

FEELING THE HEAT



This is an executive summary of the 50-page report entitled *Feeling the Heat*, published by Development and Peace. To read the complete report, including the footnotes, visit devp.org/feelingtheheat.

THE YEAR 2015 COULD BE HISTORIC. IT MAY BE THE YEAR IN WHICH THE NATIONS OF THE WORLD FINALLY AGREE TO AN EQUITABLE, PRACTICAL AND LEGALLY BINDING AGREEMENT ON CLIMATE CHANGE – OR IT MAY BE, YET AGAIN, THE YEAR THAT THEY FAIL TO DO SO.

Climate change affects us all, even those of us in Canada. The glacial winter experienced in Ontario and Quebec in 2015, the floods in Toronto and Calgary in 2013, the drought in 2012 that seriously affected agriculture, the high tides that affected the Gaspésie in Quebec in 2010, as well as Hurricane Juan that hit Halifax in 2003 - these are all examples of climate catastrophes in Canada. Yes, we too are victims of climate change, however, we have the resources to face these catastrophes: sophisticated monitoring systems, contingency plans and a network of social security to lessen hardships. For countries of the Global South, as is demonstrated by the case studies in our report, climate change adds to existing challenges, especially since these countries have far fewer resources to cope with the problems. Our report looks at three countries: the Philippines, Honduras, and Ethiopia, and reviews the scientific literature on the effects of climate change in these countries, both present and future. Below is a synthesis of our findings on the impacts of climate change on human well-being and socioeconomic development in these countries, followed by a summary of our recommendations.

THE STATE OF CLIMATE CHANGE

Global climate change is having serious impacts on the countries featured in our case studies. Increases in temperature both during the day and at night are clearly observed. Longer dry seasons and hotter days are leading to increased evaporation and greater risk of drought. When rain does fall, it falls more intensely, which increases the potential for flooding, damage to crops and risks to human health through water- and vector-borne diseases. As our oceans warm, tropical storms are expected to get stronger. This is a huge concern in countries already massively affected by tropical storms. In 2013, Super Typhoon Haiyan killed over 6,000 people in the Philippines and displaced millions more. In the last century, six of the twelve strongest hurricanes in the world hit Honduras, including Hurricane Mitch, which killed 10,000 people in 1998.

“WARMING OF THE CLIMATE SYSTEM IS UNEQUIVOCAL, AND SINCE THE 1950S, MANY OF THE OBSERVED CHANGES ARE UNPRECEDENTED OVER DECADES TO MILLENNIA.

The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased.”

IPCC Fifth Assessment Report, Summary Report, 2013.



PROJECTED CHANGES IN CLIMATE

The graph below shows the projected changes in global temperature published by the Intergovernmental Panel on Climate Change (IPCC). The red line shows what will happen to the global temperature if we continue with the 'business as usual' model – i.e. no reduction in emissions – whereas to maintain the temperature as shown by the blue line, requires immediate serious action by governments to curb emissions and mitigate the effects of climate change. Although this is known as the 'best case scenario,' in reality it is the only scenario in which we can hope to keep global temperatures below a 2°C increase - the limit which the international community agrees is necessary to prevent the worst effects of climate change.

In both cases, temperatures will rise for the next couple of decades. However, scenarios begin to diverge quite quickly when emissions are lowered, leading to a levelling off of warming compared to the 'business as usual' model, which will lead to a much higher change of temperature, with correspondingly more devastating effects on food security and livelihoods.

For the countries featured in the report, the predicted changes under a 'business as usual' scenario are mostly in line with the global mean, with the temperature rising by a projected 4°C by the end of the century. The effects of rising temperatures will not be felt in the same way everywhere. Countries of the Global South are much more dependent on subsistence agriculture and have far fewer resources with which to mitigate or adapt to climate change.



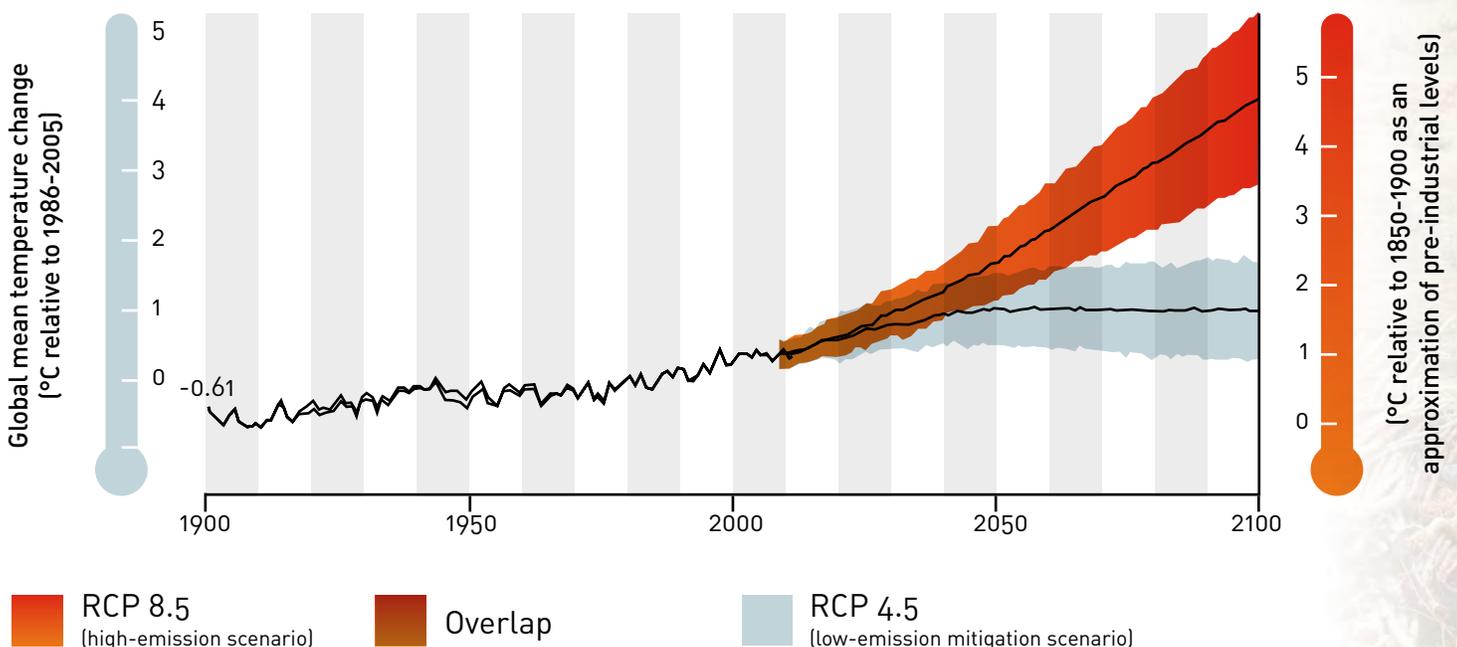
ACCESS TO WATER

With hotter days and a longer dry season, there is less rain to feed water sources, and greater losses from evaporation. In many countries where access to water is already a struggle, there will be less water to drink, grow crops and power electricity. When rain does fall, it tends to fall more heavily. When this happens, less of it soaks into the ground where it's most needed for crops. Instead, it runs off quickly, potentially causing flooding. Heavier rainfall also leads to increased sediment and pollutants in fresh water bodies. This is particularly harmful where people do not have access to safe water. In Ethiopia, for example, almost half of the population relies on unfiltered water sources such as ponds, streams or rivers.



HEALTH

Compared to a future without climate change, the World Health Organization predicts 250,000 additional deaths per year globally as of 2030 due to higher temperatures: 38,000 due to heat exposure in elderly people; 48,000 due to diarrhea; 60,000 due to malaria; and 95,000 due to childhood malnutrition. Changing climate conditions have been linked to increased epidemics in several of the countries featured here. For instance, rising temperatures have been associated with outbreaks of dengue fever, which struck 12,000 people in Honduras in 2013. Such communities are more vulnerable due to a lack of immunity and preparedness.





GENDER

Climate change will have the greatest impact on those with the least power. This includes women, who remain culturally disempowered in many communities. The adverse effects of climate change on agriculture will affect women disproportionately.

Women make up half the agricultural workforce in the least developed countries, but only own between 10-20 per cent of land. When natural disasters strike, socio-cultural norms can impact women's ability to escape. However, when women are involved as equal participants in climate-related strategies and coping mechanisms, those strategies are more likely to succeed.



ECONOMIC IMPACTS

Our country profiles show the various ways in which climate change is already having an economic impact, and those it will have in the future. In Honduras, hurricanes have caused direct and indirect damages of over \$5 billion USD over the course of the 20th century, equivalent to 95 per cent of Honduras' GDP in 1998. In the Philippines, the cost of adaptation for agriculture and coastal zones is expected to be on average \$5 billion USD/year by 2020. In most countries of the Global South, climate change is likely to raise income inequality and reduce household wealth.



MIGRATION

Increased natural disasters, rising sea levels and prolonged droughts are all leading to increased migration and displacement. Typhoon Haiyan forced some 4 million people in the Philippines to leave their homes, approximately 400,000 of whom are still in evacuation centres. In Ethiopia, droughts have contributed to increased rural-urban migration, which is increasing urban vulnerability.



FOOD PRODUCTION

Our global demand for food is rapidly rising, but in many countries of the Global South, crops are failing with increasing frequency due to climate variability and drought. Climate change poses huge risks to global and regional food security, particularly if we continue with 'business as usual' emissions. In countries of the Global South, these risks are greatly exacerbated by low levels of investment in small-scale farmers, low access to technology, reliance on rain-fed agriculture, and high levels of pre-existing food poverty. By curbing greenhouse gas emissions, we can substantially lessen the risks of even greater food insecurity. By investing in small-scale farmers, especially women, we can increase people's food security and resilience to climate change.



RECOMMENDATIONS

At our current temperatures, the poorest in the world are already suffering the impacts of climate change, and they will suffer further as these continue to rise – which they will inevitably do, no matter what we do next. The people who have done the least to cause the problem are bearing the brunt of inadequate action to both mitigate and support adaptation. They need our support now and into the future. We also have a critical choice to make about what future we want for both the youth of today and the next generation. If we act now, urgently and ambitiously, temperature increases can be contained and will begin to level off. A failure to do so will see global poverty eradication become impossible and inequalities spiral. The following recommendations set forth what Development and Peace believes is needed in order to prevent and respond to the worst effects of climate change.



We must establish a fair, legally binding framework on climate change that keeps global temperature increases as far below 2°C as possible, and ensures that the most vulnerable women and men can adapt to the impacts of climate change.

An international agreement is essential to ensure co-ordinated and collective action – we all need to work together. All eyes are now fixed on the 21st UN Climate Change Conference in Paris in December 2015 (COP21), at which all the nations of the world have committed to negotiating a binding universal agreement on climate change. This action must also be replicated at the national level, with effective climate legislation here in Canada. In order to limit temperature rise to no more than 2°C, policymakers must strive for the ‘best case scenario’ by adopting ambitious targets and adaptation measures. While the threat of climate change may seem overwhelming, there is broad consensus that responding to it adequately is both achievable and affordable. A just climate agreement must also ensure the provision of sufficient, accessible and additional public finance to support communities to adapt in appropriate ways to the impacts of climate change.



We must switch to more sustainable ways of producing and consuming, particularly in the areas of agriculture and energy.

An emissions framework as described above will provide the overall limits within which countries can operate. To actually deliver the changes necessary to meet these targets, a transition in the way we produce and consume, particularly in the areas of agriculture and energy, is required. Agriculture, forestry, and other land use account for about a quarter of greenhouse gas emissions globally; in Canada, agriculture accounts for 10% of the total of our

carbon emissions. These activities do not include transportation nor food processing. The Food and Agricultural Organization (FAO) estimates that up to one-third of food produced for human consumption globally is lost or wasted, from initial agricultural production down to final household consumption. In terms of energy, there is no alternative but to transition to a world free from fossil fuels. In order to contain temperature rise as far below 2°C as possible, more than two-thirds of current commercially viable fossil fuels will need to remain in the ground. It is critical that policies are designed with adequate social and environmental safeguards to ensure that they do not result in unintended impacts on the rights and resilience of vulnerable communities.



We must support and promote sustainable agriculture and secure access to natural resources to ensure that the most vulnerable people can adapt to the impacts of climate change.

As the case studies demonstrate, some inevitable impacts of climate change will be felt in the coming decades even with effective action to reduce emissions. It is therefore vital that the most vulnerable people and communities around the world are supported so that they can adapt to these inevitable impacts. The scale and complexity of climate change can sometimes make the task of adaptation appear extremely difficult – but it is part of human nature to adapt, even in the face of seemingly insurmountable challenges. The individual stories of our partners in the Global South demonstrate the resilience of small family farmers, and how with even modest levels of investment in simple technologies (such as irrigation systems in Ethiopia) small family farming can flourish. Agriculture must be concerned with nourishment and the environment, and not only on commercial profitability. Ensuring that there is sufficient investment in sustainable approaches to agriculture is a first step to ensuring people not only survive, but thrive in the face of climate change. This investment must be supported by a policy framework that builds on the efforts of small family farmers and avoids the traps of ‘false solutions’ such as biofuels and ‘climate-smart agriculture.’ Guaranteeing access to natural resources, particularly land and water, are prerequisites to ensure that small family farmers can protect their livelihoods from climate change and thereby contribute to food sovereignty.



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