

# UNFCCC Conference of the Parties: 22<sup>nd</sup> Session

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Manon Rouanet

Vice Chairs:

Kieran Sharma

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Jad El Tal



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## UNFCCC Conference of the Parties: 22<sup>nd</sup> Session

Dear Delegates,

Welcome to the 22nd Session of the UNFCCC Conference of the Parties! We are coming together to prepare for the entry into force of the Paris Agreement, and we aim to continue to reduce greenhouse gas emissions and face the severe threat posed by climate change. This conference hopes to lead the way to a sustainable future. This year, the focus of our discussion will be on the topics of climate refugees, the impact of climate change on human health, and the necessary steps to enforce the Paris Agreement and further reduce greenhouse gas emissions.

My name is Manon Rouanet and I will be your chair at SSUNS 2016. This will be my seventh year participating in SSUNS, first as a delegate and later as a staffer. This year is my eighth year involved in Model UN, and I am very excited to be chairing again this year, and hope to have an amazing committee for my last SSUNS before I graduate in the spring. I was born in Paris and later moved to Canada - first Toronto and then to Montreal for my studies. I am in my fourth year at McGill studying Cognitive Neuroscience with a minor in International Relations. It is always a pleasure to be at SSUNS and I am looking forward to meet all of you and seeing the great ideas you all come up with!

It is also my pleasure to introduce your vice-chairs:

Sinead Camps is in her third year of her Bachelor of Arts, majoring in Economics and minoring in Communications. She participated in a lot of Model United Nations throughout her high school and university career, and she cannot wait to vice chair at SSUNS 2016. She can also recite the alphabet backwards.

Jad El Tal is a third year studying Political Science and Middle Eastern Studies as a Joint Honors student. When not in MUN, Jad can be found singing in an acappella group called Chromatones, where he arranges the awesome medleys and mash-ups for the group! He's really excited to tackle climate change for a few days with you all in November!

Last but not least, Kieran Sharma was born in Hong Kong and raised in London, England and Toronto, Canada. Kieran is a third year student pursuing a Bachelor of Science in Physiology. He is an aspiring medical student and is excited to see how this committee works to mitigate the health risks associated with climate change. He has worked as a staffer in various MUN conferences over the past four years, holding positions such as committee director and vice-chair. He is a devoted fan of the Toronto Maple Leafs, and his favourite movie is Leon: The Professional.

We're all looking forward to seeing you at SSUNS 2016!

Your dais,

Manon, Kieran, Jad, and Sinead



### Topic: The Impact of Climate Change on Human Health

#### Section 1: Background Information

There is near unanimous consensus among the scientific community that the rising atmospheric concentration of greenhouse gases due to human actions will cause warming at the Earth's surface.<sup>1</sup> The Intergovernmental Panel on Climate Change (IPCC) projects an increase in global average temperatures of between 1.4 and 5.8°C by the end of the century, as well as a rise in sea level of approximately 40cm.<sup>2</sup> With an increase in global ambient temperatures, extremes of the hydrologic cycle (floods and droughts) are projected to increase in frequency and severity. Global average annual rainfall will increase, along with an increase in the severity of precipitation events, while many mid- and lower-latitude regions will become drier.<sup>3</sup> Overall, climate variability is expected to increase in a warmer world.

Evidence is mounting that such changes in the broad-scale climate system are already affecting human health through a range of pathways, including increased frequency and intensity of heatwaves, increased floods and droughts, changes in the distribution of vector-borne diseases, and malnutrition from crop failures.<sup>4</sup> In fact, the World Health Organization estimates that the warming and precipitation trends due to anthropogenic climate change of the past 30 years claim over 150,000 lives annually. This number is expected to increase to 250,000 by the middle of the century.<sup>5</sup> Figure 1 summarizes the primary pathways by which climate change adversely affects human health, as well as the roles of pre-emptive mitigation policies and adaptive strategies in resolving the issue, which will be further described in Section 3.

#### Thermal Stress

Mortality rates increase in hot weather, with elderly people (especially women) being the most affected due to diminished physiological capacity for thermoregulation.<sup>6</sup> It is highly probable that climate change will be associated with progressive increases in the frequency of heatwaves.<sup>7</sup> Much of the excess mortality from heatwaves is related to cardiovascular, cerebrovascular, and respiratory causes. The striking mortality excess (approximately 30,000 deaths) during the extreme heatwave of August 2003 in Europe attests to the lethality of such events, even in high-income countries.<sup>8</sup> While a proportion of these deaths occurred in susceptible populations who were otherwise likely to have died in the near future, there were substantial numbers of potentially preventable deaths.

<sup>1</sup> Anthony J. McMichael, Rosalie E. Woodruff, Simon Hales, "Climate change and human health: present and future risks," *Lancet* 367 (2006): 859, [http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(06\)68079-3.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(06)68079-3.pdf).

<sup>2</sup> David R. Easterling et al., "Climate extremes: observations, modeling, and impacts," *Science* 289 (2000): 2068, <http://science.sciencemag.org/content/sci/289/5487/2068.full.pdf>.

<sup>3</sup> McMichael et al., "Climate change and human health" (see footnote 1).

<sup>4</sup> A. Haines et al., "Climate change and human health: Impacts, vulnerability and public health," *Public Health* 120 (2006): 585, [http://www.publichealthjrn.com/article/S0033-3506\(06\)00005-9/pdf](http://www.publichealthjrn.com/article/S0033-3506(06)00005-9/pdf).

<sup>5</sup> Jonathan A. Patz et al., "Impact of regional climate change on human health," *Nature* 438 (2005): 310, <http://www.nature.com/nature/journal/v438/n7066/pdf/nature04188.pdf>.

<sup>6</sup> Rupa Basu and Jonathan M. Samet, "Relation between Elevated Ambient Temperature and Mortality: A Review of Epidemiologic Evidence," *Epidemiologic Reviews* 24 (2002): 190, <http://epirev.oxfordjournals.org/content/24/2/190.full.pdf+html>.

<sup>7</sup> Haines et al., "Climate change and human health" (see footnote 4).

<sup>8</sup> McMichael et al., "Climate change and human health" (see footnote 1).



Urban centres are often particularly affected by thermal stress, largely due to the so-called “urban heat island effect” whereby inner urban environments with high thermal mass and low ventilation absorb and retain heat.<sup>10</sup> Most cities show a large heat island effect, registering 5-11°C warmer than surrounding rural areas.<sup>11</sup> In 2003 in Paris, many nursing homes and other assisted-living communities were not air-conditioned, and many elderly patients were not promptly moved to air-conditioned shelters and rehydrated with fluids.<sup>12</sup> Improvements in public health preparedness are necessary to mitigate preventable heat-related deaths.

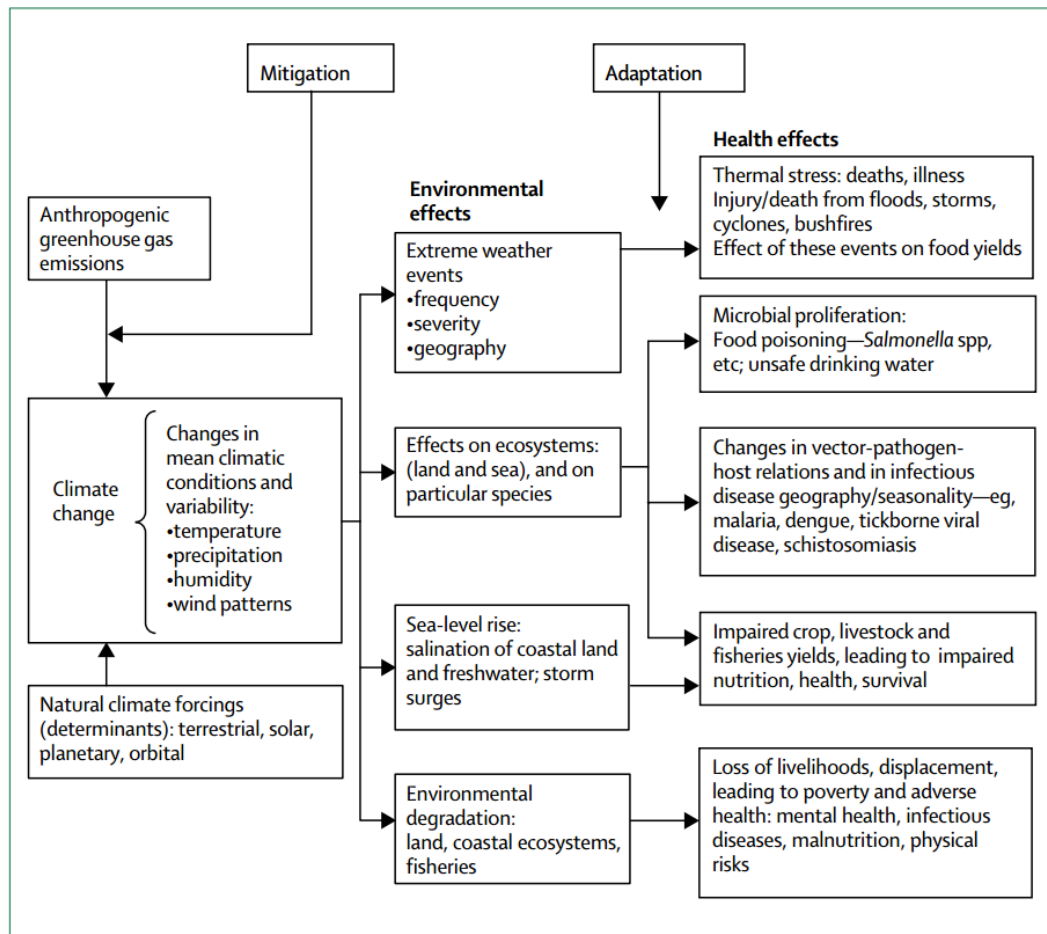


Figure 1: Schematic summary of main pathways by which climate change affects population health

<sup>12</sup> Dhainaut et al., "Unprecedented heat-related deaths" (see footnote 9).



### Infectious Diseases

Transmission of many infectious disease agents is sensitive to climatic variation. Infectious agents (such as protozoa, bacteria, and viruses) and their associated vector organisms (such as mosquitoes, ticks, and sandflies) are devoid of thermostatic mechanisms, thus reproduction and survival rates are strongly affected by temperature fluctuations.<sup>13</sup> For example, both salmonella and cholera bacteria proliferate more rapidly in higher temperatures – salmonella in animal gut and food, cholera in water. In regions where low temperature, low rainfall, or absence of vector habitat restrict transmission of vector-borne disease, climatic changes could tip the ecological balance and trigger epidemics. Epidemics may also result from climate-related migration of pathogen hosts or human populations.<sup>14</sup> Even small changes in disease distributions may mean that new populations that often lack acquired immunity are exposed, resulting in more serious clinical disease.

Many recent studies have examined the relation between short-term climatic variation and occurrence of infectious disease. In the Asia-Pacific region, El Niño and La Niña events have been shown to increase the occurrence of dengue fever outbreaks.<sup>15</sup> Similarly, inter-annual climatic variations in Australia affect outbreaks of Ross River virus disease.<sup>16</sup> Bluetongue, a disease of livestock, has increased its northern range in Europe since 1998, paralleling warming trends while controlling for many biological and socioeconomic factors.<sup>17</sup> Temperature has also been found to affect food-borne infectious disease. Increased notifications of food poisoning and diarrhoeal diseases have been shown to accompany short-term temperature increases in the UK,<sup>18</sup> and strong linear associations have been noted between temperature and incidences of salmonellosis in Europe and Australia.<sup>19</sup>

### Floods & Droughts

Floods have a wide variety of health impacts; some that arise during or soon after the flooding event (such as injuries, communicable diseases, or exposure to toxic pollutants), and some that occur with longer latency (such as malnutrition or mental health disorders). Flooding facilitates entry of human sewage and animal wastes into waterways and drinking water supplies, potentiating water-borne disease.<sup>20</sup> In some cases, flooding may also lead to the mobilization of dangerous chemicals from storage or remobilization of chemicals already in the environment, such as pesticides.<sup>21</sup> Following floods, increases in diarrhoeal and respiratory diseases are reported in both high- and low-income countries. In industrialized countries, while infections are less of a problem, marked increases in

<sup>13</sup> R.S. Kovats et al., “Early effects of climate change: do they include changes in vector-borne diseases?” *Phil. Trans. R. Soc. Lond.* 356 (2001): 1057, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1088500/pdf/TB011057.pdf>.

<sup>14</sup> McMichael et al., “Climate change and human health” (see footnote 1).

<sup>15</sup> Simon Hales, Sari Kovats, Alistair Woodward, “What El Nino can tell us about human health and global climate change,” *Global Change & Human Health* 1 (200): 66, <http://www.bvsde.paho.org/texcom/cd051477/hales.pdf>.

<sup>16</sup> Ibid.

<sup>17</sup> Bethan V. Purse et al., “Climate change and the recent emergence of bluetongue in Europe,” *Nature Rev. Microbiol.* 3 (2005): 171, <http://www.nature.com/nrmicro/journal/v3/n2/pdf/nrmicro1090.pdf>.

<sup>18</sup> McMichael et al., “Climate change and human health” (see footnote 1).

<sup>19</sup> R.S. Kovats et al., “The effect of temperature on food poisoning: a time-series analysis of salmonellosis in ten European countries,” *Epidemiol. Infect.* 132 (2004): 443, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2870124/>.

<sup>20</sup> McMichael et al., “Climate change and human health” (see footnote 1).

<sup>21</sup> Euripides Euripidou, Virginia Murray, “Public health impacts of floods and chemical contamination,” *Journal of Public Health* 26 (2004): 379, <http://jpubhealth.oxfordjournals.org/content/26/4/376.long>.

common mental disorders such as anxiety and depression often occur, likely due to damage to the home environment and economic losses as a result of flooding.<sup>22</sup>

Droughts have direct impacts on food crops, often causing disastrous regional famines and consequent malnutrition. Droughts can also influence food supply by altering the ecology of plant pathogens. In addition, droughts may lead to increased occurrence of forest fires, causing air pollution and respiratory complications.<sup>23</sup>

## Inequality

It is important to note that all of the aforementioned health risks are strongly affected by non-climatic determinants, such as socioeconomic status, age, gender, ethnicity, displacement, or disability. There is strong evidence that health impacts of climate change disproportionately affect poorer populations and children, and, in certain cases, differ between men and women. Climate change is likely to widen existing health inequalities, both between and within populations.<sup>24</sup>



Figure 2: Country size reflects cumulative emissions of greenhouse gases, to 2002



Figure 3: Country size reflects WHO estimates of fatalities due to four major climate-sensitive health effects – malaria, malnutrition, diarrhea, and inland floods

<sup>22</sup> Haines et al., “Climate change and human health” (see footnote 4).

<sup>23</sup> Patz et al., “Impact of regional climate change on human health” (see footnote 5).

<sup>24</sup> “World Health Organization Conference on Health and Climate Change – Conference Report,” *World Health Organization*, accessed May 29, 2016, <http://www.who.int/globalchange/mediacentre/events/climate-health-conference/whoconferenceonhealthandclimatechangefinalreport.pdf?ua=1>.





### Section 2: Past Actions

Until recently, health was rarely referenced in climate talks, and health benefits of climate action were not formally recognized or monitored. Health systems have not been major beneficiaries of climate finance – either to improve their resilience to climate change or to put health facilities on an environmentally-friendly and low-carbon trajectory. Nor did climate finance consider the health benefits of mitigation investments by sectors such as housing or transport.<sup>25</sup>

Since the late 2000s, however, the health impacts of climate change and the health benefits of improved adaptation and mitigation strategies have received increased attention from climate and health experts as well as negotiators.<sup>26</sup> Numerous policies and frameworks have been put in place to draw recognition to the deep interrelation between climate variation and health consequences, and to devise ways to include health considerations within plans to combat climate change.

#### World Health Organization (WHO)

Since 2008, the World Health Organization has shown leadership in raising awareness of the threats posed by climate change to health. Specifically, WHO has provided evidence, technical guidance, and piloted approaches to protect health from climate risks.

In May 2008, at the Sixty-first World Health Assembly (WHA), Member States of the WHA unanimously adopted a resolution entitled “Climate change and health.” The resolution urged Member States to take decisive action to address health impacts from climate change, warning of its potential risks on human health. It also called on WHO to scale up technical support to Member States for assessing and addressing the implications of climate change for health and health systems.<sup>27</sup>

In response to this resolution, WHO published a work plan on climate change and health in March 2009, to be implemented over the following five year period. The overall aim of the work plan was to support health systems in all countries, in particular low- and middle-income and small island states. This was done in order to enhance capacity for assessing and monitoring health vulnerability, risks, and impacts due to climate change; to identify strategies and actions to protect human health, particularly of the most vulnerable groups; and to share knowledge and good practices.<sup>28</sup> The plan was centered on the following four objectives:

1. Raise awareness, with the hope that a better understanding of the risks and effects of climate change on health will motivate and facilitate behavioural change and societal support for actions taken to reduce greenhouse gas emissions;

<sup>25</sup> “Health events in the 2015 UN climate change conference of parties (COP21),” *World Health Organization*, accessed May 29, 2016, <http://www.who.int/globalchange/mediacentre/events/cop21-health-events/en/>.

<sup>26</sup> Ibid.

<sup>27</sup> “Climate change and health (WHA 61.19),” *Sixty-First World Health Assembly*, last modified May 24, 2008, [http://www.who.int/globalchange/A61\\_R19\\_en.pdf?ua=1](http://www.who.int/globalchange/A61_R19_en.pdf?ua=1).

<sup>28</sup> “Climate change and health – Report by the Secretariat,” *World Health Organization*, last modified March 6, 2009, [http://www.who.int/globalchange/A62\\_11\\_en.pdf?ua=1](http://www.who.int/globalchange/A62_11_en.pdf?ua=1).



2. Engage in partnerships with other United Nations organizations and sectors, other than the health sector at national, regional, and international levels, in order to ensure that health protection and health promotion are central to climate change adaptation and mitigation policies;
3. Promote and support the generation of scientific evidence;
4. Strengthen health systems to cope with the health threats posed by climate change, including emergencies related to extreme weather events and sea-level rise.<sup>29</sup>

WHO has been remarkably successful in achieving these goals. The organization has generated widespread awareness of climate risks to health among health leaders, health and meteorological professionals, climate leaders, and the general public.<sup>30</sup> As a result, 95% of National Adaptation Programmes of Action (NAPAs) from least developed countries identify health as a priority sector affected by climate change, and 73% of said NAPAs have included health interventions within their adaptation needs.<sup>31</sup> WHO has formed partnerships with a number of major health non-governmental organizations (NGOs) to promote awareness raising, as well as with the United Nations Framework Convention on Climate Change (UNFCCC) to ensure that health is appropriately reflected in policy, planning, and financial support processes. As for the generation of scientific evidence, over 1000 papers on health and climate change have been published in peer-reviewed journals since 2009, and the evaluations of health risks have been included in three IPCC assessment reports. Finally, WHO has also seen success in health system strengthening, having conducted 17 major projects on health adaptation to climate change in 14 countries, as well as worldwide assessments of health vulnerability to climate change and pilot projects on green and safe health services.<sup>32</sup>

WHO has released a subsequent work plan for the 2014-2019 period committed to continuing its pursuit of the aforementioned objectives. In contrast to its predecessor, the new plan seeks to establish a stable partnership “platform” to enable WHO to work with other organizations with complementary capacities (such as NGOs on awareness raising, collaborating centres on research, and development banks on financing). This action will support and build on existing partnerships, including strengthening engagement with the Global Framework for Climate Services (GFCS) and the Climate and Clean Air Coalition to reduce Short-Lived Climate Pollutants (CCAC), as well as formalizing the WHO/World Meteorological Organization (WMO) Climate and Health Office.<sup>33</sup>

### *Global Framework for Climate Services (GFCS)*

The GFCS was established in 2011 as a global, multi-stakeholder framework to reduce the vulnerability of society to climate-related hazards through better provision of climate services – more specifically, tailored weather and climate information designed to inform

<sup>29</sup> “Climate change and health – Report by the Secretariat” (see footnote 28).

<sup>30</sup> World Health Organization, “Health, climate change, and WHO,” (presentation, 2011), [who.int/globalchange/FinalDonorReport2011.ppt](http://www.who.int/globalchange/FinalDonorReport2011.ppt).

<sup>31</sup> Lucien Manga et al., “Overview of health considerations within National Adaptation Programmes of Action for climate change in least developed countries and small island states,” *World Health Organization* (2010), [http://www.who.int/phe/Health\\_in\\_NAPAs\\_final.pdf](http://www.who.int/phe/Health_in_NAPAs_final.pdf).

<sup>32</sup> World Health Organization, “Health, climate change, and WHO” (see footnote 30).

<sup>33</sup> “WHO Workplan on Climate Change and Health, Aims and Objectives: 2014-2019,” *World Health Organization*, last modified February 2015, [http://www.who.int/globalchange/health\\_policy/climate-change-and-health-workplan-2014-2019.pdf?ua=1](http://www.who.int/globalchange/health_policy/climate-change-and-health-workplan-2014-2019.pdf?ua=1).





decision making across a number of different sectors.<sup>34</sup> In partnership with WHO, the GFCS identifies health as one of its priority areas. Acknowledging that the climate services community often does not fully appreciate all public health concerns and needs, the GFCS aims to bridge this gap by fostering collaboration to develop reliable health and climate-related tools and services for various timescales. These services aim to support health priorities, such as improving disease surveillance and extending the lead-time to prevent and prepare for climate-related outbreaks and emergencies.<sup>35</sup>

### WHO/WMO Climate and Health Office

The WHO/WMO Climate and Health Office was established in 2014 under the auspices of the GFCS to promote the coordinated development and use of climate services to improve public health. The joint office is designed to provide support in the pursuit of the goals of the GFCS in four main areas:

1. It will ensure that the potential contribution of meteorological services is reflected in international health policy forums, and it will propose a strategic roadmap for the WMO and the meteorological community to better support the health sector to access and use climate information and services;
2. It will provide coordination, resource mobilization, and technical support to demonstration projects and research. This initiative will support collaboration between health partners and national meteorological departments to make better use of weather information and seasonal forecasts to enhance risk assessment and preparedness for diseases such as malaria, diarrhea, and malnutrition;
3. It will strengthen coordination and collaborative initiatives between WHO and the WMO, and with the wider community of practice for climate service action for health;
4. It will provide communications and capacity development by developing awareness-raising and technical guidance materials.<sup>36</sup>

### Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC)

Short-lived climate pollutants (SLCPs) are agents that have a relatively short lifetime in the atmosphere – ranging from a few days to a few decades – and exert a warming influence on climate. The main SLCPs are black carbon, methane, tropospheric ozone, and hydrofluorocarbons (HFCs). SLCPs are dangerous air pollutants with various detrimental impacts on human health. Fast actions on SLCPs, such as the widespread adoption of advanced cookstoves and clean fuels, have the potential to prevent over two million premature deaths due to air pollution each year.<sup>37</sup>

The CCAC was launched by the United Nations Environment Programme (UNEP) and six states – Bangladesh, Canada, Ghana, Mexico, Sweden, and the United States – in February 2012. The coalition's objectives are to address SLCPs by:

<sup>34</sup> "Global Framework For Climate Service: Climate Services Action For Africa Project," *World Food Programme*, accessed May 29, 2016, <http://www.wfp.org/node/644231>.

<sup>35</sup> "Health," *Global Framework for Climate Services*, accessed May 29, 2016, <http://www.gfcs-climate.org/health>.

<sup>36</sup> "WMO and WHO establish joint office for climate and health," *World Health Organization*, accessed May 29, 2016, <http://www.who.int/globalchange/mediacentre/news/joint-office/en/>.

<sup>37</sup> "Integrated Assessment of Black Carbon and Tropospheric Ozone," *UNEP & WMO* (2011), [http://www.unep.org/dewa/portals/67/pdf/BlackCarbon\\_report.pdf](http://www.unep.org/dewa/portals/67/pdf/BlackCarbon_report.pdf).



1. Raising awareness and improving scientific understanding of SLCPs impacts and mitigation strategies;
2. Enhancing and developing new national and regional actions, including identifying and overcoming barriers, enhancing capacity, and mobilizing support; and
3. Promoting best practices and showcasing successful efforts.

The coalition brings together over 50 national, multilateral, and non-governmental partners to reduce SLCPs with the aim of addressing near-term climate change and air pollution, and improving human health, food security, and energy efficiency.<sup>38</sup>

### United Nations (UN)

At the WHO Conference on Health and Climate Change held in August 2014, WHO Director General, Margaret Chan, noted that climate change discussions ongoing in the UNFCCC had not yet given sufficient notice to the relationship between climate change and human health and wellbeing. Chan drew attention to recent WHO data that emphasizes the seven million deaths attributed to air pollution in 2012, which provides an opportunity for public health interventions to both protect human wellbeing and mitigate climate change.<sup>39</sup>

In response, UNFCCC Executive Secretary, Christiana Figueres, referred to the then-forthcoming UNFCCC Conference of the Parties 21 (COP21) as “a global public health agreement.”<sup>40</sup> At COP21, world leaders reached the first global agreement on climate change – the Paris Agreement. The agreement makes explicit references to health, representing a milestone in recognizing the health impacts of climate change. The preamble states that “Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on [...] the right to health.”<sup>41</sup> In addition, the “co-benefits” of climate mitigation for “adaptation, health and sustainable development” are recognized in the decision on enhanced actions to be taken prior to the year 2020.<sup>42</sup> However, while providing a framework for strong actions in the health sector, the real outcome of COP21 will depend on the actions taken by countries to interpret and implement the agreement in their own policies.

### **Section 3: Possible Solutions & Bloc Positions**

Margaret Chan describes climate change as “the defining health issue of this century.”<sup>43</sup> In spite of the successes of the aforementioned past actions, these efforts are relatively recent, and have just scraped the surface of the issue at hand. The detriment that climate change imposes on health outcomes requires a cohesive, multilateral approach involving pre-emptive policies to mitigate climate change as well as adaptive strategies to reduce

<sup>38</sup> “About Us,” *Climate & Clean Air Coalition to Reduce Short-Lived Climate Pollutants*, accessed May 29, 2016, <http://www.ccacoalition.org/en/content/about-us>.

<sup>39</sup> “World Health Organization Conference on Health and Climate Change” (see footnote 24).

<sup>40</sup> *Ibid.*

<sup>41</sup> “Adoption of the Paris Agreement,” *United Nations Framework Convention on Climate Change*, last modified December 12, 2015, <http://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>.

<sup>42</sup> *Ibid.*

<sup>43</sup> “World Health Organization Conference on Health and Climate Change” (see footnote 24).



health impacts already occurring. Without adequate mitigation and adaptation, climate change poses unacceptable risks to global public health.

### Mitigation

There is a very large, unrecognized potential to obtain health co-benefits from policies that reduce climate change. These include reduced risks from air pollution-related diseases and fewer environmental health risks from transport, housing, and energy systems; as well as health benefits from healthier lifestyles and diets. Health benefits associated with climate change mitigation can be achieved locally, and in relatively short time frames. For example, urban public transport policies that facilitate walking and cycling not only emit less pollutants, but also immediately promote increased physical activity, reduce air pollution-related mortality, and potentially reduce traffic injury deaths.<sup>44</sup> Additional examples of positive measures for both climate and health are described below.

Electricity generation via renewable energy sources (such as solar, wind, or hydro power) reduce environmentally harmful emissions created by coal and diesel fuels. Coal and diesel emissions are classified as carcinogens by the International Agency for Research on Cancer (IARC), and are a major source of particulates and carbon dioxide.<sup>45</sup> Thus, the use of renewable energy sources provides significant health benefits as well as mitigation of climate change.

The use of clean fuels (such as liquefied petroleum gas, biogas, and biofuels) and household cookstoves can dramatically reduce deaths from household air pollution, one of the largest environmental health risks among women and children in low-income countries. These measures reduce emissions of black carbon, a prominent SLCP.<sup>46</sup>

Housing and buildings designed to be energy-efficient and climate-adapted, which make effective use of natural daylighting and natural ventilation with appropriate screening, can reduce the morbidity and mortality associated with heat and cold exposure, as well as the risks of airborne infectious disease transmission. Such buildings may also reduce the risk of acute and chronic respiratory diseases related to indoor air pollution, mold, and dampness.<sup>47</sup>

In affluent countries, shifting to diets richer in fresh, in-season vegetables, fruits, and legumes can help reduce certain climate change emissions from agricultural systems. Such shifts concomitantly reduce the risks of obesity, heart disease, and cancers associated with excessive consumption of red meat and some processed foods.<sup>48</sup>

Such measures (among others) are available for implementation today, and yet, knowledge of these types of health co-benefits is rarely used to inform the selection of climate mitigation policies and the allocation of financing needed to implement them.

<sup>44</sup> “World Health Organization Conference on Health and Climate Change” (see footnote 24).

<sup>45</sup> “IARC Monographs on the Evaluation of Carcinogenic Risks to Humans,” *International Agency for Research on Cancer*, accessed May 29, 2016, [http://monographs.iarc.fr/ENG/Classification/List\\_of\\_Classifications\\_Vol1-115.pdf](http://monographs.iarc.fr/ENG/Classification/List_of_Classifications_Vol1-115.pdf).

<sup>46</sup> “World Health Organization Conference on Health and Climate Change” (see footnote 24).

<sup>47</sup> Ibid.

<sup>48</sup> Ibid.



The consequence of this omission is that low-cost opportunities to avoid ill health are being systematically overlooked.

### Adaptation

Past emissions are estimated to involve some unavoidable warming even if atmospheric greenhouse gas concentrations remain at current levels.<sup>49</sup> Thus, there are some impacts for which adaptation is the only available and appropriate response. Many adaptive measures have benefits beyond those associated with climate change. For example, the rebuilding and maintaining of public health infrastructure is often viewed as the “most important, cost-effective and urgently needed” adaptation strategy.<sup>50</sup> Other important adaptation strategies include public health training, vaccination programmes, disease surveillance, protective technologies, weather forecasting and warning systems, emergency management and disaster preparedness, and legislation and administration.<sup>51</sup>

While the array of potential adaptive responses available to human societies is large, there are formidable economic, environmental, social, and behavioural barriers to implementation of adaptation. For developing countries, availability of resources and building adaptive capacity are particularly important.<sup>52</sup> Sustainable development can reduce vulnerability to climate change by enhancing adaptive capacity and increasing resilience. Thus, overall progress in alleviation of poverty, reduction of inequities in the social and environmental determinants of health, and strengthening of basic public health interventions are critical to health protection from climate change.<sup>53</sup> At present, however, few plans for promoting sustainability have explicitly included either adapting to climate change impacts or promoting adaptive capacity.

### Bloc Positions

While it is generally unanimous that climate change is detrimental to human health, and that this issue must be addressed immediately, different countries may have different priorities depending on their development status. For example, the most important environmental health problem in developed countries is generally considered to be outdoor air pollution. For these countries, the focus of impacts of climate change is also the potential increase in heat stress and heatwaves. There is relatively little discussion of weather disasters and vector-borne diseases, and some discussion on food- and water-borne diseases.<sup>54</sup>

By contrast, the burden of infectious diseases is much greater in developing nations, and, depending on location, weather disasters leading to flooding or droughts are of greater pertinence. Small Island Developing States (SIDS) have more incentive than most to undertake vulnerability and adaptation assessments. The effects of climate change in the Caribbean, for example, will be felt through increasingly severe tropical storms and likely

<sup>49</sup> “Climate Change: Impacts, Adaptation and Vulnerability,” *Intergovernmental Panel on Climate Change*, last modified April 13, 2007, [http://www.meteotrentino.it/clima/pdf/rapporti\\_meteo/IPCC\\_Impacts\\_Adaptation\\_and\\_Vulnerability.pdf](http://www.meteotrentino.it/clima/pdf/rapporti_meteo/IPCC_Impacts_Adaptation_and_Vulnerability.pdf).

<sup>50</sup> “Adaptation and adaptive capacity, to lessen health impacts,” *World Health Organization*, accessed May 26, 2015, <http://www.who.int/globalchange/environment/en/chapter11.pdf>.

<sup>51</sup> Haines et al., “Climate change and human health,” (see footnote 4).

<sup>52</sup> “Climate Change: Impacts, Adaptation and Vulnerability” (see footnote 49).

<sup>53</sup> “World Health Organization Conference on Health and Climate Change” (see footnote 24).

<sup>54</sup> A.J. McMichael et al., *Climate Change and Human Health: Risks and Responses* (Geneva: WHO, 2003), 187.



increases in the severity and frequency of low rainfall events and droughts in all areas.<sup>55</sup> Major constraints in the health sector of developing nations have been identified as insufficient human, material, and financial resources.

### Section 4: Further Research

#### Questions to consider

1. This topic presents a heterogeneous issue, whose impacts vary greatly depending on the location and adaptive capacity of the country in question. How can this assembly devise a course of action that responds to the needs of all parties?
2. How can this assembly recruit the backing of the relevant organizations and partnerships described in this report (WHO, WMO, CCAC) to support the implementation of strategies for mitigation and adaptation?
3. How can international aid be used to support countries with great need for adaptation but limited adaptive capacity?

#### Helpful sources

- UNFCCC Site:  
<http://newsroom.unfccc.int/>
- WHO Climate Change and Human Health Site:  
<http://www.who.int/globalchange/en/>
- WHO Regional Offices' Climate Change Sites (for region-specific policy):  
<http://www.who.int/globalchange/links/regional/en/>
- Public Health Institute and Center for Climate Change & Health – Opportunities for Action:  
<http://www.phi.org/uploads/application/files/h7fjouo1i38v3tu427p9s9kcmhs3oxsi7tsg1fovh3yesd5hxu.pdf>
- WHO Conference on Health and Climate Change, August 2014 – Conference Report:  
<http://www.who.int/globalchange/mediacentre/events/climate-health-conference/whoconferenceonhealthandclimatechangefinalreport.pdf?ua=1>

### Section 5: Bibliography

“About Us.” *Climate & Clean Air Coalition to Reduce Short-Lived Climate Pollutants*. Accessed May 29, 2016.  
<http://www.ccacoalition.org/en/content/about-us>.

“Adaptation and adaptive capacity, to lessen health impacts.” *World Health Organization*. Accessed May 29, 2016.  
<http://www.who.int/globalchange/environment/en/chapter11.pdf>.

---

<sup>55</sup> Ibid p. 190.



## UNFCCC Conference of the Parties: 22<sup>nd</sup> Session

“Adoption of the Paris Agreement.” *United Nations Framework Convention on Climate Change*. Last modified December 12, 2015.

<http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>.

Basu, Rupa, and Johnathan M. Samet. “Relation between Elevated Ambient Temperature and Mortality: A Review of Epidemiologic Evidence.” *Epidemiologic Reviews* 24 (2002): 190-202.

<http://epirev.oxfordjournals.org/content/24/2/190.full.pdf+html>.

“Climate change and health – Report by the Secretariat.” *World Health Organization*. Last modified March 6, 2009.

[http://www.who.int/globalchange/A62\\_11\\_en.pdf?ua=1](http://www.who.int/globalchange/A62_11_en.pdf?ua=1).

“Climate change and health – WHA 61.19.” *Sixty-First World Health Assembly*. Last modified May 24, 2008.

[http://www.who.int/globalchange/A61\\_R19\\_en.pdf?ua=1](http://www.who.int/globalchange/A61_R19_en.pdf?ua=1).

“Climate Change: Impacts, Adaptation and Vulnerability.” *Intergovernmental Panel on Climate Change*. Last modified April 13, 2007.

[http://www.meteotrentino.it/clima/pdf/rapporti\\_meteo/IPCC\\_Impacts\\_Adaptation\\_and\\_Vulnerability.pdf](http://www.meteotrentino.it/clima/pdf/rapporti_meteo/IPCC_Impacts_Adaptation_and_Vulnerability.pdf).

Dhainaut, Jean-Francois, Yann-Erick Claessens, Christine Ginsburg, and Bruno Riou. “Unprecedented heat-related deaths during the 2003 heat wave in Paris: consequences on emergency departments.” *Critical Care* 8 (2004): 1-2.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC420061/pdf/cc2404.pdf>.

Easterling, David R., Gerald A. Meehl, Camille Parmesan, Stanley A. Chagnon, Thomas R. Karl, and Linda O. Mearns. “Climate Extremes: Observations, Modeling, and Impacts.” *Science* 289 (2000): 2068-2074.

<http://science.sciencemag.org/content/sci/289/5487/2068.full.pdf>.

Euripidou, Euripides and Virginia Murray. “Public health impacts of floods and chemical contamination.” *Journal of Public Health* 26 (2004): 376-383.

<http://jpubhealth.oxfordjournals.org/content/26/4/376.long>.

“Global Framework for Climate Service: Climate Services Action for Africa Project.” *World Food Programme*. Accessed May 29, 2016.

<http://www.wfp.org/node/644231>.

Haines, A., R. S. Kovats, D. Campbell-Lendrum, and C. Corvalan. “Climate change and human health: Impacts, vulnerability and public health.” *Journal of the Royal Institute of Public Health* 120 (2006): 585-596.

[http://www.publichealthjrnl.com/article/S0033-3506\(06\)00005-9/pdf](http://www.publichealthjrnl.com/article/S0033-3506(06)00005-9/pdf).





## UNFCCC Conference of the Parties: 22<sup>nd</sup> Session

Hales, Simon, Sari Kovats, and Alistair Woodward. "What El Niño can tell us about human health and global climate change." *Global Change & Human Health* 1 (2000): 66-76.

<http://www.bvsde.paho.org/texcom/cd051477/hales.pdf>.

"Health." *Global Framework for Climate Services*. Accessed May 29, 2016.  
<http://www.gfcs-climate.org/health>.

"Health events in the 2015 UN climate change conference of parties (COP21)." *World Health Organization*. Accessed May 29, 2016.  
<http://www.who.int/globalchange/mediacentre/events/cop21-health-events/en/>.

"IARC Monographs on the Evaluation of Carcinogenic Risks to Humans." *International Agency for Research on Cancer*. Accessed May 29, 2016.  
[http://monographs.iarc.fr/ENG/Classification/List\\_of\\_Classifications\\_Vol\\_1-115.pdf](http://monographs.iarc.fr/ENG/Classification/List_of_Classifications_Vol_1-115.pdf).

"Integrated Assessment of Black Carbon and Tropospheric Ozone." *United Nations Environment Program & World Meteorological Organization* (2011).  
[http://www.unep.org/dewa/portals/67/pdf/BlackCarbon\\_report.pdf](http://www.unep.org/dewa/portals/67/pdf/BlackCarbon_report.pdf).

Kovats, R. S., D. H. Campbell-Lendrum, A. J. McMichael, A. Woodward, and J. St H. Cox. "Early effects of climate change: do they include changes in vector-borne disease?" *Philosophical Transactions of the Royal Society of London* 356 (2001): 1057-1068.  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1088500/pdf/TB011057.pdf>.

Kovats, R. S., S. J. Edwards, S. Hajat, B. G. Armstrong, K. L. Ebi, and B. Menne. "The effect of temperature on food poisoning: a time-series analysis of salmonellosis in ten European countries." *Epidemiology and Infection* 132 (2004): 443-453.  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2870124/pdf/15188714.pdf>.

Manga, Lucien, Magaran Bagayoko, Tim Meredith, and Maria Neira. "Overview of health considerations within National Adaptation Programmes of Action for climate change in least developed countries and small island states." *World Health Organization* (2010).  
[http://www.who.int/phe/Health\\_in\\_NAPAs\\_final.pdf](http://www.who.int/phe/Health_in_NAPAs_final.pdf).

McMichael, Anthony J., Rosalie E. Woodruff, and Simon Hales. "Climate change and human health: present and future risks." *Lancet* 367 (2006): 859-869.  
[http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(06\)68079-3.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(06)68079-3.pdf).



McMichael, A. J., D. H. Campbell-Lendrum, C. F. Corvalan, K. L. Ebi, A. K. Gitekho, J. D. Scheraga, and A. Woodward. *Climate Change and Human Health: Risks and Responses* (Geneva, 2003).

Patz, Jonathan A., Diarmid Campbell-Lendrum, Tracey Holloway, and Jonathan A. Foley. "Impact of regional climate change on human health." *Nature* 438 (2005): 310-317.  
<http://www.nature.com/nature/journal/v438/n7066/pdf/nature04188.pdf>.

Purse, Bethan V., Philip S. Mellor, David J. Rogers, Alan R. Samuel, Peter P. C. Mertens, and Matthew Baylis. "Climate change and the recent emergence of bluetongue in Europe." *Nature Reviews Microbiology* 3 (2005): 171-181. <http://www.nature.com/nrmicro/journal/v3/n2/pdf/nrmicro1090.pdf>.

"WHO Workplan on Climate Change and Health, Aims and Objectives: 2014-2019." *World Health Organization*. Last modified February 2015.  
[http://www.who.int/globalchange/health\\_policy/climate-change-and-health-workplan-2014-2019.pdf?ua=1](http://www.who.int/globalchange/health_policy/climate-change-and-health-workplan-2014-2019.pdf?ua=1).

World Health Organization. "Health, climate change, and WHO." Presentation, 2011. [who.int/globalchange/FinalDonorReport2011.ppt](http://www.who.int/globalchange/FinalDonorReport2011.ppt).

"World Health Organization Conference on Health and Climate Change – Conference Report." *World Health Organization*. Accessed May 29, 2016.  
<http://www.who.int/globalchange/mediacentre/events/climate-health-conference/whoconferenceonhealthandclimatechangefinalreport.pdf?ua=1>.

"WMO and WHO establish joint office for climate and health." *World Health Organization*. Accessed May 29, 2016.  
<http://www.who.int/globalchange/mediacentre/news/joint-office/en/>.



### Topic 2: Climate Refugees

#### Section 1: Introduction

The relatively new term “Climate Refugee” (or Environmental Migrant) raises a social issue concerning climate change onto the international platform. Climate change indiscriminately impacts all humans of the world through different means. Whether it is dried up lands, water scarcity, food security, earthquakes or tornadoes, climate change is impacting the way people live. The United Nations High Commissioner for Refugees (UNHCR) predicts that humans will try to adapt to new climates, but at some point they will be forced to migrate to ensure basic survival<sup>56</sup>. On the one hand, environmental migration is an imminent threat, yet is very gradual. This is one of the reasons behind its low coverage in the media. On the other hand, climate change is becoming increasingly sporadic, which affects these global migration trends. As a result, environmental migration is anticipated to become more problematic in the near future. This is why delegates are tasked to find a solution to this threat<sup>57</sup>.

The larger problem concerning climate refugees is that it belongs in a political category, not a legal one. As journalist Amy Lieberman states, “[t]his amorphous, global population of refugees does not have any international legal protection or agency upholding their basic human rights and helping to keep them safe”<sup>58</sup>.

Additionally, climate disasters pave the way for future social uprisings where citizens blame their governments for reckless decisions regarding climate change. This is a case that we see in some Middle Eastern countries, and might become the case in the Global North, as many countries invest heavily in fossil fuels<sup>59</sup>. Thus, delegates are encouraged to talk about these many issues relating to Climate Refugees, including (but not limited to): legality of migration and ensuring protection, combating climate change to limit the number of climate refugees through case studies, and natural disaster emergency plans.

#### Legality of Migration and Ensuring Protection

“Refugee” has become a fairly ubiquitous term that is tossed around in the media, politics, and even regular conversation. Although we frequently hear this term with the prefix “Syrian,” it will likely soon be prefixed more commonly with “Climate” or “Environmental.” In fact, it is estimated that by 2050, there will be between 25 million and 1 billion climate refugees.<sup>60</sup> The reason behind the wide estimate range is that the term “Climate/Environmental Refugee” is not a legal one. Similarly, it is difficult to determine why every person is migrating. Is it due to an environmental disaster such as the Fort McMurray Fire in 2016? Or is it due to long-term climate change such as droughts, which may lead people to migrate for job opportunities? Unfortunately, there is

<sup>56</sup> <http://www.unhcr.org/pages/49e4a5096.html>

<sup>57</sup> [http://unfccc.int/meetings/bonn\\_jun\\_2014/items/8392.php](http://unfccc.int/meetings/bonn_jun_2014/items/8392.php)

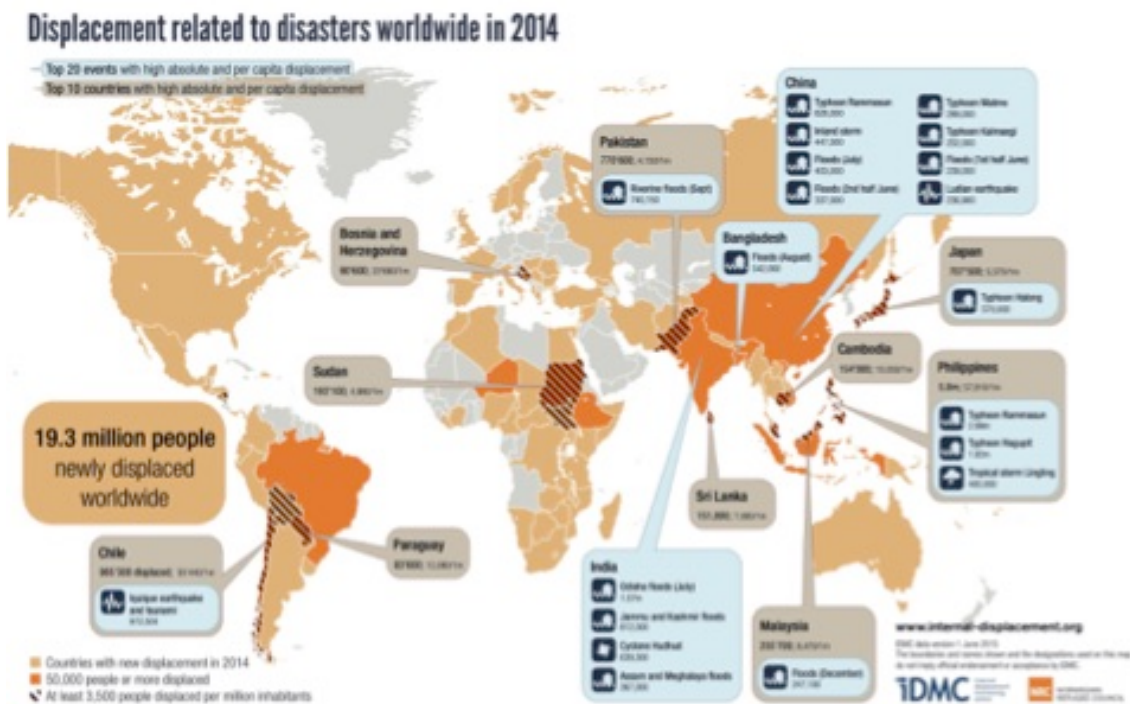
<sup>58</sup> <http://www.aljazeera.com/indepth/features/2015/11/climate-refugees-151125093146088.html>

<sup>59</sup> <http://www.scientificamerican.com/article/ominous-story-of-syria-climate-refugees/>

<sup>60</sup> <http://www.aljazeera.com/indepth/features/2015/11/climate-refugees-151125093146088.html>

a common link between all the “types” of climate refugees – there is no form of “international legal protection or agency upholding their basic human rights and helping to keep them safe.”<sup>61</sup>

What this means is that the estimated 200,000 Bangladeshis that have to migrate every year due to river erosion<sup>62</sup> cannot smoothly apply for resettlement to another country because the recipient country does not have the legal obligation to accept them. That said, there should be a humanitarian incentive for delegates in the forum to revisit the definition of refugee and consider placing climate refugee into that definition.



Map 1<sup>63</sup>

This interactive map helps us see the extent that climate change forces people from all over the world to migrate. As seen in this map, most environmental migration takes place in countries of the global South. Delegates must ask, why is this the case? What can countries in the global North do to work in collaboration with the global South in this crisis?

## Section 2: Refugee vs. Internally Displaced Person

The difference between a refugee and an internally displaced person (IDP) is important. A refugee is a person who crosses a political border to reach a safe haven, while an IDP

<sup>61</sup> <http://www.aljazeera.com/indepth/features/2015/11/climate-refugees-151125093146088.html>

<sup>62</sup> <http://www.reuters.com/article/us-bangladesh-climate-land-idUSKCN0R90U220150909#QTEvHmWvEXxy2q8.97>

<sup>63</sup>



is a person who reaches a safe haven without crossing a border (thus remains in the same country). As this is an international forum, the dais would favour debates and discussions on the international issue of climate refugees, rather than climate IDP's. Of course, delegates should feel free to infer to the issue of IDP's in their country if the issue exists, but they should be careful of using the term refugee too loosely.<sup>64</sup>

### Section 3: Case Study: “Nature’s Bank Going Bust”

An interesting case study inferring to the link between climate refugee and IDP is the Syrian crisis. Most people often overlook the fact that some Syrians were politically considered to be climate refugees before legal refugees. Between 2006 and 2011, Syria experienced its most destructive drought in recent history, which destroyed 60% of farmlands in the countryside.<sup>65</sup> Consequently, wealthy farmers were forced to leave their lands and urbanize in order to find jobs. With increasing unemployment in urban areas, and a lack of governmental care in overpopulated cities such as Dara'a, the Syrian crisis broke out in 2011.

Soon after, the world was introduced to the term Syrian Refugee when Syrians began leaving Syria, but we may also partially call them Climate Refugees, as there is a clear correlation between climate change and the Syrian crisis.<sup>66</sup> Thus, this is one way you can link IDP's with Refugees.

Going back to the legality of climate refugees, this case study is an example of why Climate Refugees should be integrated into the legal definition of refugee. Currently, most of the Syrian refugee population is in countries next to Syria, such as Lebanon, Jordan and Turkey. Interestingly, “displacement linked to climate change is likely to follow similar patterns with people moving internally or to nearby countries.”<sup>67</sup> This not only shows that “climate refugee” has to be incorporated legally due to its similar trends with a “refugee,” but it also shows how the Syrian conflict started out as a climate problem. In a 2015 BBC interview, Prince Charles of Wales said:

“It sounds awful to say, but some of us were saying 20 something years ago that if we didn't tackle these issues you would see ever greater conflict over scarce resources and ever greater difficulties over drought, and the accumulating effect of climate change, which means that people have to move.”<sup>68</sup>

This statement supports the statement above that climate change, although gradual, is an imminent threat that needs to be dealt with. Delegates should not underestimate the gravity of climate change as it may lead to even further conflict in the world if it is not dealt with in 2016.

<sup>64</sup> <http://www.bbc.com/news/magazine-23899195>


<sup>65</sup> <http://www.nationalobserver.com/2015/09/04/news/what-climate-refugee-looks>


<sup>66</sup> <http://www.upworthy.com/what-is-the-role-of-climate-change-in-the-conflict-in-syria>

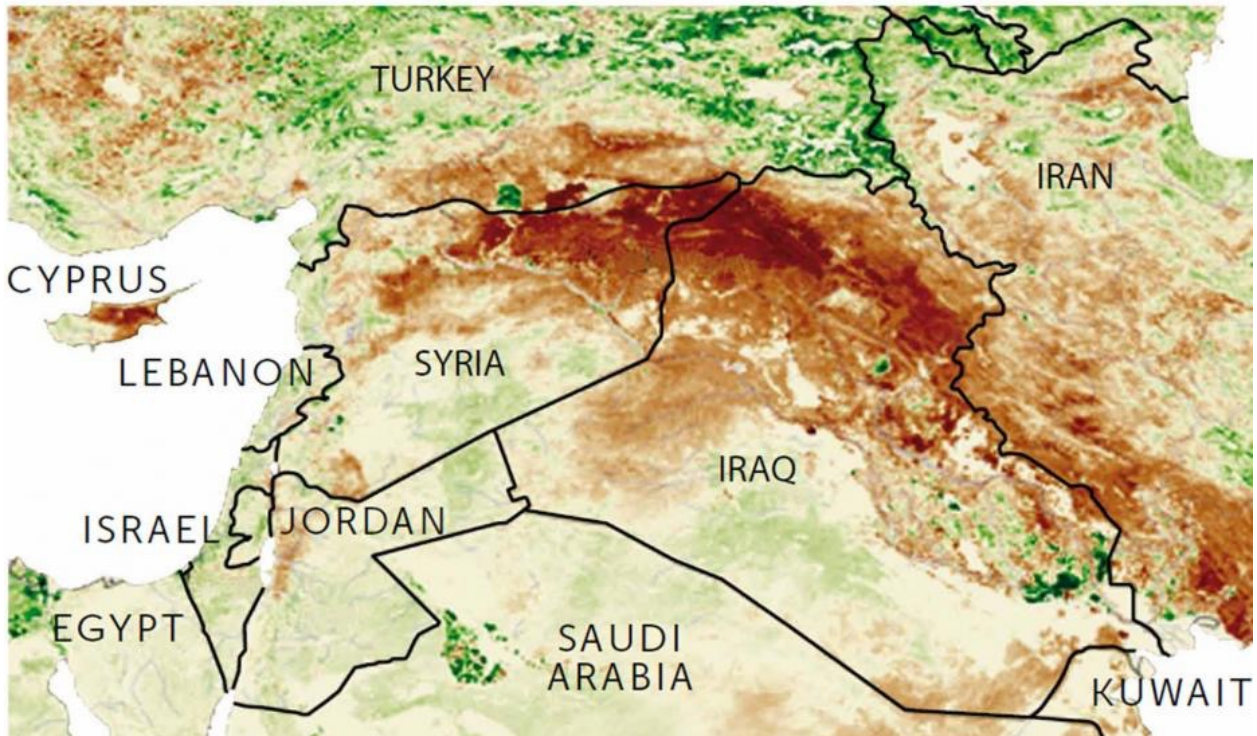
<sup>67</sup> <https://climatemigration.atavist.com/syria-and-climate-change>

<sup>68</sup> <http://www.bbc.com/news/uk-34897796>



 Brown areas indicate areas where few plants grow and vegetation is scarce

 Green areas indicate areas where vegetation is healthy, foliage is dense and plants are growing quickly



Map 2<sup>69</sup>

Moreover, other evidence shows that the uprisings in Syria began in the countryside in lieu of the urban areas. Furthermore, due to social media and urbanization, the ideology transferred and the crisis began.<sup>70</sup> Additionally, Map 2 illustrates the severity of the drought, which affected the North East, and the South (where the crisis began in Dara'a). Regardless of the route that the crisis took, it is safe to say that one factor of the conflict is the lack of governmental response to climate change and droughts, which aggravated the people. Some people have even said that there is a correlation between climate change and the global terrorism (Daesh) we see today. It is worth noting that conflicts and migration usually have multi-causal phenomena, and climate change is just one of them. The correlation between climate change and the Syrian crisis does exist. Furthermore, scientists predict that a crisis ten times larger than what we see today will exist if climate change is not tackled in Marrakech. Prince Charles said that when the economic crisis happened in 2008, all attention was on the economy. In the near future, “nature’s banks [will] bust” if no action is taken by the delegates.

*\*A reminder to delegates that this is a case study under the topic of climate change. The dais will not tolerate any discussion surrounding the Syrian conflict itself if the dialogue*

<sup>69</sup> <http://www.independent.co.uk/news/world/refugee-crisis-is-climate-change-affecting-mass-migration-10490434.html>

<sup>70</sup> <https://climatemigration.atavist.com/syria-and-climate-change>





*does not relate back to climate change. You may talk about solutions to ending the Syrian conflict through combatting climate change. To talk about ending the conflict in Syria without addressing climate change is futile\**

### **Section 4: Natural Disaster Emergency Response Plan (NDERP)**

It is pivotal for countries to develop a Natural Disaster Emergency Response Plan not only for domestic emergencies, but also for international ones. The dais would look favourably upon delegates sharing their NDERP's so that other countries can get an idea of what it should entail. Also, collaboration between delegates economically and politically is important. No country, regardless of financial situation, should be deprived of an NDERP.

Moreover, it is important to bear in mind that one NDERP plan for all countries is inappropriate since some countries do not experience natural disasters that other countries might. For example, it is almost impossible for Afghanistan to experience a tsunami since it is a landlocked country. Therefore, a Tsunami NDERP for Afghanistan would be useless. However, all countries must develop NDERP's with one main goal in mind: the wellbeing of the people inside its borders. Additionally, the dais would look favourably upon international cooperation and NDERP's that are organized with UN relief agencies so that the amount of damage from a natural disaster is minimal. Finally, it is important to develop an NDERP as much as it is important to generate solutions to climate change. These are not mutually exclusive, as we have to embrace climate change to combat it. Developing an NDERP is not a solution to climate change, but rather a short-term solution to its consequences.

#### Goals for the Forum

In COP 22, we are collectively trying to make the world a sustainable place for humans to live in comfortably. This means we have to limit the current and future number of climate refugees in the world. It is reductionist to solve this problem only by combating the direct physical impacts of climate change. Delegates have to deal with the problem itself, and also work to legalize climate refugees and establish plans and agencies for them.

Ultimately, the topic of Climate Refugees is sensitive for many countries and should be taken very seriously. A Climate Refugee is a person who crosses borders for environmental protection. This may include people fleeing earthquakes, tsunamis, droughts, and other environmental disasters. It can further include people forced to leave their area of residence due to health reasons (suffocation due to pollution, advanced asthma, environmental poisoning). These refugees have no medical insurance and often have limited financial resources for proper treatment. Hence, if we do not take immediate action on the issue, the one bond between all countries other than the United Nations will be Climate Refugees.



### Section 5: Work's Cited

- Barnes, Hannah. "How Many Climate Migrants Will There Be?" BBC News. September 2, 2013. Accessed August 30, 2016. <http://www.bbc.com/news/magazine-23899195>.
- Bawden, Tom. "Refugee Crisis: Is Climate Change Affecting Mass Migration?" The Independent. September 7, 2015. Accessed August 31, 2016. <http://www.independent.co.uk/news/world/refugee-crisis-is-climate-change-affecting-mass-migration-10490434.html>.
- "Climate Change and Disasters." UNHCR News. December 14, 2009. Accessed August 30, 2016. <http://www.unhcr.org/pages/49e4a5096.html>.
- Dinshaw, Fram. "This Is What a Climate Refugee Looks like." National Observer. September 04, 2015. Accessed August 30, 2016. <http://www.nationalobserver.com/2015/09/04/news/what-climate-refugee-looks>.
- Huber, Alisha. "What Is the Role of Climate Change in the Conflict in Syria?" Upworthy. September 3, 2015. Accessed August 30, 2016. <http://www.upworthy.com/what-is-the-role-of-climate-change-in-the-conflict-in-syria>.
- Islam, Rafiqul. "To Help Climate Migrants, Bangladesh Takes Back Land from the Sea." Reuters. September 09, 2015. Accessed August 30, 2016. <http://www.reuters.com/article/us-bangladesh-climate-land-idUSKCN0R90U220150909#QTgEvHmWvEXxy2q8.97>.
- Lieberman, Amy. "Where Will the Climate Refugees Go?" Al Jazeera English. December 22, 2015. Accessed August 30, 2016. <http://www.aljazeera.com/indepth/features/2015/11/climate-refugees-151125093146088.html>.
- "Publications." IDMC » Global Estimates 2015: People Displaced by Disasters. July 2015. Accessed August 30, 2016. <http://www.internal-displacement.org/publications/2015/global-estimates-2015-people-displaced-by-disasters/>.
- Randall, Alex. "Syria and Climate Change: Did the Media Get It Right?" Atavist. January 26, 2016. Accessed August 30, 2016. <https://climatemigration.atavist.com/syria-and-climate-change>.
- Wendle, John. "The Ominous Story of Syria's Climate Refugees." Scientific American. December 17, 2015. Accessed August 30, 2016. <http://www.scientificamerican.com/article/ominous-story-of-syria-climate-refugees/>.



### Topic 3: Steps to Enforce the Paris Agreement and Further Reduce Green House Gas Emissions

#### Section 1: Background Information

The 2015 United Nations Climate Change Conference (COP 21) was held in Paris, France last year with ultimate goal to take steps towards reduction in climate change. While all member nations of the United Nations are in consensus about the necessity of the reduction of greenhouse gas emissions, it is difficult to get countries to agree on set targets and to make the agreement binding.

There is a three-step process that must take place for the agreement to be binding. This process is incredibly important and it is vital that member nations encourage other nations to play their part. The first step was to get the Paris agreement passed at the conference last December, which was thankfully successful. With this in mind, there are still steps required to essentially ‘operationalize’ the Paris Agreement so that nations can begin to implement their national climate plans, or National Determined Contributions (NDCs).<sup>71</sup> The next step was to get Heads of State to sign the agreement at the high-level signing ceremony at the United Nations in New York City, which took place on April 22<sup>nd</sup>, 2016. Although this step is mostly complete, there are still several countries that have not completed this necessary second step. The deadline for these signatures on the agreement is April 21<sup>st</sup>, 2017. Finally, the last step is for each respective nation to take the agreement back to their home country and have it ratified by their respective legislative bodies. This is the most difficult step and nations need to be very supportive of each other in the process. Overall, at least 55 countries representing at least 55% of global emissions have to complete this three-step process for the agreement to come into effect. As of May, nearly 180 countries have signed the Paris Agreement but only 16 countries have since ratified it.<sup>72</sup> Following these steps it is essential to consider how this agreement and the respective NDCs can be turned into a meaningful and productive set of national government policies and investment plans that successfully achieve the goals set out by the Paris Agreement.

In December, the Global Action Plan set out to limit global warming to well below 2 degrees Celsius above pre-industrial levels, with the agreement entering into force in 2020 (if all three aforementioned steps are complete). It is encouraged that the target be 1.5 degrees Celsius and the delegates in COP22 at SSUNS are encouraged to explore this option, or even a better target, if feasible. Delegates should be reminded that developing countries will take longer to reach targets and may need more support to reach these goals in a timely manner. In addition to this, every country will have unique opportunities and challenges that need to be explored so that the collective body can work to their strengths.

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<sup>71</sup> <http://www.ecosystemmarketplace.com/articles/the-next-challenge-how-to-make-the-paris-agreement-work/>

<sup>72</sup> Ibid.

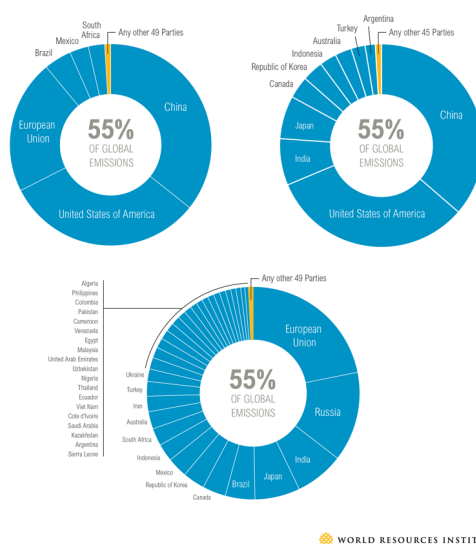
In addition to each Climate Change Conference, countries are to meet every 5 years to “set more ambitious targets”<sup>73</sup>. In addition, countries should be reporting to each other AND to the public on their progress – it is suggested that all information be public. At COP22 for SSUNS, it is suggested that a transparency and accountability system be created so that each nation can report in the same manner and so that no one gets left behind. Transparency is central to the functioning of the Paris Agreement, where currently a NDC directory has been launched in an effort to increase transparency and offer insight into the country plan to meet its climate change pledges. This transparency also plays a role in not only the support system to achieve these climate change goals, but also serves to attract private sector cooperation as well as investments needed to make these pledges a reality.<sup>74</sup>

The role of cities, regions, local authorities, and civil society can also not be forgotten. It is recognized that climate change isn’t just to be dealt with on a national level, but on every level. National governments must address climate change with every stakeholder – this can include but is not limited to: provincial/state governments, local governments, and non-governmental organizations.

## Section 2: Past Actions

Climate change has been a contentious issue, but a lot has been done in the past and a lot more needs to happen moving forward. The international community has met numerous times to work towards a better environmental future, but has run into some roadblocks. In

3 Examples of How the Paris Agreement Could Take Effect



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<sup>73</sup> [http://ec.europa.eu/clima/policies/international/negotiations/paris/index\\_en.htm](http://ec.europa.eu/clima/policies/international/negotiations/paris/index_en.htm)

<sup>74</sup> <http://www.ecosystemmarketplace.com/articles/the-next-challenge-how-to-make-the-paris-agreement-work/>



1992, the “Earth Summit” produced the United Nations Framework Convention on Climate Change (UNFCCC); this was followed by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) setting up the Intergovernmental Panel on Climate Change (IPCC) in 1998. The IPCC and former United States Vice President Al Gore were later awarded the Nobel Peace Prize in 2007 for their efforts to disseminate greater knowledge about man-made climate change and laying out foundations required for change in the international community.<sup>75</sup>

On December 11, 1997, the Kyoto Protocol was produced – where legally binding targets were introduced so that nations could reduce greenhouse gas emissions. The Kyoto Protocol entered into force 8 years later on February 16, 2005 after it was ratified by 163 nations. It is important to note that both Australia and the United States of America did not ratify to agreement. As two of the largest greenhouse gas emitters and polluters, this is seen as a huge problem in the international community. With regards to the 2015 United Nations Climate Change agreement (COP21), it is imperative that nations such as the United States and Australia ratify the agreement (especially if is to reach the 55% target).

Rio+20, or the Earth Summit, took place in Rio de Janeiro, Brazil in June 2012. This conference took a little bit of a different take on the environment – it highlighted sustainable development. Focussing on water, oceans, energy, cities, jobs, food, and disasters, Rio+20 hopes to inspire nations to find more ways to be sustainable in the long-term.

After the expiration of the Millennium Development Goals in 2015, the United Nations came together again to develop the Sustainable Development Goals for the next 15 years. 17 global goals were produced to further encourage sustainability. Goal 13, the climate action goal, calls on member nations to combat climate change and its impacts. Finally, the international community met in December of last year for the 2015 United Nations Climate Change conference, COP 21, as mentioned above.

### Section 3: Responding to Climate Change

Solutions to Climate Change at the local, national and international level must take on a two-pronged approach known as “mitigation and adaption”. Mitigation refers to mechanisms by which we both reduce emissions as well as stabilizing the level of greenhouse gases in the atmosphere; adaption refers to developing frameworks by which we can live with and minimize our vulnerability to the climate change already in place.<sup>76</sup> Mitigation aims to reduce climate change, a goal that requires decreasing the presence of the greenhouse gases in our atmosphere. This can effectively be achieved by 1) reducing the source of these gases, or emission reduction 2) enhancing the ‘sinks’ that accumulate these gases and keep them out of the atmosphere (forests, oceans, soil), which can be more broadly defined as geo-engineering that offsets these gases and their related effects. The 2014 Report on Mitigation of Climate change stated that the goal of this method

<sup>75</sup> <http://www.un.org/en/globalissues/climatechange/>

<sup>76</sup> <http://climate.nasa.gov/solutions/adaptation-mitigation/>

is “stabilize greenhouse gas levels in a timeframe sufficient to allow ecosystems to adapt naturally to climate change, ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner”<sup>77</sup>

Adaption, on the other hand, aims to reduce our vulnerability to the current and expected climate changes.<sup>78</sup> It is important to note that adaption deals primarily with adaptive measures for human civilization and currently does not account ecosystems and our environment. This refers to but is not limited to dealing with rising sea levels and the associated displacement, extreme weather events and increasing food insecurity<sup>79</sup>. There are also opportunities that can be taken advantage of such as the longer growing seasons and yields in certain areas of the world.

These methods can work concurrently to both resolve our current climate problems while working to mitigate the future effects of increased climate change. While both of these methods for dealing with climate change can be conducted independently, it can be observed that climate change would be disastrous to our vulnerability without mitigation actions (regardless of activation measures taken), but also mitigation alone would equally result in great vulnerability without concurrent adaptive changes. This is why the goal of any framework aimed to deal with climate change and its related effects requires a two-pronged approach.<sup>80</sup>



Figure 2<sup>81</sup>

<sup>77</sup> [https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc\\_wg3\\_ar5\\_full.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_full.pdf)

<sup>78</sup> <http://climate.nasa.gov/solutions/adaptation-mitigation/>

<sup>79</sup> Ibid.

<sup>80</sup> <https://www.e-education.psu.edu/meteo469/node/175>

<sup>81</sup> <https://www.e-education.psu.edu/meteo469/node/175>



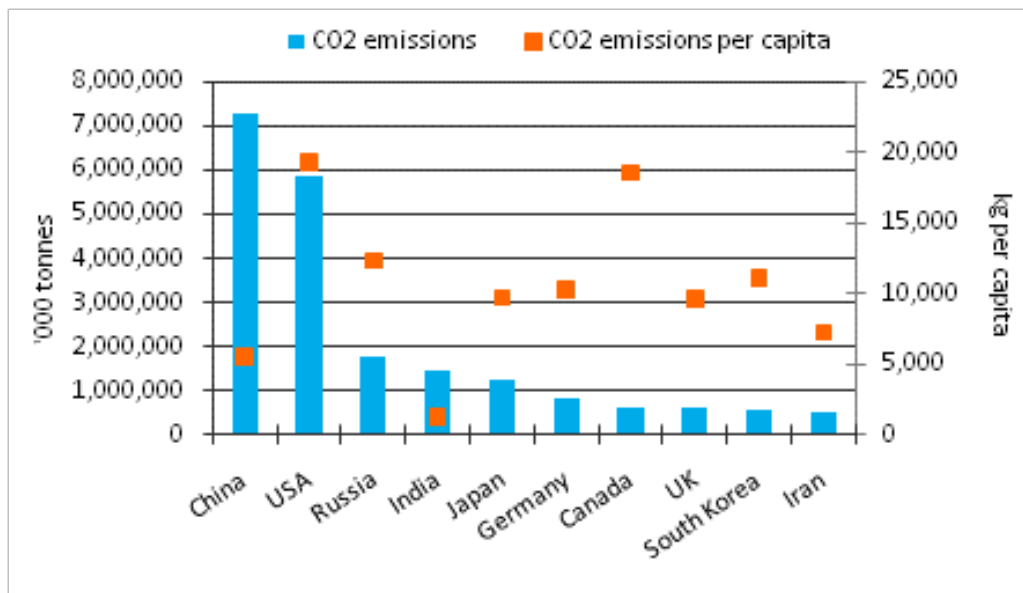
## Section 4: Bloc Positions

### The European Union

The European Union has expressed great support for the agreement and has pledged that it will support a climate action plan to reduce emissions. In fact, the EU was the first major economy to submit its intended contribution and has already started the process in reducing emissions by 40% by 2030. In addition, it has pledged that it will aid developing countries as needed and as member nations of the EU are able to provide assistance. The EU will also continue to encourage other nations to provide support on a voluntary basis. The European Union also intends to be part of a group of developed nations that will have a collective goal to utilize \$100,000,000,000 USD per year by 2020 (extending to 2025) to combat climate change. This amount is expected to increase after 2025 as new goals are set with new scientific data which will become available.

### The United States of America

As the United States did not sign the Kyoto Protocol, it is vital that they sign on to the Paris Agreement. The agreement has the support of Barack Obama, who said that it is “the best change we have to save the one planet we have”. He further has said that the United States is a global leader in fighting climate change, which is often contested in the international community. Looking at the *Figure 2* below, it is actually the second largest producer of CO<sub>2</sub> emissions in the world. (In addition, *Figure 2* provides valuable insight to delegates on which nations the committee should focus on to ratify the agreement.)





### BASIC Group

BASIC refers to the big developing countries: Brazil, South Africa, India and China. All of these states (except India) have high levels of per capita emissions<sup>82</sup>. These states feel that developed states have the responsibility to assist in the financing and technology for the reduction of emissions. Their main concern has often been a question on issues of equity and often refers to the concept of carbon space. This suggests that there is inequity in the atmospheric space and any accord that allows the wealthy nations to occupy more than their fair share of the atmospheric space would be criticized.<sup>83</sup>

### Africa

This bloc often requests for the most stringent action on the part of developed countries and often seeks financing to support climate change initiatives at the national and continental level. The main concerns of this bloc relate to both the finances and the actual implementation of climate change related technologies<sup>84</sup>. There is typically a divide among these states about approaches to agriculture. African states have long felt strongly about climate change deals due to the increasingly very real impacts in many states; these states often feel that large, developed nations have tended to dodge their climate responsibilities.<sup>85</sup>

### Further Research

Reading up on the Kyoto Protocol, Rio+20, and past UN Climate Change Conferences will provide valuable insight when trying to develop a framework of solutions moving forward and in the COP22 committee. Recognizing failures and achievements at every point along the way will be instrumental when looking to draft resolutions for COP22 and beyond. Further explanations of the bloc positions can be found [here](#). It is important for the delegate to note that climate change blocs are not only fluid, but states can participate in several blocs at a time depending on their policy alignments.

### Questions to Consider:

1. How can COP22 get nations that have not wanted to previously sign on to past agreements, get the Paris Agreement fully ratified so that it can become binding?
2. Should the \$100 Billion USD a year fund to help developing nations be increased? If so, will its mandate be changed or expanded?
3. Further emissions cuts are required if the goals of COP21 are to come to fruition. How is the committee going to get nations to *further* cut emissions amidst an already ambitious and difficult to achieve package of goals?

<sup>82</sup> <https://www.thethirdpole.net/2015/11/28/climate-abcd-alignments-blocs-countries-divisions-2/>

<sup>83</sup> <http://www.ecoequity.org/2010/07/equity-energy-access-and-global-carbon-space/>

<sup>84</sup> <https://www.thethirdpole.net/2015/11/28/climate-abcd-alignments-blocs-countries-divisions-2/>

<sup>85</sup> <https://www.theguardian.com/environment/2009/nov/04/africa-walk-out-climate-talks-barcelona>



4. Net-zero emissions was a goal out of COP21 to be achieved between 2050 and 2100. What solutions can COP22 explore to make this a reality?

### Bibliography

Baeden, Tom. "COP21: Paris Climate Deal 'our Best Chance to save the Planet', Says Obama." *The Independent*. Independent Digital News and Media, 12 Dec. 2015. Web. 10 June 2016.

"COP21 Paris." *COP 21 Paris France Sustainable Innovation Forum 2015 Working with UNEP*. N.p., n.d. Web. 13 June 2016.

"COP21 Paris." *COP 21 Paris France Sustainable Innovation Forum 2015 Working with UNEP*. N.p., n.d. Web. 13 June 2016.

Falk, Pamela. "US Signs Climate Pact at UN Signing Ceremony for Paris COP21 Agreement." *CBSNews*. CBS Interactive, 22 Apr. 2016. Web. 13 June 2016.

"Global Issues at the United Nations." UN News Center. Accessed September 13, 2016. <http://www.un.org/en/globalissues/climatechange/>.

Northrop, Eliza. "After COP21: What Needs to Happen for the Paris Agreement to Take Effect?" *World Resources Institute*. World Resource Institute, 21 Jan. 2016. Web. 13 June 2016.

"Outcomes of the U.N. Climate Change Conference in Paris." *Center for Climate and Energy Solutions*. N.p., n.d. Web. 13 June 2016.

"Paris Agreement." *EU Climate Action*. European Commission, n.d. Web. 13 June 2016.

Silva-Chavez, Gus. "The Next Challenge: How To Make The Paris Agreement Work - Ecosystem Marketplace." *Ecosystem Marketplace*. Accessed September 13, 2016. <http://www.ecosystemmarketplace.com/articles/the-next-challenge-how-to-make-the-paris-agreement-work/>.