climate specific and resilient productive species grown together to create micro-climates more amenable to food production and human habitation.

Some points that will be considered in this oral presentation are: What is climate smart agriculture? - Some central concerns around climate change and agriculture. What agricultural practice is not smart? What is permaculture? - Case studies of permaculture food production at a semi-arid permaculture in South Africa. How does permaculture address the concerns raised in climate change debates? What lessons can we learn from the permaculture paradigm of climate smart agriculture?

P-4410-05

The Prevalence of HIV/AIDS amongst the Pastoral Communities over Kenya, Uganda, Tanzania and Ethiopia

G. Otieno (1)
(1) university of nairobi, meteorolgy, nairobi, Kenya

The Human Immune Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) have been identified as a major threat to pastoral communities over East Africa. The regional governments have given little attention to this problem due to the perception that Pastoralisms is economically inefficient and environmentally destructive. The study was carried over Kenya, Ethiopia, Tanzania and Uganda to assess the current state of HIV/AIDS prevalence amongst the pastoral communities using desktop review and expert judgment opinion. In Kenya, about 8million people of Kenyan population depend on pastoralism. In Tanzania the livestock sector contributes about 6.1% to the national Gross Domestic Products (GDP). In Uganda 17% of GDP is accounted for by the sector and about 9% of the national GDP in Ethiopia.

In the pastoral districts the average prevalence of HIV/AIDS amongst the community is estimated at 5.7% with this figure expected to increase. The infection rates are being accelerated by factors related to human rights and gender, socio-cultural environment and lack of HIV/AIDS awareness and stigmatization. The HIV/AIDS is not recognized at policy level as a major problem facing Pastoralisms yet the statistics show increasing population of HIV/AIDS victims.

The communities refuse to admit the presence and impact of HIV/AIDS within their families with high stigma attached to the affected and infected. The number of livestock has been diminishing through sales to pay the medical expenses when the pastoralists are affected. The study recommends for budgetary support and HIV/AIDS campaign amongst the pastoral districts to reduce the stigma and curb the decreasing number of livestock.

P-4410-06

Now You See It

L. Perrin (1)
(1) Lola Perrin, London, United Kingdom

I have spent the last year sourcing and interviewing campaigners, inventors and innovators at the frontline of climate justice and placing their words within a music composition for piano and recorded spoken words. The project is a device to drive population awareness of the issues. Interviewees range from grassroots mitigation experts in Africa to Costa Rican media agitators to campaigners in the Arctic. Please note that as of today, The Guardian newspaper is currently picking up on my work, being released end March 2015. I propose for you a Q&A, to be discussed, following a performance featuring my work - as a musician/layperson/mother of two boys/ deeply concerned about our future. I will be situated at a music keyboard/acoustic piano, performing with my artistic, pre-recorded spoken word presentation created from my interviews with major international voices in the climate justice movement, delivered through PA system.

Here follows my press release. I hope to hear back from you: music is an important social device to communicate between expert witnesses and ordinary people and I would like to collaborate with you to create the perfect performance for your vital intiative. I live in London.

TITLE: 'NOW YOU SEE IT'

FOR PIANO AND AN ORCHESTRA OF WORDS RECORDED FROM ACTIVISTS & INNOVATORS AT THE FRONTLINE OF CLIMATE JUSTICE

2 min PROMO https://www.youtube.com/watch?v=EsHnQJQ1A54