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Stakeholders demand ambitious climate action at 2015 Climate and Health Summit

a daily multi-stakeholder magazine on climate change and sustainable development

# outreach.

7 December 2015

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STAKEHOLDER FORUM

**About Stakeholder Forum**
Stakeholder Forum is an international organisation working to advance sustainable development and promote democracy at a global level. Our work aims to enhance open, accountable and participatory international decision-making on sustainable development through enhancing the involvement of stakeholders in intergovernmental processes. For more information, visit: www.stakeholderforum.org

Outreach is a multi-stakeholder publication on climate change and sustainable development. It is the longest continually produced stakeholder magazine in the sustainable development arena, published at various international meetings on the environment; including the UNCSD meetings (since 1997), UNEP Governing Council, UNFCCC Conference of the Parties (COP) and World Water Week. Published as a daily edition, in both print and web form, Outreach provides a vehicle for critical analysis on key thematic topics in the sustainability arena, as well as a voice of regional and local governments, women, indigenous peoples, trade unions, industry, youth and NGOs. To fully ensure a multi-stakeholder perspective, we aim to engage a wide range of stakeholders for article contributions and project funding.

**If you are interested in contributing to Outreach**, please contact the team (acutter@stakeholderforum.org)

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# WHO key messages for COP21

WHO at COP21

Climate change is affecting health now, and will continue to do so. WHO conservatively estimates that climate change will cause some 250,000 additional deaths per year by the 2030s. The main health risks are more intense heatwaves and fires; increased prevalence of food-, water- and vector-borne diseases; increased likelihood of undernutrition resulting from diminished food production in poor regions; and lost work capacity in vulnerable populations.

Uncertain but potentially more serious risks include: breakdown in food systems, violent conflict associated with resource scarcity and population movement, and exacerbation of poverty, undermining the health and other objectives of the post-2015 sustainable development agenda. Poorer populations and children are disproportionately at risk, with different impacts on women and men. Overall, climate change is expected to widen existing health inequalities, both between and within populations.

**Health protection is possible, and should be a priority for investment of climate adaptation funds.** Health can be protected against climate change through protecting and improving the social and environmental determinants of health, such as water and sanitation, ensuring equitable access to health services, and health interventions that are targeted specifically at climate-related risks, such as surveillance and response for climate-sensitive infectious diseases. These are good investments for both development and climate funds, as they are proven to save lives now, and can also strengthen long-term resilience to climate change.

**Mitigating climate change can bring large and immediate benefits for health, and for the economy.** Policies that reduce carbon emissions can also yield large, local, near-term health benefits for populations at all stages of development. The most obvious gains are from reducing the annual mortality attributable to ambient and household air pollution (about 4.3 million and 3.7 million, respectively), which is among the largest causes of death globally. Implementing proven interventions to reduce emissions of short-lived climate pollutants, such as achieving higher vehicle emissions and efficiency standards, would be expected to save approximately 2.4 million lives a year and reduce global warming by about 0.5°C by 2050. Placing a price on polluting fuels to compensate their negative health impacts would be expected to cut outdoor air pollution deaths by half, reduce carbon dioxide emissions by more than 20 per cent, and raise approximately US$ 3 trillion per year in revenue – over half the total value of health spending by all of the world's governments.

pic: ©WFP/ Tim Dirven – supported by the EU. Food distributions are combined with nutrition screenings for children under five.

**Healthcare provision is responsible for approximately 10 per cent of global Gross Domestic Product (GDP) – and its size and contribution to climate change is growing.** The health sector can also improve its own practices and at the same time minimise its carbon emissions. Health services in some developed countries are responsible for between five and fifteen per cent of carbon emissions. Energy efficiency, shifting to renewables, and greener procurement and delivery chains can both improve services and cut carbon emissions. In contrast, many health facilities in the poorest countries lack any electricity supply; for resource-constrained settings and off-grid hospitals and clinics, low-carbon energy solutions can form an important component of an overall energy supply strategy.

**A strong climate change agreement is a strong health agreement.** An effective climate agreement is essential to safeguard public health. An agreement that reinforces the original UNFCCC principle of health as a primary motivation for action, identifies health as an adaptation priority, and promotes climate change mitigation policies that also bring health benefits, would be even more beneficial. It would help bring about a planet that is not only more environmentally intact, but also has cleaner air, more abundant and safer freshwater and food, more effective and fairer health and social protection systems – and as a result, healthier people ■

# Unprecedented consensus of health stakeholders demands ambitious climate action at 2015 Climate and Health Summit

**Erica Parker**
Global Climate and Health Alliance

On December 5th, the 2015 Climate and Health Summit brought together more than 300 health experts and policy-makers in Paris. World leaders are gathered in the French capital to close the deal on a universal agreement to tackle climate change.

Six days into the negotiations, the Summit was a chance to reflect on the immense health impacts of climate change and the health opportunities of climate action, as well as a crucial opportunity for bold commitments to protect health.

In the weeks leading up to the Paris meeting, the health sector has stepped up to ensure that governments understand the health implications of our climate choices. Doctors, nurses, public health professionals, NGOs and students all over the world have been lobbying climate negotiators on global, regional and local levels, demanding ambitious action.

In the closing hours of the Summit, the results of combined declarations from every part of the health sector were released. Signatories represented more than 1700 health institutions, and 13 million health professionals. This unprecedented medical consensus demanded action to mitigate climate change, enhance the adaptive capacity of communities and health systems, and improve decision-making processes around health and energy policy areas. Among these signatories were 41 health systems, inclusive of more than 8,200 hospitals and health systems which had pledged to lead by example in reducing emissions and preparing for the impacts of climatic change.

Climate change threatens many fundamental determinants of health, from clean air, food and water security, to safe shelter and secure livelihoods. It affects both physical and psychological health and wellbeing in potentially profound ways. These impacts fall disproportionately on those who are most vulnerable to the impacts and least responsible for the emissions that cause climate change. However, the synergies between climate action and health action are significant, presenting great opportunities for intersectoral activities to further both agendas.

During discussions at the Summit, Dr Xavier Deau, President of the World Medical Association, urged health professionals to "become aware of our role in reaching a green future". He argued that doctors have an ethical duty to act, and should be "whistleblowers on climate". Professor Benoit Vallet, the Director General for Health in France, furthered these comments, suggesting that "health professionals have a duty to put health at the core of COP21."

Two Ministers of Health, from Fiji and Tuvalu, shared moving stories of the impacts of climate change in their countries. Minister Satini Manuella of Tuvalu described the immense challenges faced when "all our health clinics have been washed away" and shared a wish that "the health impacts on the rest of the world be lesser than those for [his] country".

A number of breakout sessions focused on success stories, such as the innovative adaptation measures coming from hard-hit regions of Bangladesh, Kenya and Brazil, now able to be shared through worldwide adaptation forums. Other sessions discussed how numerous health institutions are demonstrating climate leadership by drastically enhancing their own sustainability and resilience strategies, and saving money in the process.

With delegates from all six continents, representing the full spectrum of climate vulnerability and resilience, the message at the Summit was clear: climate change is impacting on our health now, and urgent action is required to mitigate health damages and help communities to adapt where prevention is already too late.

The 2015 Climate and Health Summit was a great success, but it is just the beginning of the road. The health sector wants to see real world improvements in the health of all populations. The catalyst for such a transition is a strong, universal and ambitious global climate agreement, in which the protection and promotion of health is a central principle. Can political will among negotiators in Paris match the aspirations of communities worldwide to tackle climate change and health in a unified manner?

## MORE INFO

The Summit was coordinated by the Global Climate and Health Alliance in collaboration with the World Health Organization, the Ministère des Affaires sociales, de la Santé et des Droits des femmes français, the Société Française de Santé et Environnement (SFSE) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), funded by the Federal Ministry for Economic Cooperation and Development (BMZ), and our local implementing partner, the Health and Environment Alliance (HEAL).

# The healthy case for fossil fuel divestment

**Alistair Wardrope**
Healthy Planet

In 1998, four of the world's largest tobacco companies were forced to make public decades of internal documents narrating their systematic attempts to undermine public health and legislative attempts to protect public health from the dangers of smoking.

One of these documents – an internal memo circulated at Brown and Williamson – stated simply:

"Doubt is our product, since it is the best means of competing with the 'body of fact' that exists in the mind of the general public."

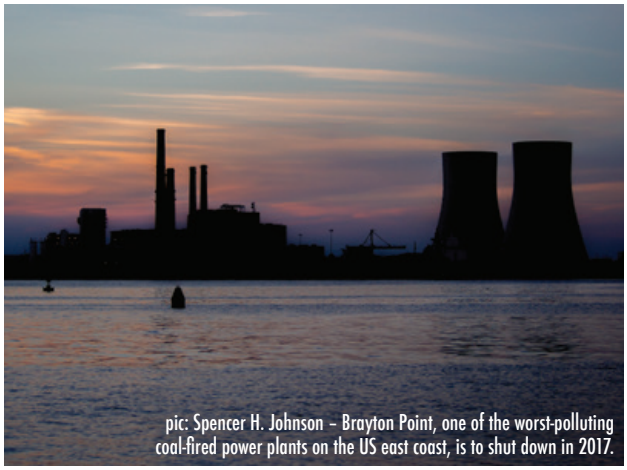
That same year, a group of fossil fuel industry representatives working with the American Petroleum Institute produced a 'roadmap' for industry communications in the aftermath of the agreement of the Kyoto Protocol. They advised API members that:

"Victory will be achieved when average citizens 'understand' (recognise) uncertainties in climate science; recognition of uncertainties becomes part of the 'conventional wisdom'."

The parallels here are no mere linguistic accident. Fossil fuel companies had been aware since the 1970s of the potential threat to human health and wellbeing posed by climate change, and the role their business played in driving it. Like the tobacco industry, they decided to respond, not by amending their practices to protect the health of people and planet, but by subverting science, undermining legislation, and polluting public discourse with misinformation – often produced and disseminated by the same think tanks and scientists-for-hire previously employed by the tobacco industry.

It is easy to understand why fossil fuel companies would resort to such desperate tactics. The reality of climate change does not simply pose an inconvenience for their current practices; it invalidates their entire business model. The continued profitability of this industry relies upon detection and development of ever greater fossil fuel reserves. But we know that, to stand even a 50 per cent chance of keeping temperature rises below the internationally-agreed 2°C limit, 35 per cent of already-listed oil reserves, 52 per cent of natural gas, and a staggering 88 per cent of coal must remain in the ground, unburned. Their business is simply incompatible with a health-supporting climate, as the industry continues to demonstrate: by cutting investment in renewables; increasing development of new, highly-polluting unconventional fossil sources like oil sands and arctic drilling; and staking its future on unabated fossil fuel dependence, with all that entails for our climate.

The health sector's response to this situation must acknowledge that the practices of this rogue industry pose an immense threat to public health, to break the social licence that affords it the influence to disseminate doubt and derail legislation, and to work to drive the radical transition in our energy economy that public health demands. Health organisations can instigate this process by publicly committing to end all financial interests they have in fossil fuel extraction companies – that is, by divesting. Divestment is a potent signal to the public that the continued profitability of these companies is antithetical to the aims of institutions dedicated to protecting and promoting health, and – just as it did with tobacco – can help stigmatise unethical behaviour and erode the industry's social power.



pic: Spencer H. Johnson – Brayton Point, one of the worst-polluting coal-fired power plants on the US east coast, is to shut down in 2017.

That is why an increasing number of health sector organisations – including the British and Canadian Medical Associations and the Royal Australasian College of Physicians – are joining over 500 universities, government bodies, faith groups and other public institutions to have already divested $3.4tn from fossil fuels. It is why 1000 leading health professionals earlier this year wrote to the boards of the Wellcome Trust and Gates Foundation asking them to divest, supported by the International Federation of Medical Students' Associations, representing over 1m medical students worldwide whose future practice will be defined by a changing climate. And it is why world leaders from Ban Ki-moon to Desmond Tutu have expressed support for divestment.

In the words of WHO Director-General Margaret Chan, "what will really make the difference in addressing climate change is how societies choose to invest." By divesting from fossil fuels, the health sector can instead support the renewable energy transition public health demands, helping to move societies away from carbon dependence towards cleaner energy generation and transport, with potentially massive co-benefits for public health. While climate change may pose the greatest global health threat of the 21st century, by divesting from fossil fuels and reinvesting in sustainable alternatives, health organisations can help to make it our greatest opportunity for better health ■

# Medical students: climate change policy nerds or hardline lobbyists?

**Alice McGushin**
International Federation of Medical Students' Associations COP21 delegate

The International Federation of Medical Students' Associations (IFMSA) has been attending the United Nations Framework Convention on Climate Change (UNFCCC) Conferences of Parties (COPs) as well as the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) meetings for a number of years.


The IFMSA is a federation of medical students' associations from 121 different countries, representing over a million medical students. We are a delegation of six here at COP21 and for all of us this is our first COP experience.

For many of us, the UNFCCC has been negotiating our entire lives. But we feel these meetings and negotiations are all the more relevant for us than for those who have been present from the beginning.

We shall all be commencing our careers in the following few years and will be practicing medical professionals when the health outcomes of current decisions and actions become far more apparent, sometime around the middle of this century. Not only will climate change directly affect our own practice, but as health professionals it is our duty to advocate for the health of current and future patients and communities.

Climate change has been identified by *The Lancet* Commission as the biggest global health threat of the 21st century. The human health and welfare impacts of climate change were central to the definition of "adverse effects of climate change", adopted by the United Nations Framework Convention on Climate Change in 1992. However since this time, health has largely been forgotten in climate change mitigation, adaptation and loss and damage discussions.

In the Lima Call for Action, health was included under Article 19 for the examination of opportunities with high mitigation potential, including those with adaptation, health and sustainable development co-benefit over the 2015-2020 period. However, at the start of negotiations here in Paris, health has only been explicitly recognised in the preamble of the ADP draft agreement and as an option in Article 2.

The World Health Organization (WHO) has released its own call to action to protect and address the human health impacts of climate change here in Paris. As representatives of the world's future doctors, we are calling for a strong agreement that avoids unacceptable risks to human health. We call for stronger recognition of health in adaptation, with the integration of adaptation into public policies and actions.

Additionally, we must acknowledge the immense health co-benefits of mitigation and adaptation policies as a further incentive to take action on climate change. These health co-benefits are the result of cleaner air, greater physical activity, better diets and better housing from policies that move us away from fossil fuels and greenhouse gas intensive agriculture.

The health sector must lead efforts to address the health impacts of climate change by minimising our own carbon footprint and contributing to the development and implementation of policies.

But our duties extend beyond COP: We also have a role in educating our colleagues and the public about the health impacts of climate change and the health opportunities of action on climate change.

In our own efforts to educate current and future generations of young people, IFMSA has created a training manual on climate change and health. This manual gives a background on climate change science, mitigation, adaptation and loss and damage, politics and negotiations. It also covers the health impacts of climate change and the co-benefits of mitigation and adaptation policies in a language accessible to our young colleagues. In addition to information, the manual contains practical information on capacity building, including how to run a workshop, with suggested agendas and advice on advocacy and campaigning.

As young and future health professionals, not only will we be faced with the health impacts of climate change in our day to day practice over the coming decades, but we have the opportunity to lead change now to protect the health of our patients and our communities. We as individuals and as IFMSA will continue to take our own personal action on climate change and to advocate for progressive global outcomes.

As an Australian as well as a young public health and climate change advocate and educator, I must also acknowledge the great contribution of the late Tony McMichael to the development of research, knowledge and understanding in this space ■

# Climate change and NCDs: Lessons in communication on the road to 2030

**Juliette Wittich, Jack Fisher and Mats Junek**
NCDFREE

Both climate change and non-communicable diseases (NCDs) share many underlying challenges - many interacting forces drive them; there is significant ambiguity and misinformation surrounding them; and the current economic climate does not favour good outcomes. As such, both will benefit from similar strategies that work towards sustainable solutions. The first starts with clear and engaging communication.

Both climate change and NCDs are complex and multifactorial issues and we need to begin by clarifying the misconceptions that have been fostered around them, partly by parties with competing economic interests.

In the climate debate, this must surely commence with the rejection of any plausible doubt about the science, which has for decades told us that our planet is warming at an alarmingly rapid rate. In fact, let's stop referring to it as 'the climate debate' altogether. Debate implies there are some credible scientific question marks surrounding the evidence base, which countless meta-analyses have debunked. Debate enables inaction and stunts our ability to act swiftly and decisively, in the best interests of our planet and its inhabitants.

In the NCD space, we struggle with many of health's toughest anti-heroes: Big Food, Big Tobacco, Big Alcohol. Like climate change denial groups, they are accomplished at muddying the waters of scientific evidence to serve their own ends. They too use lobby groups and aggressive litigation to limit our capacity to intelligently address issues that are threatening the wellbeing of both humanity and our planet. They are also very good at hiding their part in this deliberate swarm of misinformation.

The extent of fossil fuel industry funding that the foremost climate denying think tank of the United States, the Heartland Institute, receives is unsurprising. In the same way, the medical world was not rocked when it was revealed the largest contributor to The Global Energy Balance Network, was the Coca Cola Foundation. Does this matter? Evidence suggests so. A recent meta-analysis of beverage studies in PLOS found those funded by industry, consistently found no link between sugar-sweetened beverages and weight gain.

We can undermine these efforts, but we need to become consistent in our methods for communicating complex ideas, in an engaging and motivating fashion. At NCDFREE we try to do this by giving young, concerned thinkers two

pic: Scott Smith (SRisonS)

things: the facts – about the health challenges surrounding non-communicable disease – and skills in advocacy, innovation and leadership. We deliver these together in our advocacy and innovation bootcamps, filled with inspiring speakers who deliver the skills we need to become effective advocates; communication challenges, global health short films and comedy.

We are not reinventing the wheel, as these workshops use well-established skills and build on existing knowledge. Unfortunately, the skills and knowledge are not bought together as much as they need to be, mainly because we are specialists who are not very good at creating partnerships. We do know, however, that doing the right thing for your planet or your health can be simple and fun. We are just not very good at delivering this message.

There is nothing wrong with simplicity. In fact, simplicity will be crucial in making the issues of NCDs and climate change part of our everyday conversation. Telling someone that climate and health are intrinsically linked through a number of complex causal pathways – and the world's growing population needs to reduce their intake of things including ultra-processed foods, saturated fats from animals and eat more plant-based diets – is one thing. Telling people they can actively make an impact on their health and the health of their planet by growing their own food, cycling to work and eating less meat is another. Both rely on the same underlying principles, but one reframes them into everyday solutions, making them seem so much more personal and achievable.

One of the biggest threats to our capacity to achieve this change is from those with vested interests. They will continue to pay good money to confuse the message. We can fight them by refusing to be anything other than accessible, transparent and clear. We can fight them by uniting to advocate together. We can combat their attempts to trade in doubt, by actually believing our own school of thought that both climate change and global health can be addressed in this lifetime – but we have got to get moving ■

# Where in the world is the Climate/Health Nexus at COP21?

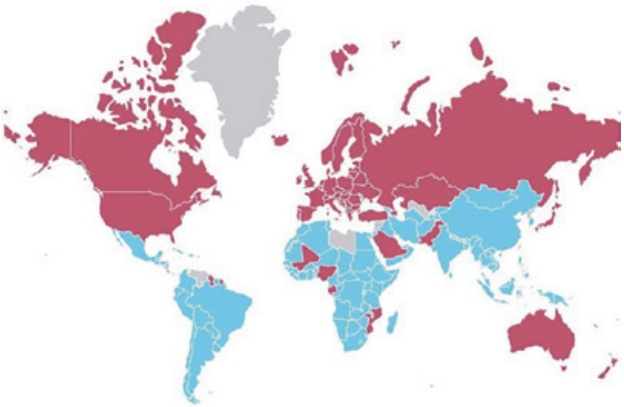
Yassen Tcholakov, Elizabeth Wiley, Lujain Al-Qodmani
World Medical Association

> Climate change has been described by the Lancet Commission as one of the greatest threats to human health in the 21st century.

The numerous health consequences of climate change are complex and multifaceted – ranging from direct impacts, such as those of heat exhaustion and trauma due to extreme weather events, to indirect phenomena such as shifting patterns of disease associated with changing transmission conditions, vector migration and much more complex impacts that are mediated through societal systems including health impacts of forced migration and conflict.

The foundation of the COP21 Climate Conference is parties' Intended Nationally Determined Contributions (INDCs). These contributions represent parties' commitments and plans to address climate change on a national and/or subnational level. As of November 30, 2015, 156 INDCs representing 184 of the 196 parties to the UNFCCC had been submitted. An analysis of these documents found almost two-thirds of represented parties' INDCs integrated health (65.8 per cent). There was significant variation across regions with African States (88.9 per cent), Asian States (69.1 per cent) and Latin American & Caribbean States (81.8 per cent) demonstrating leadership in integrating health, while Western European & Other States (13.8 per cent) and Eastern European States (13 per cent) less frequently incorporated health in INDCs. Furthermore, 90 parties include health in the context of adaptation, while only 28 mention health in the context of mitigation.

**Figure 1. Map of Health in INDCs**



**(blue indicates inclusion of health)**

Health has received a modest amount of attention in the Paris Agreement negotiations. A few key textual locations have been considered by parties for direct references to health within the language of the agreement:

- Preamble / General objectives / purpose: referring back to the Principles of the Convention and the necessity to combat adverse impacts of climate change;
- Adaptation: to reflect the efforts in including health in national adaptation plans;
- Mitigation: to leverage climate change and health co-benefits.

As responding to climate change represents one of the greatest global health opportunities of the 21st century, the Paris Agreement can be perceived as one of the most important health treaties of the century. Of significant importance is that key issues are adequately addressed and health can contribute to building the narrative required to increase commitments to key issues in the agreement namely:

- Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC) and equity: Integration of CBDR-RC, gender equity and intergenerational equity is closely tied to recognition of the social determinants of health;
- Long term goal: fundamentally, the extent to which climate change is tolerable is dependant on the evaluation of adaptation potential of all sectors including health; therefore, setting an ambitious mitigation objective within the agreement needs to be informed by the health sector;
- Loss and damage: adequately valuing health losses can galvanise early and effective climate action while also creating mechanisms to address health consequences of extreme whether events;
- Decarbonisation and technology transfer: clean energy technologies and a transition away from fossil fuels has direct health benefits and can be used to make the case for further investment and financing.

In short, although challenging, addressing climate change is an ethical, economic and health imperative – the greatest health opportunity of the 21st century. The contributions that the health sector can make to climate action are multiple including, but not limited to, providing expertise to climate decision makers, as well as advocating for and contributing to the development of national commitments in terms of mitigation and adaptation ■

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# Global survey of climate change and health policy reveals countries lack preparedness to protect the health of their citizens from climate change

Fiona Armstrong
Climate and Health Alliance, Australia

As reported by diverse scientific and health research organizations, including the World Health Organization (WHO), climate change poses a central and increasing threat to the health of the world's people this century.

However, little is known about how national governments are planning for this unprecedented public health challenge.

To address this knowledge gap, the Climate Change Health Policy Assessment Project was developed by the World Federation for Public Health Association's (WFPHA) Environmental Health Working Group.

An online survey of actions by national governments for completion by health non-governmental organisations from each country was developed with the support of the Climate and Health Alliance, Health Care Without Harm, and the Public Health Association of Australia. It was conducted during August and September 2015 by WFPHA with support from the World Medical Association and its Young Doctors Network.

National public health associations, medical associations, and other health professional organisations responded, providing information on the actions of 35 governments (15 developed and 20 developing nations).

The respondent countries are spread across six continents and include, USA, Canada, Brazil, Spain, China, Australia, Japan and a number of EU countries.

The survey revealed a lack of climate-health preparedness, with more than half of respondent countries (51 per cent) having no national plan to protect their citizens from the health impacts of climate change in their countries. Twelve countries (35 per cent) have not yet developed policies for long-term climate change and its impact on health and 13 countries (37 per cent) did not have any policies for public health adaptation.

The majority of respondent countries (77 per cent) have no comprehensive identification of health risks of climate change projections for their citizens and 66 per cent had done little towards identifying vulnerable populations and infrastructure, developing public health adaptation responses, assessing coping capacity or gaps in knowledge.

More than 40 per cent of the respondent countries had failed to involve the health sector in mitigation planning or invest in research on the health effects of climate change.

The specifics of these responses provide insight into the lack of focus of national governments around the world on climate and health. While these findings represent only a small number of countries, it is likely that generally speaking those countries that responded have attempted to tackle climate. Thus, a much broader global picture may reveal the lack of focus on health in the Climate Change Action Plans (CCAPs) to be more widespread.

Some positive examples bucking the trend include Taiwan and Lithuania, reporting comprehensive climate change action plans with both mitigation and adaptation strategies, along with climate-health risk surveillance, and early warning systems for extreme weather health risks. Others fared less well, including some less developed and climate-vulnerable countries, with little attention reportedly paid to the health risks of climate change, nor a national climate change response, despite facing significant climate-health threats.

These preliminary findings strongly emphasise the need for national governments to strengthen their policy planning efforts to increase the focus on health risks of climate change. More importantly, the study highlights the need for international leadership from COP21 participants, to ensure that the health impacts of climate change are recognised by national governments as a key threat to their citizens' health requiring immediate planning and action to prevent the catastrophic projections of the Intergovernmental Panel on Climate Change (IPCC) and the WHO.

Recommendations include:

- The development of national CCAPs that recognise and respond to climate change health risks as a mandatory element of international climate agreements;
- For all nations to develop national climate and health strategies as a core element of their national CCAP;
- For all national CCAPs to include strategies for mitigation, with a particular emphasis on transitioning away from fossil fuels;
- For health and medical professional associations to make it a priority to raise the awareness of the multiple public health risks from climate change and opportunities for improved health from climate action;
- For a collaborative information sharing platform and decision support tools be established to enable nations to access knowledge and share experience from leading countries on climate and health responses ■

## MORE INFO

The report is available at www.caha.org.au and www.wfpha.org

# WHO/UNFCCC climate and health country profiles provide evidence on the health impacts of climate change to empower governments to take action

World Health Organization

There is increasing evidence of both the direct effects of climate change on health, such as increased exposure to heat stress and extreme weather events, and the indirect effects, for example, changes in the transmission cycles of infectious diseases.

The degree of climate change varies geographically, and its impacts on health are strongly influenced by, and interact with, environmental determinants of health (such as availability of water), and social determinants of health (including poverty, access to health-supporting services such as water and sanitation, and coverage of preventive and curative health services). The scale and nature of health vulnerability to climate change therefore differs dramatically between countries, and even within countries.

**Country-specific evidence**

Recognising that countries need information that reflects their unique health risks and opportunities to protect health while mitigating climate change, World Health Organization (WHO) Director-General Margaret Chan and UNFCCC Executive Secretary Cristiana Figueres committed to support the development of country-specific evidence on climate change and health. The objective was to empower Ministers and negotiators to advocate and act on behalf of health in the lead-up to the critical COP21 agreement.

The Climate and Health Country Profile project responds to this commitment by bringing together leading experts in the climate and health communities to provide countries with reliable and relevant evidence in six main areas: current and future climate hazards; current and future health impacts due to climate change; current exposures and health risks due to air pollution; opportunities for health co-benefits from climate change mitigation; current levels of emissions; and the current status of national policy response.

**Focus on opportunities**

The Climate and Health Country Profiles focus not only on the health risks facing countries, but also on the opportunities that can be gained by taking decisive action against climate change. The health and climate projections presented in the profiles highlight the potential benefits to health of both strong global commitments to reduce greenhouse gas emissions and comprehensive national adaptation and mitigation policies, strategies and programmes. As such, the country profiles provide a tool for countries to reflect on the importance of commitments to low-carbon solutions, to evaluate the status of their policies and programmes at a national level and within a broader global context, and to scale up effective climate and health activities.

**Beyond COP21**

Countries are at different stages of progress in their efforts to protect health from climate change. However, given the current climate concerns for human health, there is still a long way to go in all countries in terms of adaptation and mitigation opportunities and commitments. The Climate and Health Country Profiles therefore aim to establish a set of core indicators that will support countries in tracking their future progress in reducing health vulnerability, strengthening climate resilience of health systems, and gaining health benefits from mitigation policies ■

## MORE INFO

The Climate and Health Country Profile Project is a joint collaboration of WHO and the UNFCCC, supported and in-part funded by the Wellcome Trust, working together with CDP, the World Meteorological Organization (WMO) and the World Bank, and with contributions by researchers at the London School of Hygiene and Tropical Medicine (LSHTM), University of East Anglia (UEA), and the University of Wisconsin-Madison (UW-Madison).

On November 16, 2015 the first set of Climate and Health Country Profiles were released, including Bangladesh, Brazil, China, Colombia, Egypt, Ethiopia, Ghana, Malaysia, Morocco, Nigeria, Oman, Peru, Philippines, Tanzania and Thailand. A Climate and Health Global Overview document was also published to complement the country profiles and to indicate the trends in climate change and health that we can expect to experience, depending on our collective level of ambition and effectiveness. The Climate and Health Country Profiles and the Global Overview can be found at: http://www.who.int/globalchange/resources/countries/en/. For further information please contact Tara Neville, Climate and Health Country Profile Project Manager.

# Why health concerns should prompt an ambitious Paris package

Genon Jensen
HEAL

Few national leaders - and neither US President Obama nor Jean-Claude Juncker, President of the European Union, mentioned health in their opening addresses to COP21 on 30 November. Indeed, it took the small country of Serbia to point out that public health was in danger.

And it is – here and now in Paris. When the World Health Organization (WHO) says it anticipates an additional 250,000 deaths each year as a result of climate change between 2030 and 2050, the risk seems remote. But when Dr Bernard Jomier from the Paris Mayor's office reminded a mainly European audience at the French medical association on Friday that the tiger mosquito is alive in the city, it was a reminder that chikungunya and dengue can now be spread here. Many European cities have already seen spikes in deaths and hospitalisations during heatwaves – and anyone with a pollen allergy knows that seasons are lengthening.

The threats mean that sooner or later health must reach the top of the climate agenda. Meanwhile, health professionals have found a positive way to speed up the process. They want cleaner technologies because these can revolutionise the quality of our lives and health – through cleaner air – as well as mitigating climate change.

One of their main calls is for cleaning up the air by reducing the use of fossil fuels. As a result of demonstrating the benefits for health of reducing reliance on coal-powered electricity generation in the UK, British doctors have been instrumental in the recent UK government decision to phase out coal by 2025.

In Poland, doctors are speaking out strongly on the need for cleaner air – even if their message falls on deaf ears. The country's energy system is based on coal, which makes air pollution one of the worst in the European Union. According to calculations by the Health and Environment Alliance (HEAL), the Leczna power coal plant project planned for southeastern Poland would create 300-962 million Euros in health costs over its lifetime. Total subsidies to existing coal energy in Poland (including external health costs of 9.9 billion Euros) may be higher than the budget of all public hospitals (7.1 billion Euros). Figures like these have helped make the issue front-page and television news. Dr Tadeusz Zielonka of the Polish Society of Lung Diseases told health professionals taking part in a meeting in Paris organised by the Health and Environment Alliance (HEAL) on Friday, 4 December 2015 that it was not only experts in lung health like himself that are concerned. His recent survey showed that 32 per cent of Polish doctors saw air pollution as a risk for health.

pic: CEE Bankwatch Network, CPP Turow – an ageing coal-fired electricity plant in Turow is one of the plants where new capacities are planned. The development of renewable energy sources will sidelined by these investments. More information at: bit.ly/nITHEA

Prompted by the prospect of government plans for 80 new coal-fired thermal plants, the called on the government to abandon its plans. The association's president, Dr Bayazit Ilhan says the International Monetary Fund (IMF) estimates Turkey's support to coal production and use at US$24.2 billion in 2015, including costs of global warming and external costs of domestic air pollution – equivalent to 2.8 per cent of the country's GDP.

The Climate and Health Alliance in Australia led by former nurse, Fiona Armstrong has estimated the externalised health costs associated with pollution from five coal-fired electricity generators in the Hunter Valley at $600 million per annum. Although faced with ferocious attacks from the coal industry, the findings helped to prompt the Royal Australasian College of Physicians (representing doctors in Australia and New Zealand) to divest from fossil fuels in June this year.

In India, health professionals are using the health co-benefits arguments at national level not only for advocacy on air quality but also in agriculture. Dr K. Srinath Reddy of the Public Health Foundation of India is promoting the nutritional and health benefits of "climate-smart agriculture", he says. Experience in India has clearly shown that subsidies to fossil fuels can be eliminated. In Dr Reddy's home city, Delhi, a court order simply decreed that all vehicles on the roads should switch from diesel use.

Dr. Maria Neira of WHO has high hopes for the healthy energy approach. "The best way to deal with climate change is to tackle the environmental risk factors," she told the meeting. "Everyone understands when you talk about air pollution. When you bring monetary estimates of the health benefits from air quality improvements, governments listen, especially if the complaining comes from a pneumologist."

## ABOUT THE AUTHOR

Genon Jensen is the Executive Secretary of the Health and Environment Alliance (HEAL)

# Sustainable food systems and health: The convenient truth of addressing climate change while promoting health

Cristina Tirado-von der Pahlen
UCLA, International Union of Nutritional Sciences – Climate and Nutrition

Feeding the world sustainably and promoting good nutrition and health under a changing climate is one of the main challenges of our time.

Climate change has a negative impact on food security, nutrition and the health of millions of vulnerable people, particularly poor women and children. According to the Intergovernmental Panel of Climate Change (IPCC), if current trends continue, it is estimated that an additional 1-3 billion people will be affected by water scarcity and 200-600 million will suffer from hunger by 2080 particularly in sub-Saharan Africa countries.

The global food system will be further challenged over the coming decades with increases in the human population, environmental degradation, changes in diet, urbanisation and greater demands on energy and water resources. Projections show that feeding a world population of 9 billion people in 2050 would require raising overall food production by some 60 per cent. High food output achieved in the past has placed great stress on natural resources and the agriculture sector specifically is a major source of greenhouse gas (GHG) emissions. The expansion of livestock and biofuel sectors plays a major role in deforestation and land degradation and globally about one third of food produced for human consumption per year is lost or wasted, both contributing further to GHG emissions.

Currently more than half of the world's 7 billion people are affected by a form of malnutrition. While there are still 795 million people that go hungry everyday and the health of 2 billion is compromised by nutrient deficiencies, 1.9 billion adults are overweight or obese. Changes in dietary patterns towards greater production and consumption of meat and animal products present a set of complex challenges for climate change mitigation, for agriculture, for health and for achieving food security and nutrition.

The Rome Declaration, adopted at the FAO and WHO Second International Conference on Nutrition in 2014, offers an to address the impacts of climate on undernutrition and at the same time to promote the co-benefits of sustainable and healthy dietary patterns to health and the environment.

A brief on *"Sustainable Food Systems and Health: The convenient truth of addressing climate change while promoting health"* will be launched at COP21 at an event on December 7th.

**Key messages of the brief include:**

**Sustainable and healthy diets can contribute to both a reduction in GHG emissions and improved public health and nutritional outcomes.** The IPCC AR5 report highlighted the opportunities to achieve co-benefits from actions that reduce emissions and at the same time improve health by shifting consumption away from animal products in high-meat consumption societies, toward less emission intensive healthy diets.


pic: ©Cristina Tirado-von der Pahlen, UCLA

**Enhance sustainable food systems by developing coherent public policies from production to consumption and across relevant sectors to provide year-round access to food that meets people's nutrition needs and promote safe and diversified healthy diets.** Policy coherence needs to be ensured through institutional and cross-sectoral collaboration.

**Promote integrated implementation of sustainable patterns of food production and consumption, respecting the carrying capacities of natural ecosystems.** This requires consideration of all the aspects and phases in the life of a food product, from production to consumption, and includes such issues as sustainable lifestyles, sustainable diets, food losses and food waste management and recycling, voluntary sustainability standards, and environmentally-friendly behaviours and methods that minimise adverse impacts on the environment and do not jeopardise the needs of present and future generations.

**Nutrition-sensitive climate adaptation and mitigation have many co-benefits for both health and the environment and there is a need to address food and nutrition security in the National Adaptation Plans (NAPs) and Nationally Appropriate Mitigation Action Plans (NAMAs).** A combination of nutrition-sensitive, climate-smart strategies and technological development, nutrition-smart investments in the agriculture and food sectors but also in social protection, education and community-based disaster risk reduction areas can contribute to ensure food and nutrition security in a changing climate.

**Adopt a multi-sectoral approach and good governance.** Reaching and sustaining food and nutrition security in a changing climate requires a multi-sectoral food system approach involving nutrition, agriculture, health, trade, education, water supply and sanitation and social protection – as well as taking into account cross-cutting issues like gender equality, governance, and state fragility ■

# How can actions against climate change be public health opportunities?

**Peter Byass**
Umeå Centre for Global Health Research, Sweden

> A lot of the possible personal and collective actions that help to minimise the extent and consequences of climate change seem to be - let's be honest - quite boring! We can all fly less, drive less, eat differently, buy less goodies, and so on. But, humans being what we are, these options don't seem fantastically exciting prospects to most people.

On the other hand, an alien visiting Earth might observe that the plethora of advertising that bombards us to fly more, drive more luxuriously, eat more than we need and buy as many things as possible also includes a significant component of sales talk about staying healthy or becoming healthier. So our alien might conclude that we all care a lot about our health.

Therefore it makes sense to join the dots between actions that are good for the planet and good for our individual health. In the recent Lancet Commission on Climate and Health, we highlighted the importance of these so-called 'health co-benefits'. One obvious example is someone who has a choice between driving to work or going by bike. While recognising it is not necessarily the best option for everyone, the cycling option brings joint benefits – it reduces carbon emissions and leads to health advantages.

There will never be global one-size-fits-all solutions to climate change, and that is also true of health co-benefits. In an accompanying comment from Ethiopia, energy development and security is highlighted as the way to bring health co-benefits. Traditionally Ethiopian households burnt biomass fuels indoors (usually without the benefit of chimneys) for cooking. That brought the co-hazards of carbon emissions and respiratory disease associated with the indoor smoke exposure. There has also been increasing electrification in many communities – but that raises the question of how the electricity is sourced! Now Ethiopia is on a pathway towards becoming a middle-income green economy – with massive investment in hydro-electricity, solar and wind farms. Another health co-benefit will result, as levels of indoor air pollution and associated disease fall.

In another comment from the World Health Organization, Director-General Dr. Margaret Chan also picked up on the health co-benefits that follow from using sustainable energy. WHO has estimated that 7 million deaths every year are attributable to air pollution, with 88 per cent of the world's people breathing air that does not meet WHO air quality guidelines. Imagine how many lives could be transformed by transitioning to clean renewable energy sources for producing electricity, cooking, heating and transportation.

Many actions that need to be taken to mitigate the climate change process (and safeguard the health of the planet) therefore also offer direct benefits to personal health. There is therefore a real sense that, if the global community succeeds in coming to agreement on a climate strategy at the Paris COP21 meeting, the world will also gain a major step forward in terms of public health. Let us hope so – for the future of the planet and her people!

## ABOUT THE AUTHOR

Professor Peter Byass is the Director of Umeå Centre for Global Health Research, Sweden. Twitter: @UCGHR

## MORE INFO

The full paper 'Health and climate change: policy responses to protect public health' can be seen in the Lancet Commission on Climate and Health: http://thelancet.com/pdfs/journals/lancet/PIIS0140-6736(15)60854-6.pdf


**Reality check: How UNFCCC tools, guidance, finance and cooperation support gender-responsive policy on the ground**

**Intended outcome:**
- Alert Parties and experts to useful tools, guidance and cooperative actions that can assist them in implementing gender-responsive climate policy and actions at the national and local levels.
- Provide an opportunity for Parties and experts to identify key recommendations and the ways in which Parties can take the recommendations forward under the UNFCCC.

**Moderator:** Ms. Lorena Aguilar, Global Senior Gender Adviser, IUCN

**Agenda**

**Welcoming remarks and stage-setting (5 min)**

**Presenters on EGM and toolkit for National Communications (15 min)**
- Ms. Verona Collantes-Lebale, Intergovernmental Specialist, UN Women
- Ms. Fleur Newman, Gender Focal Point, UNFCCC
- Ms. Verania Chao, Policy Specialist, UNDP

**Facilitated focus groups (45 mins)**
- Systemic issues – Ms. Emilia Reyes, Equidad de Género, Mexico
- Finance – Mr. Eric Zusman, Area Leader, Integrated Policies for Sustainable Societies Institute for Global Environmental Strategies (IGES)
- Technology – Ms. Stella Gama, Malawi
- National Communications – Ms. Teodora Obradovic Grncarovska, UNFCCC Focal Point for the Republic of Macedonia and State Councilor on Climate Change; and Ms. Irene Dankelman, Gender Advisor to the Netherlands Delegation

**Way forward:** facilitated by Ms. Irene Dankelman and Ms. Stella Gama (20 min)
- Plenary discussion

**Closing Remarks (5min)**

# Health and conservation co-benefits in action in Borneo

Ashley Wineland
Health In Harmony

The 21st session of the UN climate talks is all about solutions. Countries have to agree on these solutions and finalise a universal and binding agreement so that the world can begin to tackle the issue of climate change.

But while everyone at COP21 is debating potential solutions and their effectiveness, the ASRI Clinic in West Kalimantan, Borneo is already implementing real solutions and making incredible impacts within the local community.

Rainforests in Borneo are being deforested at rapid rates for timber, palm oil, and other resources, and threaten the health of the forest and of surrounding communities. Non-profits around the world have targeted this island in Indonesia as critical to environmental conservation and have attempted to create communities to decrease deforestation. When Dr. Kinari Webb, Dr. Hotlin Ompusunggu, and Dr. Antonia Gorog co-founded this non-profit clinic in 2007, they embraced the practice of "radical listening". They held hundreds of hours of community meetings to understand community issues leading to logging and to determine the services needed by the community. They learned how community members knew they needed the forests and wanted to preserve it, but the lack of healthcare made logging necessary. People were logging in order to pay for the healthcare of themselves and their family.

Now ASRI, an acronym that means, "harmoniously balanced", has been providing quality healthcare to communities in West Kalimantan and facilitating the conservation of their forests for seven years. They do this by providing economic discounts to communities who have ceased logging activity, allowing non-cash payments, and providing programmes that communities need. Every programme at ASRI has been developed as a result of community conversations and members expressing need for specific support. This includes education on sustainable and organic agriculture, ASRI Kids, Goats for Widows which distributes goat to women to help provide economic independence and security, and a Forest Guardian in every partner community who monitor logging in their own community and work as a liaison between the community and ASRI.

After countless aid and development programmes have previously failed in decreasing deforestation and assisting local people in West Kalimantan, ASRI is making wondrous strides and impacting the area in a real and meaningful way. Their integrative and community-based healthcare and conservation programme has helped to facilitate a more than 68 per cent decrease in illegal logging, and has served thousands of patients.

These are the solutions we need. If we truly want to end climate change and the destruction it leaves behind, we must radically listen to communities on the frontlines. We must follow the lead and example of communities like those in West Kalimantan and allow solutions to begin locally and organically. These communities have so much to offer, so much knowledge of the devastation of climate change, and they know what real solutions look like in their communities ■

## MORE INFO

healthinharmony.org

## WOMEN: ACTIVE AND ENGAGED IN THE FIGHT AGAINST CLIMATE CHANGE

**COP 21 Gender Day at the Morocco Pavilion, Tuesday, 8 December, 2015 (10 a.m. – 4 p.m.)**
***Please RSVP clicking here.***

**AGENDA:**

**10 – 10.30 a.m. The Gender and Climate Nexus: Setting the stage**
Ms. Hakima El Haite, Minister Delegate in charge of Environment, Morocco
Ms. Ségolène Royal, Minister for Ecology, Sustainable Development and Energy, France (tbc)

*Launch of the Joint UN Women and UNEP Programme on Women's Sustainable Energy Entrepreneurship and Access* by Dr. Phumzile Mlambo-Ngcuka, UN Women Executive Director, and Mr. Achim Steiner, UNEP Executive Director.

**10.30 a.m. – 12.15 p.m. Sustainable Energy Access**
High-Level Panel, including Ms. Isabella Lövin, Minister of International Development Cooperation, Sweden; Ms. Ligia Noronha, Director, DTIE UNEP; Mr. Ahmed Baroudi, General Director, Energy Investment Company, Morocco; Dr. Naoko Ishii, CEO and Chairperson, Global Environment Facility (GEF); Mr. Sarwono Kusumaatmadja, Chair of the Advisory Council on Climate Change, Indonesia; Dr. Yannick Glemarec, Deputy Executive Director, UN Women.

**12.30 – 2 p.m. Climate-Resilient Agriculture**
High-Level Panel, including Mr. Fernando Frutuoso de Melo, Director General for International Cooperation and Development, European Commission; Ms. Charafat Afilal, Minister delegate in charge of Water, Morocco; Dr. Pape Abdoulaye Seck, Minister of Agriculture and Rural Equipment, Senegal; Dr. Yannick Glemarec, Deputy Executive Director, UN Women; Mr. Satya Tripathi, Director, UNORCID.

**2.30 – 4 p.m. Women's Engagement in Climate-Change Negotiations**
High-Level Exchanges and Reflections, including Ms. Pascale Boistard, State Secretary for Women's Rights, France; Ms. Mara Marinaki, Principal Adviser on Gender and the implementation of UNSCR1325, European External Action Service (EEAS); Ms. Catherine Coutelle, President of the Delegation on women rights at French National Assembly; Dr. Yannick Glemarec, Deputy Executive Director, UN Women; Ms. Fathia Bennis, President of Women's Tribune, Morocco; Mr. Driss El Yazami, Chairman of the National Human Rights Council, Morocco (Moderator).

KINGDOM OF MOROCCO
Ministry delegate to the Minister of Energy, Mining, Water and Environment, in charge of Environment

TOUS ENSEMBLE POUR LE CLIMAT

UN WOMEN

# Side events calendar

| DATE | TIME | VENUE | TITLE | ORGANISERS |
|---|---|---|---|---|
| MONDAY 7th DECEMBER | 11:30–13:00 | Observer rm 03 | Integrated technologies towards 100% renewables: Case studies at local, country and regional levels | International Solar Energy Society (ISES), International Hydropower Association (IHA), World Bioenergy Association (WBA), World Wind Energy Association (WWEA) |
| | 11:30–13:00 | Observer rm 01 | Cities and Climate Change: Energising Climate Action through Commitments and City Climate Finance | C40 Cities Climate Leadership Group (C40) and Yale University |
| | 11:30–13:00 | Observer rm 02 | Fossil Fuel Subsidies and Climate Change: national action and international phase out | International Institute for Sustainable Development (IISD), Finland, New Zealand |
| | 11:30–13:00 | Observer rm 04 | Deal with it! People, Rights, Justice | Cooperation internationale pour le développement et la solidarité (CIDSE), Caritas Internationalis (CI), Friends of the Earth International (FOEI) and MISEREOR, German Catholic Bishops' Organisation for Development Cooperation (MISEREOR) |
| | 13:15–14:45 | Observer rm 08 | Strategic Climate Change Partnerships: Opportunities and actions in Developing Countries | Kenya, Leadership for Environment and Development International (LEAD International), William J. Clinton Foundation |
| | 13:15–14:45 | Observer rm 01 | Compact of Mayors: the world´s largest coalition on local climate action and towards SDGs/HABITAT3 | ICLEI-Local Governments for Sustainability (ICLEI), United Cities and Local Governments (UCLG) |
| | 13:15–14:45 | Observer rm 02 | Food security under a changing climate | United Nations (UN) |
| | 13:15–14:45 | Observer rm 03 | Joint side-event of UNFCCC and UNEP: Presentation of UNEP 2015 Emissions gap report | Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) |
| | 13:15–14:45 | Observer rm 04 | Update on the ICA process | Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) |
| | 15:00–16:30 | Observer rm 01 | Global Covenant of Mayors: Towards carbon neutral and inclusive cities | Climate Alliance (Klima-Bündnis), Belgium, Climate Alliance Austria (CAA), University of Delaware, Center for Energy and Environmental Policy (CEEP) |
| | 15:00–16:30 | Observer rm 02 | Sustainable Energy for All: Marrying climate change, development imperatives | United Nations Foundation (UNF), Climate and Health Limited, HELIO International (HELIO) |
| | 15:00–16:30 | Observer rm 03 | Supporting poor, vulnerable and indigenous communities | International Institute for Environment and Development (IIED), Grupo de Trabalho Amazonico (GTA), Natural Justice |
| | 15:00–16:30 | Observer rm 04 | Metrics of progress towards net zero and the two degree goal: science for a safe climate | University of Oxford, Environmental Change Institute (ECI), Green Economics Institute (GEI), Victoria University Wellington (VUW) |
| | 16:45–18:15 | Observer rm 02 | The Importance of Addressing Oceans and Coasts in an Ambitious Agreement at the UNFCCC COP 21 | International Coastal and Ocean Organization (ICO), South Africa, World Ocean Network (WON) |
| | 16:45–18:15 | Observer rm 03 | Market Mechanisms with "Bottom up" Climate Agreements – Opportunities for Linking Jurisdictions | International Emissions Trading Association (IETA), Duke University, Electric Power Research Institute (EPRI) |
| | 16:45–18:15 | Observer rm 04 | Mainstreaming climate change within financial institutions | Corporación Andina de Fomento (CAF), Asociación Interamericana para la Defensa del Ambiente (AIDA), European Investment Bank (EIB) |
| | 16:45–18:15 | Observer rm 01 | Driving climate action through the Compact of States and Regions and the Under2MOU | The Climate Group (TCG), Network of Regional Governments for Sustainable Development (nrg4SD) |
| | 18:30–20:00 | Observer rm 04 | East Asia Low Carbon Growth Dialogue | National Institute for Environmental Studies (NIES), Institute for Global Environmental Strategies (IGES), Japan, University of Technology Malaysia (UTM) |
| | 18:30–20:00 | Observer rm 03 | Reducing methane emissions andending routine gas flaring in oil & gas operations | Norway, Business for Social Responsibility (BSR), Colegio de Abogados Especialistas en Derecho Ambiental de Colombia (CAEDAC) |
| | 18:30–20:00 | Observer rm 02 | Pathways to Sustainable Energy for a Climate Friendly World | United Nations (UN) |
| | 18:30–20:00 | Observer rm 01 | The pivotal role of water in climate change adaptation and mitigation | United Nations (UN) |

# Impacts of climate change on health in tribal communities of Odisha, India

**Mayarani Praharaj**
College of Engineering and Technology, Bhubaneswar

The devastating effects of global warming and climate change are now a regular phenomenon the world over. Global warming will result in heatwaves and severe temperatures that will cause heat related diseases like heat cramp, heat exhaustion and heat stroke. It will have implications for food production, water supply, air quality, settlements and human health. Climate change contributes to thousands of deaths and illnesses every year in the Odisha, a state on the east coast of India. A heatwave in 1998 killed around 1500 people in the state, otherwise known for its moderate temperature. The maximum mean daily temperature of the state is gradually increasing, as is the mean daily minimum temperature. Bhubaneswar, the Capital of Odisha saw a record temperature of 46.3 degrees Celsius in June 2005 – 10 degrees above the norm.

In India, about 50 per cent of the tribal population of the country is concentrated in the states of Madhya Pradesh, Chhatisgarh, Jharkhand, Bihar and Odisha. Odisha has been the homeland of 62 tribes and all the districts of Odisha have tribal populations. The reason for the high percentage is attributed to the geographical characteristics, including water sources, mountain ranges and forests. However, climate change threatens indigenous peoples' access to traditional food and portable water, particularly as a result of desertification and drought – Odisha is one of the most badly affected states.

Tribal people are dependent on a wide variety of native plants for food and medicine. The tribes of Odisha have preserved a rich heritage of knowledge of medicinal plants and their use to cure different diseases. But due to deforestation and desertification, local tribes are failing to collect food for survival and medicinal plants for health care. Tribal women are predominantly vulnerable to the effects of climate change due to their reduced mobility. Scarcity of water poses another impact on women as they need to make greater efforts to collect and store water. What's more, climate change related food insecurity may result in especially high health risks for women, making them susceptible to illness.

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) is a framework that contributes to the understanding of the conditions and factors that underpin the survival and development of indigenous peoples and cultures. Examples of traditional and innovative adaptation of indigenous peoples' practices are already being implemented in response to various climate change risks, including rainwater harvesting, supplementary irrigation, and traditional farming techniques to protect watersheds. The tribal people often

lack basic information about climate change policies. Their active participation in climate change polilcy may help them to respond more adequately to climate change.

Tribal peoples can contribute significantly to the design and implementation of sustainable mitigation and adaptation measures, by offering examples and models of effective adaptation based on valuable traditional knowledge. There is a need to create ecologically sensitive areas to eradicate drought and desertification for a sustainable future. To this aim, watershed development will be useful. There is a need to design storage reservoirs and water harvesting structures so that the water scarcity can be solved.

In the last decade the state of Odisha has taken a number of steps to address climate change through employing mitigation strategies. There is a need to create a platform from which scholars and activists can perform academic debate on climate change and its mitigation. Efficient implementation of policies and a long-term strategy for disaster mitigation and risk reduction are highly needed to reduce health impact of climate change in tribal communities of Odisha ■

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United Nations Entity for Gender Equality and the Empowerment of Women