

CLIMATE CHANGE IMPACTS ON INTERNATIONAL SECURITY

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Jan 10, 2020

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INTRODUCTION

- Good afternoon, I will talk about climate change impacts on international (human) security and then answer questions about how Canada needs to take action and prepare
- International security and climate change is a complex multi-faceted topic so I will only be able to introduce a limited set of ideas in 10-15 minutes
- This is food-for-thought discussion, recognizing that climate change is our greatest threat to global security

INTRODUCTION - CLIMATE CHANGE & INTERNATIONAL (HUMAN) SECURITY

Today, environmental degradation is considered an international security threat, although we may not have seen it this way in the past, I mention some recognized actors that consider this the case today.

In 1980, the **International Peace Research Institute of Oslo** discussed environmental safety as a new field in the context of national security beyond military security, for the **the United Nations Environment Programme (UNEP)**,

Prof. Thomas Homer-Dixon (a Massey Senior Fellow) stated a while ago (mid 1990s) that environmental scarcities are contributing to violent conflicts in many parts of the world.

Also, **Robert Kaplan** stated in the 1990s that the environment is the national-security issue of the 21st century.

The **Secretary-General of the United Nations** explains that human security goes beyond violent conflict. Human security is freedom from want, freedom from fear, and the freedom of future generations to inherit a healthy natural environment. Therefore, international security has economic, food, environmental, community, demographic and military dimensions. Since the Cold War, the concept has broadened to be concerned with the future of humanity.

In 2007 **the UK delegation to the United Nations** made some of the connections between border disputes and effects of climate change such as melting ice sheets, rising sea levels, etc. Environmental changes causing food and water insecurity, lead to migration. Migrations of people into others' territories' create the potential for instability and conflict. Conflict results over energy supplies (and we have seen this on a larger scale as a result of most of the oil wars in the Middle East). Also, conflict arises due to scarcity, poverty, and extreme weather experiences causing distressing circumstances.

The **Intergovernmental Panel on Climate Change (IPCC)** states that **climate change affects the poorest people and countries, most intensively**, creating negative impacts on human health and food production, Climate change degrades potential progress on many of the Sustainable Development Goals. It threatens food security by damaging agricultural productivity, creating water scarcity and soil deterioration, as well as affecting the stability of societies. The most acute and immediate economic threat to Human Security comes in the form of famine, so it is alarming to consider the potential threats of climate change to international security.

INTRODUCTION - CLIMATE CHANGE & INTERNATIONAL (HUMAN) SECURITY

- Also, the **UN Security Council** has discussed the issue of environmental security as part of international security in debates on climate change. However, there has been politicization of the issue more so in the UN than in the EU.
- **The EU**, has mainstreamed climate change as part of its international security agenda, orienting it towards **conflict prevention and crisis management** to avoid reactionary approaches, as usually taken by the US. When we **mainstream climate change mitigation and adaptation** within the international security agenda, we head off the potential for conflict rather than waiting for conflict to occur and then dealing with it and the aftermath. The EU is a leader in this policy domain.
- I am not sure if I have to explain to you that safety is an essential human right, threatened today by climate change through catastrophic weather events, droughts, floods, crop destruction and pollution of water bodies (food, water and energy insecurity are increased). Climate change is a threat multiplier because it aggravates existing poor conditions. We also lose assets and economic value via increasing disasters. Moreover, climate change is a barrier to the sustainable development goals in eradicating poverty, health, access to education, and ensuring sustainable development.
- Although the IPCC emphasizes that climate change affects the poorest countries the most, we can see from recent examples **that wealthy countries are also drastically affected**. We have seen devastating fires in Canada (Alberta and BC), California, the Brazilian Amazon, and most recently Australia where over 5 million hectares have been burned and over half a billion animals killed. In Toronto, we have still not recovered from flooding of our Toronto Islands and we lost businesses that served islanders. Flooding of Manhattan in New York (Hurricane Sandy) is another example of a costly catastrophe. All of us must realize that no amount of money can buy full recovery from severe impacts of climate change, when we are talking about a loss of lives, species, and historical sites. Moreover, with repeated events, we will not be able to afford recovery, and adaptation may become more difficult because we cannot even adequately pick up the pieces after disasters occur.

FOOD SECURITY

- On the topic of food security and according to the The Food and Agriculture Organization (FAO), food security 'exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and preferences for fresh food and a healthy life.
- While agriculture is a source of GHGs, it is also negatively impacted by climate change so, we need to change our agricultural systems. Research has reported that there is some correlation between peace and food security meaning that when there isn't enough food, a likelihood of local conflict increases.
- Some estimates are that about 40% to 50% of the Earth's surface is assigned to agricultural activities. The FAO says that agricultural activities consume 70% of available fresh water, but provide livelihoods to 40% of the world's population and contribute to about one-third of global emissions of greenhouse gases including CO₂ (carbon dioxide), CH₄ (methane) and N₂O (nitrous oxide).
- Climate change tends to reduce agricultural productivity, leading to food insecurity and then exposing societies to risk and the need for migration.
- Good governance with international cooperation can address food insecurity, by strengthening ties between countries and developing a more fair and inclusive international trade system. With respect to trade, (1) food imports to vulnerable countries are affected by global climate change, thus having a direct impact on the domestic food supply, so this is not just about local supplies being affected. To help these countries; trading price adjustments could help with food availability. Agriculture is one of the sectors most exposed to climate change. Multi-lateralism and international institutions are important for managing this issue globally.
- Also, examples of adaptation strategies for vulnerable populations would include helping farmers to diversify their income with off-farm employment; creating safe and dependable water supplies; educating communities; and establishing weather-based crop insurance systems.

References: Figueiredo Pereira de Faria et al. 2016.

WATER SECURITY

- On the topic of water security, I will provide an example of Africa where climate change is a threat multiplier for water insecurity: Most conflicts over land and water in Africa involve groups abused by oppressive regimes. Water security is affected by climate change and this issue is critical for the poorest and most vulnerable societies in the world since they depend on water to meet their needs.
- Global climate change affects rainfall patterns and increases the unpredictability of extreme weather events. It has adverse impacts on health and food security.
- Environmental security literature has mentioned cases of armed conflict due to competition over scarce resources. Demographic and environmental stress can lead to violent conflict, more likely when groups are denied access to decision making. Structurally asymmetric societies face heightened problems in periods of environmental crisis. Water shortages and drought affect marginalized populations that lack alternatives, and they may also be ignored by their central government, thus not receiving any help unless they fight.

References: Figueiredo Pereira de Faria et al., 2016; Huntjens & Nachbar, 2015; Theisen et al., 2011.

WATER SECURITY

Many countries and regions are facing water security issues. For example:

- Romania has had roughly 48% of its arable land affected by drought resulting from climate vulnerability. This affects agricultural productivity, disrupting the country's economy,
- We may remember Cape Town, South Africa in the news for potentially having no water. It averted its extreme drought through local cooperation and water management initiatives.
- Asia is experiencing more natural disasters, and transboundary water issues, thus facing major water security challenges. Water resources for countries such as Afghanistan, Pakistan, India, China, Myanmar, Bhutan, Nepal and Bangladesh are tied to the Hindu-Kush Himalayan (HKH) mountain range, where over 46,000 glaciers (the largest ice cover outside the N and S poles) hold some of the largest repositories of fresh water on earth (Wilson, Gladfelter, Williams, Shahi, Baral, Armstrong, & Racoviteanu, 2017); Qiu 2010). This "water tower of Asia", a mountain chain stretching from Pakistan to Myanmar, retains snow and ice that form the headwaters of the continent's major rivers sustaining more than 1.3 billion people (estimated as 2 billion people by 2100) for consumption, agriculture, and hydropower. But the glaciers are shrinking due to climate change. A study was completed by 210 scientists from 22 countries over five years. These scientists predict masses of climate refugees and regional conflict by 2100, even if we stop climate change at 1.5degC because about 36% of the glaciers will have already been lost (Chugh, 2019). Floods are predicted for mid-century from meltwater, including landslides, bursting of dams, soil erosion and crop failure. Then, droughts will take over – water, food, and energy security (dams) issues will result.
- India, Mali, Mexico; Papua New Guinea, and Somalia are additional places where environmental stress is linked with local conflict.
- Along coastlines, sea level rise pollutes fresh water with salinity, so we lose fresh water and this is already in play.

ENERGY SECURITY

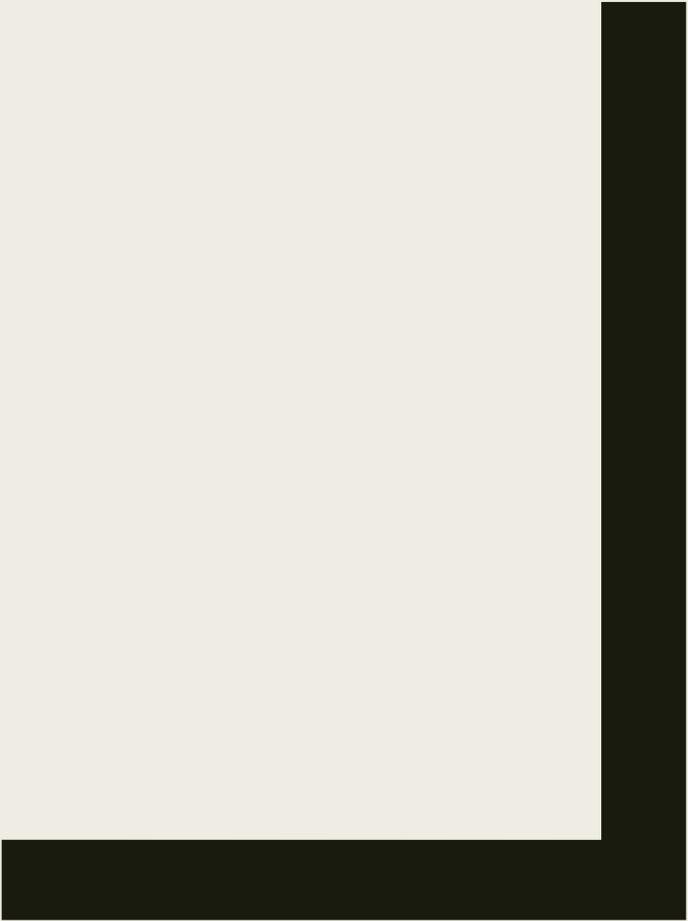
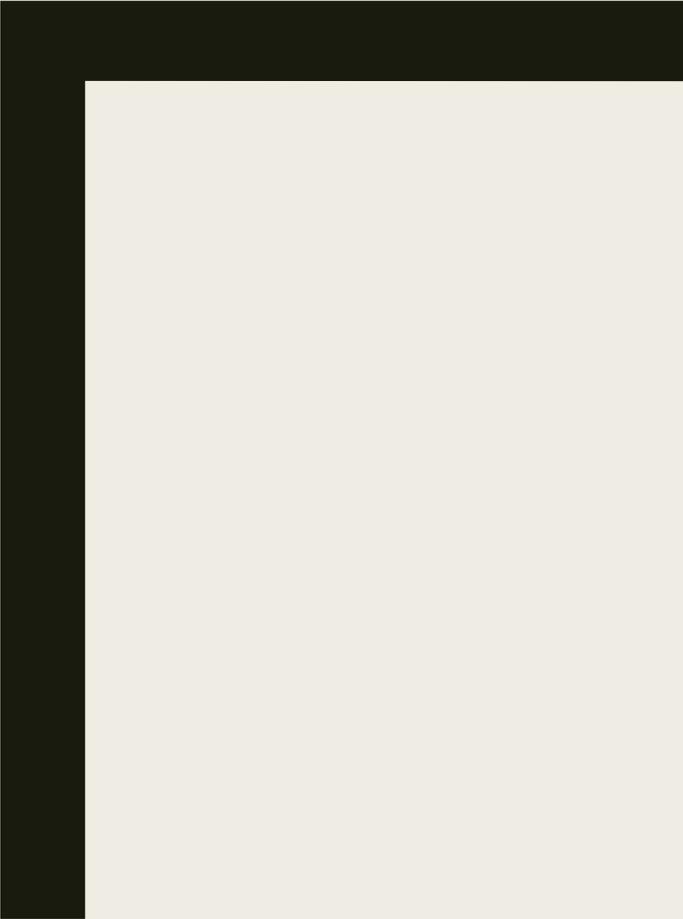
- I will next address energy security, briefly. By burning fossil fuels that produce GHGs, we increase energy insecurity, not only through climate change reducing the effectiveness of hydro-electric dams, but also via direct international conflict.
- The problems of reliance on oil and gas are a multitude, not only in regards to creating climate change, but also because most of the West's problems with the Middle East relate to control and wars over oil (Chomsky, Achcar, & Shalom, 2015; Jones, 2012). Thus, the main cause of climate change, burning fossil fuels, is a security threat, relating to the precariousness of energy security. So, the solutions for climate change, including clean energy infrastructure, increase energy security and the West's security. The Middle East's oil becomes a reduced concern when we address climate change by divesting of oil and gas in favour of renewable energy.
- I am also going to tell my story about the National Renewable Energy Lab in Denver (NREL) as one illustration of how critical renewable energy is to energy security – A US military man was on the same NREL tour with me and I expressed my surprise in his interest. He explained that he was there because the greatest threat to a base is the transport of oil and gas in for its energy. The enemy tries to intercept the supply routes because without energy the base is useless. Instead, using solar, a base has an independent energy supply. So, solving climate change by divesting of fossil fuels and instead, using clean renewable energy increases our energy security.
- Local pollution is also increased by burning fossil fuels, creating health issues such as asthma, but climate change also affects health through species migration, for example, Lyme Disease is related to ticks. Their populations are moving north and increasing. Thus, climate change increases the risk of diseases by changing ecosystems. I don't have time to talk further about climate change and health. However, climate change has a multiplier effect on health issues.

WHAT SHOULD CANADA DO?

- MITIGATE CLIMATE CHANGE BY MEETING OUR PARIS COMMITMENTS
- WORK WITH THE UN TO PRESSURE LAGGARD COUNTRIES TO MEET PARIS GOALS – WE ARE ONE OF THE LAGGARDS SO “WALK THE TALK” FIRST
- REVIEW FOREIGN AID WITH INTENT TO INCREASE IT (ALSO PART OF PARIS AGREEMENT)
- NATO FUNDING – THE WORLD IS GOING TO BECOME MORE UNSTABLE WITH CLIMATE CHANGE + MULTI-POLARITY; Arctic resource extraction is contentious with Russia, China, US vying for control
- 100% RENEWABLE ENERGY AND ELECTRIFICATION IMPLEMENTED ACROSS CANADA & BUILD OUR OWN CLEAN TECHNOLOGY INDUSTRY
- APPLY THE PRECAUTIONARY PRINCIPLE TO SECURITY POLICY, as does the EU
- BE INVOLVED IN STRENGTHENING INTERNATIONAL AND NATIONAL INSTITUTIONS RE: GLOBAL GOVERNANCE STRUCTURES TO COORDINATE CLIMATE SECURITY MEASURES
- Adopt and advocate for circular economy trade and other trade practices (de Lange, Walsh, & Sheeran, 2018), considering countries vulnerable to climate change related conflicts – in the WTO and in trade agreements
- Discourage corporate lobbying activities, for example, by reducing openness of government to these activities (re: oversight). A study would be helpful.
- Change government procurement rules re: level playing field for bidders such as minimum pay, environmental protections, no lobbying activities, etc. Rank bidders by sustainability and performance track records to reward (and record) responsible business practices.

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APPENDIX

PRECAUTIONARY PRINCIPLE

“The precautionary principle, proposed as a new guideline in environmental decision making, has four central components: taking preventive action in the face of uncertainty; shifting the burden of proof to the proponents of an activity; exploring a wide range of alternatives to possibly harmful actions; and increasing public participation in decision making.”

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PREVENTATIVE GLOBAL ACTIONS

- IGO AND NGO COORDINATION ON CLIMATE SECURITY POLICY
- SUSTAINABLE LAND MANAGEMENT
- PRESERVE RESOURCES (WATER, AGRICULTURE) AND LIVELIHOODS
- ENVIRONMENTAL PROGRAMS AS PEACE BUILDING INITIATIVES - conflict prevention, climate adaptation, aid and peacebuilding
- Example: Great Green Wall, which aims to revive drought-stricken areas of the Sahel in Africa, should reduce poverty and resource insecurity, and help stabilize regions against climate violence (UN, 2019). **Africa's Great Green Wall reaches out to new partners** <http://www.fao.org/news/story/en/item/210852/icode/>

Paris Agreement - EU

- The Paris agreement aims to limit global warming to well below 2 °C and pursue efforts to limit it to 1.5 °C in order to avoid the catastrophic consequences of climate change. It has been signed by 194 countries as well as the European Union. All EU countries are signatories on their own, but they coordinate their positions together and set common emission reduction goals at the EU level.
- In order to reach the goal of the Paris agreement, countries are required to set goals for their climate efforts every five years, increasing their level of ambition over time. These goals are known as nationally determined contributions (NDCs). Updates and new goals are expected from all signatories by the end of 2020.
- The EU was the first major economy to submit its emissions reduction goal under the Paris agreement. The EU's current goal is to reduce its CO₂ emissions 40% by 2030, compared to 1990 levels. However, there is increasing pressure to set a more ambitious level.
- According to an IPCC report on global warming from 2018, global emissions should reach net zero by 2050 if the 1.5 °C target is to be met. Global youth protests and school strikes for climate, started by the Swedish activist Greta Thunberg, and a special Eurobarometer survey from 2019 show that Europeans are willing to pursue stricter climate goals.
- <https://www.europarl.europa.eu/news/en/headlines/society/20191115ST066603/eu-and-the-paris-agreement-towards-climate-neutrality>