Climate change: from security perspectives

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Climate change is widely recognized as one of the most serious threats to human beings and ecosystems. As our understanding of the climate change problem has increased, we have also witnessed a vast increase in the use of terms "climate security" by experts and practitioners worldwide. Numerous publications have addressed the issue of climate security, and many other studies have aimed at categorizing definitions and approaches of climate security. Four types of approaches emerged by reviewing existing literature; (1) long-term irreversible planetary changes, (2) short-term abrupt risks to individuals, (3) cause of conflict and violence, and (4) impacts on military and defense organizations. Table1 summarizes what is assumed as threat and what is assumed to be protected from the threat so that the differences become clearer. The four approaches also send different messages on how insecure conditions can be mitigated.The first approach considers the long-term climate change to be a serious threat, not to the national security of any one country, but to future generations and the global ecosystem. Advocates of this approach are worried that the progression of climate change could render Earth uninhabitable. The only way to avoid the crisis is to mitigate climate change by reducing GHG emissions. The long-term temperature goal such as 2°C needs to be achieved from the viewpoint of this approach. The second approach considers extreme weather events and other impacts of climate change at the regional level as a threat to individuals. Extremely high temperatures and epidemics of diseases could have serious health implications, and the food and water supply could be limited by serious droughts. All these concerns are less relevant to national security and much more related to human security, food security, and water security. Adaptation actions are required to improve the situation. The third approach focuses on the interactions between the impacts of climate change and conflict between people. With this approach, "threat" originates from people outside of your own community. Displaced people may immigrate due to damages caused by climate change, and the immigration could raise tensions between various groups of people. As the impacts of climate change do not always lead to conflict, regions need to increase social stability by improving the level of governance and building resilience to natural hazards. The fourth approach employs a narrower definition of security, one in which national security is conducted by the military. National security has been concerned with other countries' armed forces to a nation state. With "climate security", however, the threat has been expanded to include a wide variety of impacts of climate change. To avoid these losses, those using this approach emphasize the importance of military and national security strategies to take into account the impacts of climate change.Categorization of climate security concept is useful to recognize various types of threats we need to take into account, and to check if each country is well prepared for them.

Keywords: climate change, security, conflict, social instability

Table 1: Summary of the four categories of climate security discourse

Category	Threat	Objects of protection	Means to improve level of security
Long-term irreversible planetary changes	Global changing climate, warming world	The planet, human beings, and the ecosystem	GHG emission reduction at global level
Short-term abrupt climate change risks	Extreme weather events and other impacts of climate change to individuals	People's daily life, including stable supply of basic human needs	Adaptation measures, building resilience
Cause of conflict and violence	Migration and other causes of conflict between groups	Own group	Reduction of social instability
Military and defense implications	Long- and short-term damages (i.e. sea level rise, extreme weather events)	National territory, military facilities, and defense forces	Adaptation in the area of defense and other military operations