

Defining climate-change victims

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Abstract This article introduces the concept of “climate-change victims” and classifies categories of threats and groups of people who would be vulnerable to and victimized by human-induced climate change. (The full, correct wording is “human-induced climate-change victims”, but we will use just “climate-change victims” in the rest of the article.) It offers a definition with three levels of climate-change victimization and differentiates “climate-change victims” from “natural-disasters victims” and from “climate-change migrants”. The article sets an agenda for a new type of victimhood and could lead to further research on possible prevention, accountability measures, environmental tribunals, and compensation mechanisms to recompense climate-change victims.

Keywords Climate change · Victims · Vulnerability · Migration · Suffering · Natural disasters

Introduction

Humans can be victims of other humans—perpetrators of crimes inflict suffering on their victims (Letschert and Dijk 2011; Harrison 2010). Humans can be victims of nature and suffer from earthquakes and other hazards (Drogendijk et al. 2011; Crocq et al. 2005; Taylor 1990). Nature can

suffer from humans and this worsens in the era of climate change (Bailey et al. 2011). And humans can suffer from climate change (Farbotko 2005)—or, ironically, from the suffering of nature inflicted by humans.

The vast victimology literature (Shoham et al. 2010) and the equally vast scientific literature on climate change so far have both under-explored the question of who are, or who could be, the “victims of climate change”: they mostly focused on victims of natural disasters or on displaced people as a result of environmental change. Some scholars have started addressing environmental victims (Williams 1998), others focused on compensation issues: Farber (2007), for example, discusses environmental harm that could be a subject of a compensation system. Nevertheless, most of the focus is on litigation as a result of industrial wastes and spills and analysis of the corporate responsibility for environmental pollution, rather than addressing climate change as a causal phenomenon, where people suffer from extreme weather conditions, loss of resources, or other circumstances that cannot be pinpointed as the responsibility of any single government or corporation. Environmental law has indeed developed immensely, but it has been based mostly on investigating and sanctioning corporate polluters, not so much on climate change consequences as such. We are unaware of research that has deliberated and defined the characteristics of climate-change victimhood.

The purpose of introducing the terminology “climate-change victims” is to fill this gap, to challenge the over-focus of past and current research on climate change refugees, to open debates, to encourage new research, looking beyond the bounds of traditional notions of justice and human rights violations, and to consider a different type of victimhood, not caused by armed conflicts and crimes, by economic mismanagement and corporate polluters, or by

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natural disasters. The new definition and categorization of existing and potential climate-change victims can, we hope, help to direct efforts by UN organizations and humanitarian NGOs to identify groups at risk, build resilience, reduce victimization, and lead to more effective recovery from trauma.

Climate is changing rapidly and it is no longer possible to predict both immediate and longer term planetary conditions (Bosy et al. 2010), but what is clear is that an increasing number of people will be forced to adapt and build resilience to the impacts of climate change whether or not they have the economic, social, and personal resources to do so. Climate change will create new inequalities, and also exacerbate existing inequalities. People already affected by under-development, poor governance, or lack of access to know-how or to the latest technology and information may be multi-victimized with additional suffering from repeated extreme weather conditions. Similarly, large numbers of refugees and displaced people, those affected by armed conflicts, marginalized within states or discriminated by age, gender, ethnicity, religion, can suffer from climate change consequences and a lack of resilience added to their existing social and personal vulnerabilities.

We would like to explore the conceptual and empirical relationship between the physical science of climate change and the behavioral dimension of climate-change victimization. We structure our argument as follows. In “[Environmental assaults and victimization](#)”, we examine environmental assaults and the extent of projected victimization and human insecurity. In “[Definition of climate-change victims](#)” we propose a three-tiered definition of climate-change victims: primary, secondary, and tertiary victims. In “[Differentiating climate-change victims](#)” we differentiate climate-change victims from other categories of victimhood and in “[Challenges for future research](#)” we identify challenges for future research and present possible methodologies for addressing these challenges.

We see this article as a means of initial introduction of new terminology, as agenda-setting. Accordingly, at present our ambitions do not extend to satisfy all expectations that may arise—for example a legal definition, codification of rules, establishment of a comprehensive system to compensate climate victims. Ideally, policies toward both mitigation of, and adaptation to, climate change will be instruments to prevent or reduce climate-change victimization. What we expect is that defining climate-change victims and differentiating these from natural disaster victims and climate-change migrants will be debated, clarified, revised, and, with future research undertaken, it would help to structure more effective international and domestic relief efforts.

The focus on “who are the climate-change victims?” rather than “who is polluting more?” would help to create consensus and positively affect post Kyoto diplomatic

negotiations. One comparative example: after decades of fruitless debates on whether or not there is a legal right for humanitarian intervention, it was exactly the shift of the focus from the interests of intervening states toward the needs of the victims of genocide and crimes against humanity, that made possible the consensual adoption of the concept of “responsibility to protect” (R2P) by the UN General Assembly in 2005.

Environmental assaults and victimization

Neoclassical theories of economic, social, and environmental development have increasingly dominated the late twentieth century and the beginning of the twenty-first century but, rather than enhancing Earth systems sustainability, they have created a global physical environment with the potential to victimize humanity on a scale never before experienced—or imagined. Financial–industrial elites are increasingly out-of-step with the observed reality and physical science of global environmental change (Alison et al. 2009). The physical, social, and psychological risks, and levels of personal resilience to climate change are largely unrecognized in current global governance and reflect the losing battle waged by climate science to manage the unavoidable outcomes of largely unmanageable mitigation.

Environmental assaults

While there is an extensive literature on natural disaster victims (Kumagai et al. 2006), and policy recommendations on how to manage the aftermath of disasters (Tinguaro Rodríguez et al. 2010), this knowledge has been incidental to the concept of victimization we are proposing. There is hardly any research on climate-change victimhood or climate-change victimization or on the reactions of the self to victimhood and of the reactions of others to victims and victimizations (Kirchhoff and Morosawa 2009; Morosawa 1998) arising from collapsing eco-systems that no longer provide a stable and predictable “safe operating space” (Rockström et al. 2009) for people.

The latest research recognizes global environmental change as nine quantifiable planetary boundaries that should not be transgressed to avoid *unacceptable* environmental change. These are:

1. climate change—CO₂ and other GHG emissions associated with increasing global temperatures (IPCC 2007);
2. ocean acidification—bleaching of coral reefs and negative impacts on reef ecology relevant to sustainability of human life on low-lying coral atolls (Veron et al. 2009);

3. stratospheric ozone—O₃ depletion is related to an increased incidence of cancers (Ni-Bin et al. 2010);
4. the biogeochemical nitrogen (N) cycle and phosphorus (P) cycles—a counterbalance to reduced crop yields leading to dependency of the world's poor on international agrochemical industries (Erenstein and Thorpe 2010);
5. global freshwater use—it is estimated that by 2030 more than half the world's population will face water shortages (Ridoutt and Pfister 2010);
6. land system change, land-use and land-cover change—the current rate, extent, and intensity of LULCC is far greater than at any time in recorded history, driving unprecedented changes in ecosystems and environmental processes on local, regional, and global scales (McAlpine et al. 2009);
7. loss of biological diversity—the negative effects on natural ecosystem processes and services that benefit and stabilize human society (Xi 2011);
8. chemical pollution—human health is directly related to increased levels of atmospheric, terrestrial, and water chemical pollution (Kampa and Castanas 2008); and
9. atmospheric aerosol loading—increased atmospheric loading and deposition of mineral dust aerosols have important human health implications (Goudie 2009).

The research explores the social effects of transgressing these planetary boundaries (only seven have been quantified to date) and is defined as a function of the social–ecological resilience of the societies affected by such transgression.

Victimization as a violation of secure behavioral space

We incorporate this latest way of thinking about global environmental change by adding another layer to analyze the victimizing potential of breaching these boundaries defined by natural science; that is, we focus on how climate change threatens what we describe as a *secure behavioral space*, a concept adapted from the original notion of safe operating space, proposed by Rockström et al. (2009), and one that could lead to the development of a more precise definition of human security in a future climate-constrained world.

The fundamental threats posed by climate change are temperature-related (Köhler et al. 2010)—inter alia water-related—in terms of sea level rise because of rapid melting of the continental Greenland and West Antarctic ice sheets with estimates of rise far exceeding IPCC (2007) projections (Siddal et al. 2003; Hearty et al. 2007; Fenoglio-Marc and Tel 2010). Two percent of the Earth's surface is in the low elevation coastal zone (LECZ)—defined as the delta

regions of major river systems, but less than 10 m above mean sea level—and is home to 10% of the global population (Martinez et al. 2007), 60% of whom live in climate-dependent megacities (IIED 2009; McGranahan et al. 2007). It is also an area of the Earth's surface particularly vulnerable to land subsidence—primarily because of urbanization—and sea level rise, increasing the personal risks associated with tidal surges caused by intense tropical storms, flooding, and coastal erosion (Overeem and Syvitski 2009). People living in mega-cities, for example Maputo (Mozambique), Dar Es Salaam (Tanzania), Mombasa (Kenya), Knulna (Bangladesh), and Cotonou (Benin), are especially vulnerable (IIED 2009), as also are people of many Pacific Island States. In Papua New Guinea, a remote community on the Carteret Islands in Bougainville is among the first recorded people on Earth, in the context of human-induced climate change in the twenty-first century, to have lost their ancestral lands to rising sea levels (Yamano et al. 2007; Veron et al. 2009; McNamara and Gibson 2009). In Neolithic settlements on the abandoned Yellow and Yangtze deltas of China, people did migrate as a direct result of sea level rise (Chen et al. 2008) and there is no reason to assume that this will not occur in the future. There is still a complex of reasons choices will be available and why people may decide to stay and adapt, or migrate. While common sense would suggest that people threatened by rising seas would choose to leave, a link between sea level rise, environmental migration, and “homeless state” in modern times is yet to be empirically established.

Water scarcity, as a direct result of climate change, is also part of a global mosaic of interactive, unpredictable, and potentially catastrophic regional weather patterns that pose immense threats to food security in coastal, dryland, and high altitude inland cities of the planet (IIED 2009; de Fraiture et al. 2010). Food shortages at home could be a powerful driving force to seek food security elsewhere. In 2005 nearly half of the economically active population in developing countries—2.5 billion people—relied on agriculture for its livelihood, and in 2009, 75% of the world's poor lived in rural areas (Nelson et al. 2009). Many people have become locked into a cycle of dependency on—or are victimized by—international agrochemical companies that promote reduced crop yields by simply forcing people to buy patented genetically modified seed requiring expensive pesticides and herbicides, thereby making any existing environmental damage worse (Rockström et al. 2009).

A further immense threat—partially ignored in the debate until the release of the IIED (2009) report—is the exponential increase of the human population that even now has exceeded the resource capacity of the Earth. It is projected that this factor alone will compound the consequences of climate change described above and severely

affect already limited and unequal access to water and food in many regions of the planet (FAO 2009). Certainly the loss of biodiversity, reduction of fisheries, and other negative consequences of climate change would add to the list of environmental threats and would also be victimizing factors.

If we add to these threats concerns about shortage of natural resources, peak oil, infectious diseases, etc., we have to acknowledge that there are many complexities and factors that represent potential victimizing forces. In our pioneer attempt to define climate-change victims, however, we base our research on the nine quantifiable boundaries established by natural science, and transgression of these as violations of *secure behavioral space*.

Definition of climate-change victims

We tentatively propose the following definition:

Primary, secondary, and tertiary climate-change victims

A victim in the context of climate change, or a *primary climate-change victim*, is an individual whose secure behavioral space has been violated by repeated or escalating series of environmental assaults to the extent that the individual can no longer function independently either directly as a result of actual physical and/or psychological damage, or indirectly, because of significant deterioration of the physical, social, and economic milieu. Thus, *primary climate-change victimization* is a result of series of such assaults that violate secure behavioral space, resulting in debilitating harm to the individual victim.

Secondary climate-change victims are “first responders”, dependants, relatives, and other persons, who experience significant or debilitating physical, social, economic and/or psychological damage as a result of environmental assaults on the primary climate-change victim. Consequently, *secondary climate-change victimization* arises as a result of the series of environmental assaults compounding violation of the secure behavioral space of an individual person.

Tertiary climate-change victims are victims whose secure behavioral space is affected, but not violated (i.e., they neither experience direct pain and suffering, nor do they witness that pain and suffering) by environmental assaults. Tertiary climate-change victims typically have no direct contact with either primary or secondary climate-change victims. Therefore, *tertiary climate-change victimization* is deterioration of the behavioral context, coupled with fear and anxiety that, if not mitigated, can become threats to a person, who can

be potentially exposed to primary and secondary climate-change victimization.

Violations of the secure behavioral space of climate-change victims can be due to omissions or deliberate intention not to act, or unintentional actions by States, non-state entities, businesses, groups, or individuals that threaten or diminish environmental sustainability. Our definition refers generally to environmental assaults and their affects on the secure behavioral space of individual persons, and avoids the issue of which agency is responsible for these assaults.

The definition is based on the common notion of continuous, repeated violations. It avoids association with victimization from single events that are typified by random crimes (e.g. murder, rape), armed conflicts, or natural disasters (e.g. earthquakes, hurricanes) with quantifiable, interrelated, and discrete assaults on the physical, psychological, and social self. The actual process of climate-change victimization is not a singular process, rather a stepwise, repeated, and multiple victimization—multi-victimization—experienced in slow motion. Victims of climate change are victimized gradually by the accumulation over many years of ineffectual climate mitigation policies, by late and inadequate adaptation measures, by lack of sustainability approaches to lifestyles, including by the victims themselves. The definition also implies that climate-change victims’ behavior, although restricted by the assaults, can also be instrumental—affected people may strengthen their resilience, resist displacement, adapt to weather extremes. In the same way as victims may have been part of the victimization, they can also be part of the *de-victimization* by adopting measures to secure their behavioral space.

Levels of climate-change victimization

The definition helps to categorize levels of climate-change victimization and define separate types of victimhood. Tertiary climate-change victims may become primary victims, and vice versa. The definition establishes a scope of environmental harm and envisages reactions of climate-change victims to direct and completed invasions of changed environmental conditions. The actual harm from an environmental assault only becomes a victimization when escalating personal insecurity and vulnerability block the normal potential of the affected person to resist intervention. Such accelerating blockage of potential parallels Maslow’s hierarchy of human needs (Goble 2004) in pursuit of self-actualization, i.e.:

1. physiological for survival—air, water, food, shelter, procreation;
2. safety—security, stability, law, order;

3. social—family and community;
4. esteem—status and recognition; and
5. self-fulfillment.

When a prior need is satisfied, the individual moves to a higher stage in the hierarchy. Similarly, we can think of five categories of victimization, when people build resilience against assaults, they satisfy one level and then move to the next level.

Maslow's hierarchy of human needs—a fundamental tool in behavioral sciences—has been gradually accepted in the literature on sustainable development and in various management studies, for example operational water resources management (Melloul and Collin 2003), food management (Satter 2007), and assessment of a global hierarchy of national development needs (Udo and Jansson 2009). Other victimology-related disciplines, for example transitional justice, psychology, victim recovery, etc., also take into consideration the hierarchy—satisfying victims' needs for truth and justice first (individual) and, after some degree of satisfaction, pursuing higher (societal) values, for example reconciliation (Roberts 2009). Maslow's concept may determine at what stage the threshold between non-climate victimhood and climate victimhood is crossed. It may also help to categorize disempowered groups who could be potentially victimized more than others as a result of variable and unpredictable global climate. The changed environmental conditions will affect how people, individually or collectively, lead their daily lives.

Differentiating climate-change victims

“Climate-change victims” is a narrower and less ambiguous category than “global environmental change victims”. We focus on the victimizing potential of human-induced global warming, directly related to increased frequency and intensity of extreme weather events (EWEs) as major environmental assaults. It would have been more complex, almost unrealistic, to deal with the entire gamut of global environmental change effects on humanity; we therefore prefer to focus on victims from global warming, not from all other environmental changes.

We distinguish climate-change victims from other victimhood as follows:

1. Climate-change victims are different from the victims of violent crimes, for example murder, robbery, rape, other types of violence or criminal behavior, committed by clearly identifiable perpetrators. The traditional notion of victimhood has been based on perpetration of such crimes, and the law enforcement and criminal justice systems deal with such crimes. We regard climate-change victims as a different category of victim, where perpetrators are not identifiable and where traditional criminal justice, based on investigating crimes and prosecuting perpetrators, might not be the best way to offer relief.
2. Climate-change victims are generally different from victims of environmental pollution, caused by industrial waste, spillages, or other activity, where individual corporate responsibility can be associated, blamed, and investigated, and the culprit prosecuted. Although partially linked to industrial over-exploitation of the Earth and its resources, climate-change victimhood results also from worsening ecological conditions as a consequence of individual humans' lifestyles. Environmental law has developed to enable successful litigation when corporate responsibility for pollution is identified, and to enable award of compensation to such victims, but a question remains whether this case law may serve as a background to develop compensating mechanisms for climate-change victims.
3. Climate-change victims can be differentiated from victims of natural hazards or events unaffected by human activity. The attribution of causality for natural disasters to climate change is contested and often highly politicized (Sturm and Oh 2010; Ward et al. 2008; IPCC 2007). Climate-change victims are individuals and groups not necessarily damaged by a single natural hazard, rather gradually victimized over time by changing climate conditions.
4. Climate-change victims can, to some extent, be regarded as victims of human rights violations, perpetrated by states, either through action or inaction. There is growing recognition of the right to a healthy environment: individuals should have constant access to information on the state of the environment and natural resources, they should be consulted and even actively take part in decision-making on environmental policies. Later in the article we address how a state's failure to warn people of mudslides was deliberated in the European Court for Human Rights (*Budayeva vs. Russia*) and see possible links to the use of human rights law and practice to deal with climate-change victimhood.
5. Finally, climate-change victims are not necessarily displaced people, as many scholars and advocates suggest. Climate-change victims could be those who move, but they could equally be those who stay and suffer.

The first two differentiations are clear and non-controversial, but the last three need additional explanation:

Victims of natural disasters and climate-change victims

We regard victims of natural disasters and climate-change victims (Kumagai et al. 2006; Dussich and Mundy 2008) as related, but different categorizations. Although circumstances, conditions, outcomes, and perceptions might seem superficially similar, there are differences between victimhood as a direct result of singular environmental events (e.g. earthquake, hurricane) and victimhood arising from a continual, longer-term process of human-induced climate change. Catastrophic natural events that affect large groups of people have been recorded since the birth of human civilization, whereas rapid human-induced climate change is only a recently discovered victimizing force.

We distinguish between the victimizing potential of an increased frequency of EWEs, as a result of climate change, that has been gradually witnessed in the last several decades, and the victimization from non-human induced natural disasters, a more historical category. We prefer the terminology “natural disaster” rather than “natural hazard”. The disasters are results of the hazards—floods, tornadoes, hurricanes, volcanoes, earthquakes, landslides—they lead to financial, environmental or human losses. The losses depend on the vulnerability of the people to such hazards (Birkmann 2006; Bankoff et al. 2004). A natural hazard will never result in a natural disaster in areas short of human vulnerability. For example, even the strongest earthquake will not cause a natural disaster in the middle of Sahara desert, Siberian tundra, or any other sparsely inhabited area. Human vulnerability is what converts a hazard into a disaster, adding and multiplying human victimhood (Wisner et al. 2004). Hazards are events caused by natural forces, and they only become disasters when they are coupled with human vulnerability. Disasters are, therefore, less *natural*, they happen in the world of nature, but they have human input.

Climate change increases the frequency and intensity of natural hazards. For example, hurricanes are natural hazards, producing natural disasters in vulnerable places, but their frequency and intensity is climate-change-related and this is what adds and multiplies the victimization. Human suffering from frequent and intensive EWEs is what we wish to define and address as a major climate-change victimizing phenomenon.

This distinction is not easy, but it is an essential one and worthy of more detailed consideration. The challenge is that, as the research literature shows (Kumagai et al. 2006), even if a pure natural disaster occurs, if it has catastrophic consequences those who have experienced it would, most probably, attribute its cause to some human agents—usually a governmental agency. This may even be more so when the frequency of natural disasters increases. Earthquakes, tornadoes, floods, and firestorms have existed since

time immemorial, but a recent increase in their frequency is regarded as evidence of climate change. Natural disasters, therefore, have become more frequent and less *natural*: the catastrophic firestorms in Australia in 2009 and in Russia in 2010 have been attributed—not only in popular conception, but also among scientists—to human-induced climate change. Russia, for example, showed little interest in climate change negotiations during the COP 15 in December 2009 in Copenhagen, with some diplomats even anecdotally saying that some degree of global warming would be “good” for Russia. But since the fires hit Moscow in the Summer of 2010, climate change and its consequences have assumed a higher priority in Russian foreign policy.

Climate-change victims emerge and conquer space historically covered by victims of natural disasters. Also, as governments grow stronger and develop global governance institutions to cooperate internationally, victims of natural disasters are becoming, and correctly so, more demanding—what produces the victimization is not so much the cause of the disaster but rather the lack of preparedness and capacity of the government agencies to respond to the disasters. What makes people *victims* is not just acts of Mother-nature—*victimhood* derives from poor governance, negligence, and lack of early warning and early responses to disasters—and, therefore, such victimizations are more often regarded as human rights violations.

Climate-change victims and human rights violations

Victims of natural disasters could be victims of human rights violations when governmental responsibility to protect human life fails and people are exposed to natural disasters, i.e. when the relief efforts are ignored or delayed and people experience unnecessary additional suffering (Knox 2009). Victims of natural disasters can approach the courts and demand a judgment on such violations and request compensation. Hurricane Katrina victims were encouraged by the landmark ruling on 18 November 2009, when Judge Stanwood R. Duval, Jr of the US District Court, Eastern District of Louisiana, released the finding that the Army Corps of Engineers’ negligent failure to maintain and operate the Mississippi River-Gulf Outlet properly caused the fatal breaching of the levee and the subsequent catastrophic flooding of New Orleans.¹

The European Court of Human Rights (ECtHR) was approached in *Guerra and others versus Italy*² to establish violation of the right to respect for private life (Art. 8) where the applicants lived near a fertilizer factory which

¹ See details at <http://www.leveeclaims.com/>

² For all ECtHR case law, see HUDOC database at <http://www.echr.coe.int/ECHR/>

had a history of accidents and was classified as high-risk. The applicants were denied information on emergency and evacuation plans for the area in case another accident were to occur and the ECtHR found Art. 8 violation, which can be regarded as an important precedent of a right to vital environmental information.³ In a more serious case, including loss of life, *Oneryildiz versus Turkey*, a fire at a landfill killed members of the applicant's family and the ECtHR similarly to *Guerra* found that “with regard to such hazardous activities, public access to clear and full information is deemed to be a basic human right”.⁴ Taken together the *Guerra* and *Oneryildiz* decisions already frame a duty of states to inform citizens about hazards causing a risk to their life and well-being.

The risks associated with climate change are more diverse and difficult to identify, however the logic of the above decisions suggests that should a government be in possession of relevant information and existing contingency and emergency plans in case of flooding or rising sea levels, it would be under similar Art. 8 obligation to release such information to citizens.

In two further cases the ECtHR addressed state failure to prevent loss of life as a result of flooding (*Murillo Saldias*) and mudslides (*Budayeva*)—hazardous events very close in substance to possible future climate-change victimizations. When the flooding of a campsite after strong rain resulted in loss of life the ECtHR in *Murillo Saldias versus Spain* (in a decision on 28 November 2006) found the application inadmissible on procedural grounds—non-exhausted domestic remedies—but this nevertheless set a precedent of deliberating state responsibility to protect people from floods. The second case *Budayeva versus Russia*⁵ was successfully litigated in the ECtHR and the decision clearly established the obligation of a state to warn potential victims of repeated natural disasters. In July 2000 a murderous mudslide swept through Tyrnauz, Caucasus, killing eight people and destroying buildings. Various types of mud-retention dams protected the town, but these had been badly damaged by earlier mudslides and never repaired, despite warnings. Two weeks before the murderous mudslide the local Ministry for Disaster Relief was again informed by experts of imminent dangers and was requested to establish observation points to issue warnings to evacuate people. No such measures were undertaken. The Court's decision in *Budayeva versus Russia*. (Application No. 15339/02, judgment of 20 March 2008) set an important precedent, pronouncing Russia's “failure to discharge its positive obligation to protect the right to life”

and in particular the omission of the authorities to implement land-planning and emergency relief policies despite the fact that the area was particularly vulnerable for mudslides, thus exposing the residents to “mortal risk”.

The *Budayeva* decision in the ECtHR crystallizes the state's responsibility for preventing, and warning of, repeated natural disasters both in substance (lack of maintaining protective defense infrastructure and lack of warning to evacuate) and in procedure (lack of investigating criminal conduct). It has relevance to climate-change victimization, because of the repeated character of the failures to mitigate the risk, to give warning, and to facilitate eventual evacuation. It demonstrates how failure to respect the right to life can combine with failure to respect the right to information.

Climate-change victimization can be linked not only to violations of civil and political rights, but also to violations of social and economic rights. In fact victims can probably refer to this category of rights more often, because they require more positive and preventative obligations by governments to avoid climate-change victimization. A human rights-based approach should be central both to governments' efforts to reduce or avoid negative effects of climate change—for example a carbon tax and other regulations against polluters—but also to governments' climate-adaptation policies, where the implementation of positive obligations can strengthen and sustain human security. The whole body of social and economic rights can, in fact, be seen as a relevant factor to build resilience and adapt to climate change challenges.

Differentiation between climate-change victims and climate-change migrants

Climate-change victims are not necessarily those who migrate as a result of changed climatic conditions. During Hurricane Katrina in New Orleans the victims were mostly those who stayed, not those who evacuated. The academic literature and the attention of international organizations to date has focused extensively on “climate change refugees” (Couldrey and Herson 2008; Sacks 2007), creating an overall impression that the victims are people at risk of displacement. We question this usage of the term “climate change refugee” and argue that climate-change victims are in fact more often “stayers”. In fact voluntary displacement, properly regulated and compensated, could be a major instrument for climate change adaptation or a potent de-victimizing factor.

The discipline of refugees studies—much faster than victimology—has engaged actively in research on the links between climate change and displacement. This explains the prevailing focus of research examining climate change refugees (Dun and Gemenne 2008; IOM 2007), the range

³ *Guerra and others versus Italy* (1998) 26 EHRR 357.

⁴ *Oneryildiz versus Turkey* (2005) 41 EHRR 20 at 56.

⁵ *Budayeva and others versus Russia*, Appl. No. 15339/02, 21166/02, 20058/02, 11673/02.

of social constructions of victimhood, legally defined by international instruments (Dussich and Mundy 2009; UNHCR 2006) or enshrined in national constitutions (Morosawa 1998), and more objective social identity constructs (Warner 2010; McNamara and Gibson 2009).

Climate-change victimhood could be portrayed by use of the equation:

Population (total impact) = *Stayers* (resilient and non-resilient) + *Displaced* (external and internal) + *Deceased*

Population in total is affected by climate change through increased frequency of EWEs, disproportion of water and other resources, etc.

Stayers could be:

1. a resilient majority that experience stress, but can get on with their lives with minimal adaptation assistance; and
2. a non-resilient minority suffering long-term effects. This second group we see as having major potential to be climate-change victims.

Displaced, like the stayers, could be generally resilient, but there could also be a vulnerable minority. We do not see the whole group as climate-change victims, in contrast with other studies that address only this group, and in its totality, as victimhood.

Deceased are the victims who did not survive; this group is part of research to understand the causes of deaths, and the disproportionality and gaps in the relief efforts.

Globally, the number of migrants, including climate-change migrants, has increased. More people are changing their country of residence, enabled by globalization and the modern communications. Looking for better jobs or better living conditions is natural for every human being. Consequently, the migration is likely to increase in the future (de Haas et al. 2011; Renaud et al. 2007; Warner 2007). People will continue to move, however, but many may not declare themselves to be “migrants”, because the word embodies discrimination or has non-patriotic implications. Also the boundary between forced and unforced migration might be problematic—people usually move because of potential social, political, economic, or environmental stress, but at what degree of such stress does one cross the line from voluntary to involuntary migration? People move when they find better jobs in other countries, and often this is half-voluntary/half-involuntary: many would have loved to stay, work, live, and die close to their home town, but economic stress make people move. In this sense the economic migration could be similar to the climate migration—if someone re-settles from a place with a warmer climate to a place with a colder climate, or vice versa, this would be climate-driven migration *par excellence*, although it would have not much to do with victimization.

To predict that climate change may produce 50 million migrants by 2020 or 200 million migrants by 2050 may help to raise awareness and alarm governments to pay more attention to climate change. Gwynne Dyer’s “Climate Wars” (2008) is such an alarm bell, but insufficiently substantiated with empirical evidence. Global warming has been happening for the last 30 years, but the number of armed conflicts has declined in the last 30 years. There is nothing apocalyptic, if decisions to migrate—even on the scale of millions—are made well in advance with well-informed options. Certainly dangers to coastal areas threatened by sea-level rise can be anticipated decades in advance and people can decide whether to migrate or adapt. Research, for example Couldrey and Herson (2008), that determines approximate numbers of future climate change refugees, where they will come from, where they will go, and even how much money they will need, remains hypothetical and does not result in policy planning—maybe a similar proportion of the world’s population has already migrated in the last 30 years for economic or environmental reasons, without much of a noticeable tragedy. Therefore we would like to detach ourselves from the concept of migration and envisage a broader victimhood of people, affected negatively by climate change.

We question the standard yet problematic theoretical and empirical common view of climate migration, and the ongoing alarmist versus skeptical debate (Dun and Gemenne 2008) is of little relevance to our argument. Instead we propose with our definition to address the needs of those people who have been, or are likely to be, severely affected by climate change while at the same time having inadequate human, social, and economic capital for adaptation. Certainly, non-resilient people displaced as a result of climate change could be regarded as one group of the category climate-change victims that has already attracted attention (Warner 2010).

Similarly, not all “stayers” should be regarded as victimized or victims—there is a resilient majority or “climate change survivors”, to use terminology similar to that used in the aftermath of single-event trauma (Kayetsi-Blewitt 2006). The environmental threats we listed earlier give us a picture of what factors can make some people more vulnerable than others to climate change. Although it is assumed that people who are victimized by poverty, under-resourced environment, lack of access to technology and education, human rights violations, or political conflicts are those who will face the most extreme stress from climate change, it is necessary to distinguish the categories of victims and specify groups that will be most exposed to the threats described above. To state that victims of climate change are the same as victims of poverty is too simplistic. Similarly, it is simplistic to argue that finding solutions to

the problems of poverty automatically solves the problems of climate change.

Climate-change victim as legal or policy-advocating category

The category of climate-change victim is different from the traditional concepts of victimhood manifested as:

1. victimhood as a result of perpetration of crimes or human rights violations; and
2. victimhood as a result of natural disasters.

The first category has clear perpetrators—individuals or groups who inflict damage on other individuals and groups and can, therefore, be held responsible for their actions. The second category, while encompassing violations of secure behavioral space, does not enable guilt to be apportioned to a particular individual or group, but still requires preventive measures, early warning signals, and appropriate responses to be taken by governments or agencies to reduce the damage.

The category of climate-change victim is intriguing because the perpetrators' actions—indulgent lifestyles, greedy capitalism, over-consumption—leading to global warming and environmental damages are human, but individually indirect; they occur over many years, and, as such, to label them as criminal acts is legally problematic. While victims can blame governments and businesses for not acting with due care of the environment over decades, it would be difficult to establish intentional crimes in a legal process within the regular criminal justice system. Attempts to criminalize climate change responsibility might not be feasible and attainable in courts, but environmental pollution, industrial waste disposal, or natural resources mismanagement could be.

Climate-change victimization in terms of causality is human-induced, and therefore different from natural disaster victimhood, caused by natural forces. But statutory criminalization of both victimizations faces difficulties, as also do assigning individual accountability, prosecution, and applying sanctions. Therefore we regard climate-change victims not as victims of “crimes” but as victims of violations, where policies of prevention, mitigation, and adaptation are necessary. There have been voices demanding individual accountability and international criminal prosecution. Dr James Hansen, addressing the US Congress on 24 June 2008, demanded that “CEOs of fossil energy companies know what they are doing and are aware of long-term consequences of continued business as usual ... these CEOs should be tried for high crimes against humanity” (<http://climateandcapitalism.com/?p=471>). Polly Higgins received acclaim and awards from environmental campaigners when she introduced the idea of

“ecocide” as a fifth “crime against peace” to be added in the jurisdiction of the International Criminal Court (Higgins 2010), but criminal lawyers reacted with a skeptical smile arguing that there are not “four crimes against peace” in the jurisdiction of the ICC, there is only one crime against peace, defined as such at Nuremburg, and called the “crime of aggression”, which also includes genocide, war crimes, and crimes against humanity. Ecocide, as terrible as it could be, has little in common with genocide—a mass and systematically planned extermination of millions—and it would belittle the victims of genocide if they were to be compared with victims of ecological pollution.

We see the category of climate-change victims as a policy-advocating, rather than a legal one, demanding criminal accountability, therefore we would focus not on “crimes”, but rather on groups of existing or potential victims of climate change with their existing fears and insecurity. Also, comparison with victims of crime and with victims of natural disasters may provide new and interesting perspectives on the concept of victimhood—one hypothesis would be that climate-change victims would be those fearing less for their life or survival; their fears are, instead, more connected with losing homes, properties, jobs, etc. It might be the case that more people—millions—would be affected and victimized by climate change, but the scale of suffering and life-threatening circumstances could be less than with victimization from crimes and natural disasters.

The purpose of such policy-advocating emphasis of the category climate-change victims would be to attract the attention of policy makers rather than to open legal debates, establish guilt, and bring prosecutions.

Challenges for future research

The first challenge is that victims of climate change might be those that neither the natural sciences nor the social sciences and humanities, through their disparate methodologies, might describe as victims. It would be interesting to explore the difference between how people who experience denial of their human rights and opportunities perceive themselves and how the scholars would define them as “victims”. The concept of human security also struggles with a similar duality of exploring how people see themselves—what are their fears and what makes them insecure—from the tendency to label particular groups as insecure on the basis of scientific assessment.

Climate-change victimhood as a social construct has been primarily a top-down perspective dependent on collective description of quality of life factors of the population, and has been less inquiring at the micro level of analysis (IFPRI 2009). There is extensive research on the

increased risks (viz. physical, psychological, social, financial) to people of climate change in terms of water and food stress, temperature-initiated physical and mental diseases, injury and fatalities because of catastrophic weather events, for example unusually intense and frequent cyclones, hurricanes, and floods, and population displacement. But there is also a need to combine this science with human (in) security inquiries among vulnerable groups and assess how they perceive the threats. Initial analysis of the datasets in the climate threats reveals that they do not adequately record suffering at the individual level. Top-down perspectives often reflect the institutionalized and potential suppressive mechanisms of the State apparatus that depend on international legal formulations guaranteeing these apparent freedoms constituting human rights—for example, the right to water, to food, etc. But, equally, climate-change victimhood can claim personal identity—“*I am a victim of changed climate conditions*” as a *bottom-up* statement that exists independently of normative or institutional structure. Climate-change victimhood derives from relative inter and intra-individual fragility when confronted by environmental trauma, and the relative individual lack of power to influence the behavior of others perceived to be, or actually, responsible for that victimization. The people most vulnerable, both physically and socially—children—may lose on both counts, and this is exactly where the effort should go to avoid secondary, or tertiary victimization (Terranova et al. 2009). It would be of more than academic interest to locate climate-change victims in a joint theoretical and empirical framework with other vulnerable groups—for example children—and, indeed, elaborate on stress linkages, psychological and sociological factors, and resilience (Acierno et al. 2009).

One interesting solution to the top-down versus bottom-up dilemma would be to cross-utilize the two approaches:

1. to take the climate factors that could jeopardize the safety and security of certain groups of people—for example changes in the temperature, rise of acidity, sea level rise, etc.—and inquire directly of vulnerable groups of people which of these make them insecure; and
2. to separate climate-related threats from those people perceive.

Both methods, we would like to argue, could be used in parallel; natural scientists and social scientists can discuss their findings and learn from each other.

Another challenge is the scale and gravity of the experienced victimhood—climate change remains a distant and abstract threat for most people, because of another critical factor—timing. There are imminent human threats, for example losing our loved ones, and non-imminent human threats but with long-term disastrous potential. Climate

change is in the second category but it needs early and no less urgent attention. And certainly a challenge would be to deliberate what can be done to prevent climate victimhood and to respond to victimizations, exactly because the timing might be pressing for attention to emergencies but not so pressing for disasters that are unmeasurable and distant in the future. But there is a light at the end of the tunnel and good practice already where crisis response and emergency capacities can be prepared, when sound scientific research is combined with good-governance measures. One possible means of facing this challenge would be to use survey methodology to measure the scale of victimization (quantify and qualify blocked potentials) resulting from government action or inaction. Good governance, freedom, peacefulness, or transparency indexes might be supplemented with indexes of governmental care and responsibility for climate victims, and measurement of correlates of that victimization—gender, age, localization, resources, traditions, and lifestyle. This methodology would clarify the short and long-term effects of environmental assaults and verify whether these effects match the average pattern of trauma reported in the victimology research literature.

Conclusion

As emphasized in the introduction our objectives are to offer a definition of climate-change victims and to locate this category among other existing categories of victimhood. We looked at types of climate change threats and deliberated on possible victimization of groups of people facing those threats.

We distinguished between the categories of climate-change victims and climate-change migrants, arguing that the two are not the same and, in fact, migration could be a major opportunity for adaptation to climate change and could be regarded as one example of how to reduce stress in a climate-constrained world. We distinguished between climate-change victims and natural disaster victims, the first category referring to gradual repeated exposure to negative effects caused by climate change whereas the second category refers to victimization as a result of one hazardous event caused by natural disaster without clear human-induced causality. The first category is new, relevant to the new era of human-induced climate change, recently elaborated; whereas the second is millennia old.

The central purpose of the article was to offer a three-tiered definition of climate-change victims utilizing the concept of *safe operating space*, but re-formulating it into *secure behavioral space*. We undertook an initial categorization of the climate-change victims, using Maslow's concept of gradual needs and resilience of people. We

would like to explore further how people can be made resilient to climate change as a major effort to avoid victimization, and we welcome critical assessments and opinions.

As stated, we are far from suggesting that this is *the final word*. In essence, this is a pioneering *first word* and the beginning of a long-term project in which we would like to see all suggested differentiations and arguments debated and further elaborated.

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