UNIVERSIDADE ESTADUAL DE CAMPINAS
INSTITUTO DE FILOSOFIA E CIÊNCIAS HUMANAS

MARCELA DA SILVEIRA FEITAL BENEDETTI

CLIMATE CHANGE AND HUMAN DISPLACEMENT: A SOCIOLOGICAL CONTRIBUTION TO UNDERSTAND TRANSITIONAL SOCIETIES

MUDANÇAS CLIMÁTICAS E DESLOCAMENTO HUMANO: UMA CONTRIBUIÇÃO SOCIOLÓGICA PARA ENTENDER SOCIEDADES EM TRANSIÇÃO

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Supervisor: Lúcia da Costa Ferreira

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ABSTRACT

Human migration has been part of world history in multiple ways and it has been connected to several reasons: wars, colonial expeditions, prolonged violent conflicts, religious persecution, political or economic crisis and environmental disasters. Recently we have to cope with a contemporary phenomenon of human displacement regarding to climate change impacts. This problematic also poses some challenges about the future of some groups, communities, towns, and nations, which imply negotiating process in different levels. Thus, this research questions what are the elements that influence this liminal condition of these social groups already considered potential climate displaced people? Clearly, part of this problem has to do with economic conditions, political power, and infrastructure to support replacement. However, the aim of this research is to cope with a broader question, looking beyond the economic reductionism responses: how is climate change knowledge and global categories such as environmental and climate displaced people considered usable and meaningful for the social groups facing the decision-making about their own future? Besides, this research is also discussing how this new pattern of climate devastating events increasingly frequent and intense is influencing the way people have been interacting and stablishing social relations. Considering that, the research argues that the new challenges posed by climate change and human displacement has been teaching us about our societies. This research is based on a literature review; a bibliometric analysis of scientific production; a content analysis of local and international media material and some scientific reports; a conceptual-analytical framework of arena; and on a fieldwork with participatory observation and semi-structured interviews in Shishmaref – Alaska (the United States of America), a native community which voted to be relocated due to sea level rise impacts in 2002, and was not resettled yet. This place was chosen as an exemplary case due to its historical importance on discussion about the nexus of climate change-culture-migration. Shishmaref proves that biophysical impacts of climate change are intertwined with culture and global knowledge narratives in the definition of their vulnerability and their liminal condition.

Key words: climate change, human displacement, migration, arena

RESUMO

Migração humana tem feito parte da história do mundo de várias maneiras com várias razões: guerras, expedições coloniais, conflitos violentos prolongados, perseguição religiosa, crise política ou econômica e desastres ambientais. Recentemente, temos que lidar com um fenômeno contemporâneo de deslocamento humano em relação aos impactos das mudanças climáticas. Essa problemática também coloca alguns desafios sobre o futuro de alguns grupos, comunidades, cidades e nações, o que implica um processo de negociação em diferentes níveis. Assim, esta pesquisa questiona quais são os elementos que influenciam essa condição liminar desses grupos sociais já considerados potenciais deslocados climáticos. Claramente, parte desse problema tem a ver com condições econômicas, poder político e infraestrutura para apoiar a realocação. No entanto, o objetivo desta pesquisa é lidar com uma questão mais ampla, olhando para além das respostas do reducionismo econômico: como o conhecimento sobre mudanças climáticas e categorias globais como migrantes ambientais ou migrantes climáticos são considerados úteis e significativos para os grupos sociais que enfrentam a tomada de decisão sobre o seu próprio futuro? Além disso, esta pesquisa também está discutindo como esse novo padrão de eventos climáticos devastadores, cada vez mais frequentes e intensos, está influenciando a forma como as pessoas vêm interagindo e estabelecendo relações sociais. Considerando isso, a pesquisa argumenta que os novos desafios colocados pelas mudanças climáticas e pelo deslocamento humano têm nos ensinado diferentes aspectos sobre nossas sociedades. Esta pesquisa é baseada em uma revisão de literatura; uma análise bibliométrica da produção científica; uma análise de conteúdo de material de mídia local e internacional e alguns relatórios científicos; uma estrutura conceitual-analítica de arena; e em um trabalho de campo com observação participativa e entrevistas semi-estruturadas em Shishmaref - Alasca (Estados Unidos da América), uma comunidade nativa que votou a ser realocada devido aos impactos do aumento relativo do nível do mar em 2002, e ainda não foi reassentada. Este lugar foi escolhido como um caso exemplar devido à sua importância histórica na discussão sobre o nexo das mudanças climáticas - cultura - migração. Shishmaref prova que os impactos biofísicos da mudança climática estão interligados com as narrativas da cultura e do conhecimento global na definição de sua vulnerabilidade e sua condição liminar.

Palavras-chave: mudanças climáticas, deslocamento humano, migração, arena

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COP 21: United Nations Climate Change Negotiations in 2015

EPA: Environment Protection Agency

ICC: Inuit Circumpolar Circle

IPCC: Intergovernmental Panel on Climate Change

OCV: Our Climate Voices

SERC: Shishmaref Erosion Relocation Coalition

SLEDP: Shishmaref Local Economic Development Plan

SSMP: Shishmaref Strategic Management Plan

USGAO: The United States Government Accountability Office

SUMMARY

INTRODUCTION

Wars, colonial expeditions, long-lasting violent conflicts, religious persecution, political or economic crisis and environmental disasters have shaped the movement of millions of people all over the globe. So why should we pay attention to those human displacements related to climate change? Because the former scenarios of human displacement allow for the imagery of coming back *home*, to the place of origin. However, climate change establishes a scenario of uninhabitable places forcing people to move with no perspectives of returning (Sassen 2016).

According to some global climate change reports, there is no accurate measure of displaced persons crisis extent related to climate change impacts. The Intergovernmental Panel on Climate Change (IPCC) states that by 2050 around 150 million people are going to be threatened by being displaced persons (IPCC, WGII, 1990). Rising temperatures are just one of the main biophysical consequences of climate change, which also include drought, desertification, salinization of ground water and soil, rising sea level. These impacts can cause human displacement. In some cases, according to some scientists, journalists, and people in nongovernmental organizations, human displacement is considered as one of the most frequent and inevitable responses of some social groups to address climate change (Kolmannskog [ed.] 2008; IPCC 1990, 2014). Because of its potential for conflict between *displaced* people and *hosts*, climate change is considered one of the main threats to national and international security in recent times (Paulo Artaxo in an interview with Alves 2017). In addition to the links between climate change and violent conflict, the United States Department of Defense (DoD) has also published on climate and security for many years, considering the effects of a changing climate as a national security issue, related to military readiness, water and food stress, energy security and the like (DoD News 2015).

> Extensive climate changes may alter and threaten the living conditions of much of mankind. They may induce large-scale migration and lead to greater competition for the earth's resources. Such changes will place particularly heavy burdens on the world's most vulnerable countries. There may be increased danger of violent conflicts and wars, within and between states (Excerpted from the Nobel Committee's presentation in 2007 for A. Al Gore and the Intergovernmental Panel Climate Change [IPCC]).

Millions of people have already been displaced, particularly in Africa (IPCC 1990) in search for food, water, livelihood; that is, a place to survive. However, people who have already been gradually displaced had no legal framework to support them to deal with their cultural/ethnic differences, which can cause tensions when people migrate. (Kolmannskog 2009). Several examples (Figure 1) of potential human displacement caused by the new climate pattern of increasingly frequent and intense extreme events can be cited, evidencing that the latter are no longer future threats but rather realities experienced in daily lives of many people spread all over the world: a) flooding in Bangladesh and Pakistan; b) sea level rising and coast erosion from Pacific Islands, such as Kiribati, Tuvalu and Maldives, to native communities in rural Alaska and over the Arctic; c) drought and desertification in large areas such as Sahel, in Africa. None of these people have moved in a collective and organized way, considering cultural appropriateness, community cohesion[1]. The stress of displacement imposes a concern of losing a sense of belonging and identity connections with land, culture and people, as well as "ripping the fabric of their societies"[2].

1 A special case was the Carteret one, which the community started a process of moving, however the organization of resettlement was mainly developed and established by local actors with local resources, with no legal framework supporting them. This case deployed some logistic issues, and cultural tensions at the destination place. To understand more about Carteret case, watch *Sun Come Up.* Directed by J. Redfearn. Kanopy, 2015.

2 This expression was used by Susan Crate on *The Anthropologist*, a documentary about currently studies on the impact of climate change and human displacement. To watch: *The Anthropologist* . Directed by S. Kramer, S et al. Ironbound Films, 2016.

FIGURE 1: PICTURES OF DIFFERENT REALITIES FACING CLIMATE CHANGE IMPACTS

Source: 1) Kiribati facing sea level rising (Jazbec 2011); 2) desertification in Sahel, Africa (Gauthier 2012); 3) flooding in Pakistan (AFP 2014); 4) Ilha Comprida in South coast of São Paulo, Brazil (Santos 2015); 5) a house affected by coastal erosion in Shishmaref in 2006 (Gabriel Bouys in Shepard, 2014); 6) Shishmaref coastline in 2017 (author's collection, took in August 2017).

These cases bring up an interesting puzzle. Emerging evidence (EJF 2012; Randall et. al. 2013) indicates that several communities, identified by news articles and part of scientific debates as potential *environmental* or *climate refugees*, facing climate change impacts and their likely tragic outcomes daily, are not able to move and thus continue to live in increasingly risky

places. Therefore, two main questions were raised: first, what are the elements that influence this liminal condition of these communities already considered potential climate displaced people? Clearly, part of this problem relates to economic conditions, political power, and infrastructure to support replacement. However, the aim of this research is to cope with a broader question: how is climate change knowledge and global categories such as environmental and climate displaced people considered usable and meaningful for the social groups facing the decision-making about their own future? Could that situation be a result or manifestation of a mismatch between the global production of knowledge and categories about human displacement and climate change *versus* the local realities and necessity of grounded effective policies?

The initial research assumption considered that broadly narratives used by part of media articles and supported by a significant part of scientific outcomes, such as the *refugeeism* narratives, would be adopted by local actors as part of their strategies to overcome the lack of action that keep them in the liminal condition of not moving and living in risky places. However, this was not what had been found in empirical research. Thus, the first research goal of analyzing global categories produced, based on global environmental knowledge regarding climate change and human displacement, is faced as an opportunity to assess the implications of globalized knowledge in local level action and in effective environmental policies.

On the other hand, another background question is important here. This research also considers that the new challenges posed by climate change teach us about our societies. It is critical to understand how climate could transform social relations. As it is considered as a major future crisis for the next years (Myers 1993, 1997; Jacobson 1988; Westing 1992; Bates 2002), we must pay attention to how it is influencing our way to live in societies likely to face climate change impacts no matter where you live – developed or developing countries, coastal or rural regions. It is not simple to tell how climate change will ultimately affect us, or if its impacts will be as powerful and transformative of cultures as colonizers and missionaries, as also questioned by Lynge cited by Callison (2014). But it is important to think about how this new pattern of climate devastating events increasingly frequent and intense is influencing the way people have been interacting and establishing social relations.

To address these two background questions, this research adopted a relational theoretical-methodological approach (Feital 2016; Ferreira 2005; Giddens 2009), which does not prioritize the structures (e.g. political, economic, cultural, social) to the detriment of social action or *vice versa*. For this approach, no pole is sovereign to the other. There is dialectics

between the two poles, a mutual conditioning between "agency" and "structure" or "system" (Domingues 2008; Giddens and Pierson 2000). The interaction between individuals and collectivities, especially on the symbolic plane, is responsible for the production and reproduction of social life. Not only the action, nor the structure alone. This analytical movement aimed to overcome the theoretical fragmentation of functionalist and interactionist individuals, in an attempt to overcome the polarization Action X Structure (Domingues 2008). Thus, the dichotomies imposed between individual / society are questioned, because one believes in the relational character of both poles, not emphasizing one to the detriment of the other. Paying attention to these both sides, that appear now as determinants now as determinate, this approach allows us to be attentive to the action of social actors involved in this transitional condition, but also to the structures which configure these actions.

Regarding the research problem and the sociological approach mentioned above, a combination of perspectives on arena framework seemed to be adequate. A dialogue has been established between American Sociology and European Proceduralist Sociology, which put mainly the perspectives of collective action and institutional analysis of Ostrom and collaborators (1999, 2005; McGinnis 2011; Ruiz-Ballesteros and Brondízio 2013), and the theory of resource mobilization of Renn (1992 2008) and Hannigan (1995). Considering arena as a conceptual-analytical framework, it has been a useful tool that allows the decomposition and analysis of decision-making processes (McGinnis 2011; Ostrom 2011; Caldenhof 2013), identifying the multiple levels of action and the fundamental elements that make up this decision-making process: multiple actors, with diverse worldviews, expectations, action strategies and power of influence. This approach will be attentive to the actions of social actors in transition, but also to the structures (social, political, economic and cultural) that conform these actions. In addition, it is an approach that values the historical trajectory of the object of study, the interdisciplinary dialogue and the voices of the different actors inserted in the researched context.

Thereby, this sociological approach has been important to answer the questions suggested here. More specifically, it has helped to analyze to which extent the global knowledge of climate change and the global narratives and categories of *environmental* or *climate refugees* are mobilized by the grounded actors, reflecting (or not) their local realities. That is, it has been mindful to explore how climate change narratives affect populations identified as likely victims of climate change impacts; how these narratives are mobilized (or not) by grounded actors as a

meaningful resource and part of their action strategy to influence policy-making related to whether and how to move and be resettled.

Besides being attentive to the grounded actions about this issue, this sociological approach enables the research to connect it to a broader process of knowledge, narratives and categories production. Hence, an interesting research question arose based on studies of social science scholarship about the generation and use of global environmental knowledge (Turnhout et al 2016; Callison 2014): to which extent does global knowledge and global category production help to attend to local demands through policy-making? What are the implications of thinking about global categories and narratives that could be considered abstract, generalized and detached from local realities, which are so peculiar and urgent? Would these concepts and narrative resources influence the way people have been interacting in societies?

Environmental and Climate Refugees

Some U.N. agencies, development NGOs, national governments, security pundits and popular media have used hyperbolic rhetorical terms, like the category of refugee, to describe how people are forced to move due to climate change impacts (Hartman 2010). This rhetoric is used by some advocates for sustainability, using *refugeeism* to call attention for environmental degradation issues (Black 2001). It is also broadly used as a symbol of global crisis and tragedy, intending to discuss and approve more rigid immigration controls (Hartman 2010). The sensationalism of the term 'climate refugees' is too easily answered by reactionary policies preventing movement without genuine concern for the welfare of populations involved (Warner et al. 2009). As a resource, the narrative of environmental or climate refugees has been mobilized by different actors with different purposes, putting some light on the issue of forced movements due to climate change. However, this is not the light that the local actors would advocate for.

Despite this effort to build a concept to translate realities all over the world, *environmental refugees* has been targeted of several criticism since it was coined in 1985 by El-Hinnawi (1985) due to its monocausal character, difficult to be proven empirically and likely to be simplistic and unilateral (Black 2001; Piguet 2008). The term *climate refugees* is also having great repercussions, as a deployment of the first concept which gained ground with the

importance of climate change impacts acting as a significant part of environmental global transformations.

Both ‘environmental refugee’ and ‘climate refugee’ are used to describe peoples that have been permanently or temporally displaced or are at risk of displacement associated with 1) environmental change, such as tsunamis, earthquakes, flooding, and the like; and 2) climate change in significant part, especially sea-level rise, extreme weather events, and drought and water scarcity (Farbotko and Lazrus 2012; Biermann and Boas 2010). But none of them attracts the legal protection applied to those designated as political refugees by the United Nations High Commissioner for Refugees (UNHCR 1951), which guarantee safeguarding for people fleeing their countries due to race, religion, membership, nationality, or political persecution. And having no legal bases of protection, these concepts are often considered as weak and meaningless (Callison 2014).

In line with some other authors (Hartman 2010; McNamara and Gibson 2009; Marino 2015; Fartboko and Lazrus 2012), this research points to the shortcomings of these concepts, studying their genealogy and analyzing the influences they have on the questions here suggested. However, developing a critical view on these terms does not mean that it is skeptical that the nexus migration-climate change is a real and important issue. Nor that the research will not consider imperatives to build a legal framework to deal with climate vulnerable populations. It is argued here that, based on data collected on fieldwork and literature review, *refugeeism* narratives do not offer sufficient conceptual or policy tools for equitable approaches to the issue of climate-related migration. That is, the narratives triggered with these concepts have not helped to achieve local demands or to focus on the mitigation of the root causes of the climate change problem. Perceptions among local communities´ realities are often strongly rejecting of the reductionism of climate refugee narratives. The prospect of migration coupled with a designation as refugee is perceived as denying the right to a subjectivity and voice as an equal citizen of the global climate arena deciding about their future. So, this research reflects about how do climate change narratives affect populations identified as likely victims of climate change?

Shishmaref: ***the first environmental refugees in America***

Stepping into a place that is part of world's imagination is a weird feeling. Visiting Alaska aroused that romantic notion of being in the last frontier of the world. When I arrived in Shishmaref (Figure 2) I could realize why it has been starring the main role as the *first environmental refugees in America*[3]: a barrier island in the Arctic with low infrastructure to cope with climate change issues; unique culture aspects (Figure 3), attracting little attention from decision makers. I was stepping on the ground of a native village I have been reading about on newspapers and scientific articles because it had already voted to be relocated due to the sea level rising and coastal erosion, both consequences of a warmer world.

3 As mentioned by Goldenberg, 2013, but often reproduced by other media articles, such as Mele and Victor (2016), Augustenborg (2016).

FIGURE 2: PANORAMIC VIEW FROM SHISHMAREF

Source: author's collection, pictures taken in August 2017.

Flying with a single-engine plane is a kind of scary experience, but I could see the island as I always will be for them: an outsider. As an outsider I arrived there still considering them vulnerable people, victims from the impacts of an unfair development process started far away from there. From many ways, this reality is true not just for Shishmaref, but also for many other similar cases all over the world. However, this narrative about them is much more complex – or would we say: complicated (Marino 2015)?

As an outsider, I had the impression I was entering into a tale where I could understand the metaphor of environmental refugees, having this people as a real representation of this idea. I thought that I would see local conflict between those who advocated for relocation and those who did not want to move. And among the ones demanding migration, I imagined I would see desperate people advocating for being relocated through the flag of environmental or climate refugees. In my mind, these categories would be resources and narratives used into the global

climate arena to make their voices louder and widen any influence into the results of the policy-making about their future. But local conflicts and desperation were two things I did not see. Although local conflicts exist, they are not aroused by climate change issues, because local people know the concerns about their reality and prospective. And environmental or climate refugees are two terms that I did not hear anytime. With this, after being there for some weeks, I could realize that my assumptions were not true, and that the problem was much deeper.

FIGURE 3: TRADITIONAL DANCE IN SHISHMAREF

Source: Adams, B. 2017.

Facing a calm and self-confident community, I took some time to understand that they are not passively sitting and waiting for someone to do something for them. The frequent sentence "we are waiting for the funds" to answer my question about why they are still there could give this impression. However, a time to digest the amount of information and experience we had in a fieldwork is the key point to understand it in depth. Not using the concepts adopted worldwide to describe them, and being on their lands waiting for external financial support is part of a political strategy typical of political subjects and not of passive victims of a vulnerable reality. They know what they want, and this is not just a safer place to live. And they also know

what they do not want. They do not want to be resettled elsewhere, if it is not in a meaningful place for their identity as a community. Exodus, diaspora, refuge is not in their vocabulary[4]. And it is not because they do not know about these concepts. They avoid using these words because they want to have control over their future decisions.

This research, along with some other authors (Marino 2015; McNamara and Gibson 2009), shows that using the narrative of *refugeeism* is not helpful. The shortcomings of this narrative have been greater than the benefits for social groups in local realities. Thus, it is increasingly important to analyze 1) how these social groups perceive and define themselves; 2) how these terms are understood by local actors, and how this view is similar or different from the dominant narratives about them into the global climate arena; and 3) what narratives the local actors use as part of their strategy to influence this decision arena about their own future.

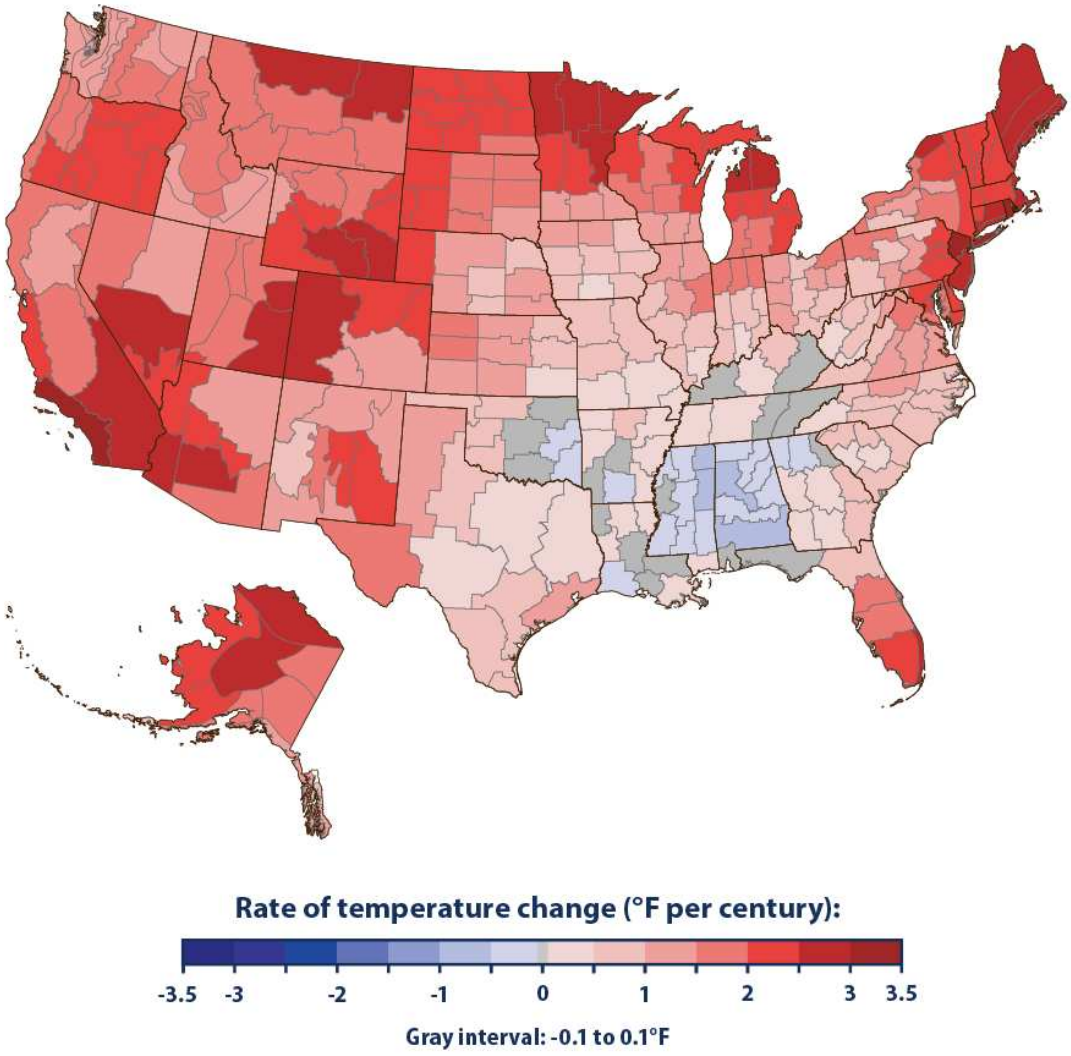
Intending to understand this strategy and how local actors face themselves and act into this decision-making, I chose this case because it differs from sudden environmental disasters such as hurricanes, tsunamis, and earthquakes, which also contributes to the issue of people's movement. Being a slow-onset case climate change impacts, Shishmaref was studied due to the temporality between the perception of climate change impacts and risks and the likely relocation. Thus, this choice enables the analyses of the decision-making being attentive to multiple actors, with diverse worldviews and interests, in different levels of action negotiating the condition and future of these social groups through the mobilization of global knowledge, categories and narratives.

As already published by the IPCC Special Report 1.5 (2018), with high confidence, human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate. However, these rates are not felt in the same way all over the world. Average temperatures are rising faster in Alaska than elsewhere in the US and over the world, according to the Environmental Protection Agency (EPA 2016) (Figure 4). In addition to narrowing the ice sheet of long areas, these

[4] This is in dialogue with the Callison's concept of *vernaculars*, (Callison 2014) which means the interpretative framework by which a term comes to gain meaning within a group and the work of translation such a term must undergo in order to integrate it into a group's worldview, ideals, goals, perceptions, and motivations to act. That is, how a group´s talk about climate change reveals their worldview.

changes have also shortened the time when the Chukchi sea is frozen, leaving the coast more exposed to storms and erosion. Since earlies 2000s data has been estimating that the island is losing between 2.7 and 8.9 feet of area per year on average and that this number can reach 22.6 feet in a year with the occurrence of major storms (US Army Corps of Engineers 2004).

FIGURE 4: RATE OF TEMPERATURE CHANGE IN THE UNITED STATES, 1901 - 2015



Fonte: NOAA, 2016. Esta figura mostra como as temperaturas médias anuais do ar mudaram em diferentes partes dos Estados Unidos desde o início do século 20 (desde 1901 para os 48 estados contíguos e 1925 para o Alasca). Os dados são mostrados para divisões climáticas, conforme definido pela *National Oceanic and Atmospheric Administration* (NOA).

Since 2002 Shishmaref, like other native Arctic communities (Kivalina, Newtok, and nine other native communities) has entered into a official decision making process which, facing the immediate impacts of temperature increases, has chosen to relocate its communities to other territories less susceptible to the impacts of climate change (Sheppard, 2014). The Government Accountability Office (US GAO) pointed out that more than 200 native communities are experiencing erosion and flooding related to climate change (US GAO, 2009).

Shishmaref was chosen due to its openness for receiving outsiders into their community, basing that decision on the importance that rural Alaska communities have for coping with climate change as an exemplary case: not in the strict sense of being a model, but in the sense of being a significant case to understand how different actors at different levels (communities, institutional agents, governments, international institutions) organize, interact and negotiate among them to deal with the impacts of climate change. As the following chapters are presented as scientific papers, the empirical research will be better described throughout the chapters, according to the relevance of each part of the thesis dissertation.

Global production of environmental knowledge, categories and narratives

Global production of environmental knowledge, assessments and categories has met a number of challenges in serving environmental governance (Turnhout et al 2015). Turnhout and colleagues point to the contemporary dilemma of assessing climate in a way that can be globally compared and aggregated, at the same time assuring that these assessments are locally relevant and meaningful. Scaling-up fragmented knowledge about specific localized places is an important step to transform it into new meanings, to convince broader stakeholders about the relevance of a grounded problem as a global problem (Turnhout et al, 2015). However, with the intention of influencing relevant policy-making for these grounded problems, this knowledge and categories globally spread are frequently detached and decontextualized. So, in line with other authors (Turnhout 2015; Callison 2014; McNamara 2007; Farbotko and Lazrus 2012), this research points that most forms of environmental knowledge are often not seen as very powerful in that more restrictive sense of whether policy makers listen to what scientists have to say (Callison 2014).

Turnhout and colleagues (2015) took the IPCC as one of the examples to illustrate the challenges of policy relevance of global knowledge. The main effort of the IPCC is to create an international consensus on climate science, including an understanding of how global temperatures have changed and how they are projected to change in the future. Setting a pattern of temperature change is a necessary great effort, although it is also delicate. The consequences of this pattern of temperature changing are differently felt over the world. So, global climate knowledge production is useful for understanding and convincing some policy-makers and general public about the relevance of this issue, approaching climate as a single, interconnected, physical system. However, not focusing on giving policy-makers more regionalized information could end up alienating local people and their diverse ways of knowing and living with climate change. Thus, scientific approaches which are not worried about local policy relevance reinforce three key problems: 1) it frames climate change as a distant and abstract threat; 2) it impedes integration of mitigation and adaptation; and 3) it fails to recognize the diversity of values and risk perceptions of people around the globe (Luers and Sklar 2013).

This reflection pushed the necessity of understanding global categories such as *environmental* or *climate refugees* as part of the environmental knowledge production. Relevant categories are not neutral acts of translation, but an intervention where knowledge not only represents, but at the same time also constitutes these categories as objects amenable for governance (Turnhout et al 2015). Its abstraction could help policy-makers and the majority of the general-public to understand and to start caring about climate change and the human displacement issue. That is, mobilizing global categories and global environmental knowledge by the local actors as part of their narratives could help them to be listened by others at the center of global climate arena, showing its connection with broader concerns. Yet, the same abstraction may also paralyze collective actions regarding local demands, where particularities are several and do not fit into global patterns of mitigation or adaptation. In other words, its potential for informing and catalyzing effective action on the ground may in fact be very limited due to an essential characteristic of objective science.

Thus, analyzing global narratives and categories, produced based on global environmental knowledge regarding climate change and human displacement, could raise the opportunity to rethink globalized knowledge and its implications in local level policies. Focusing on how grounded actors mobilize this global environmental knowledge may permit the research pointing to a grounded strategy to exercise power and make their voices louder in an urgent context of collective action.

Therefore, the argument here is that it is not enough to explain the reasons why several communities are still living in a liminal condition of potential refugees based on economic, political or infrastructure explanations. This problem is also a result of a broader narrative issue. Because of this, the research is attentive to which extent global knowledge and global categories production really help to attend local demands into the global climate arena. How helpful are these categories of environmental and climate refugees for local people, which are defined as vulnerable, as victims of an external force, as the representation of a global security threat and a frightening prospect? What are the implications of thinking about global categories and dominant narratives from outside, without listening to local actors living local realities? Would these concepts and discursive resources influence the way people have been interacting in societies, transforming our way to see and to establish social relations?

Methods and Fieldwork

Since its beginning, the research presented here was conducted based on the intention of undertaking empirical work. It was aware that due to logistics facts, it would be possible to do just one fieldwork. To broaden the accomplishments of the fieldwork it was essential to initiate the data collection through a content analysis of media articles and technical reports with online collection (Annex I). In the newspapers, the main terms considered in this first methodological step were *climate change, human displacement, environmental refugees, climate refugees, environmental migration; Alaska; Arctic;* and/or *Shishmaref.* This data collection was mainly made from September 2016 to May 2017, in local and international media material with online open-access, contributing to the organization of the fieldwork. The time limit was from 2002 (the first local voting process in Shishmaref deciding to relocate the community in adaptation of climate change) until nowadays. Despite the fact that it did not intend to be an extensive analysis, this methodological step was essential to draw the general lines of Shishmaref reality into international media, organize its history on a chronological way. Analyzing the media material was also important to identify key actors and institutions with an important role on climate global arena, from international to local levels, and also putting Shishmaref in debate with other local realities facing the same impacts and consequences.

Although the indispensable character of this content analysis, it was also problematic because it had a great influence on my interpretation about the problem of human displacement regarding to climate change. And it may be the reason why I built those hasty assumptions about meeting desperation and refugees advocates during my fieldwork. Even with this shortcoming, and just being noticed after a while, this analysis has also helped to realize the differences between local actors' narratives and those worldwide narratives of some scientists, journalists, media, governments and nongovernmental organizations.

The fieldwork lasted about four weeks in August 2017, and took place in Anchorage, the most populous city in Alaska and where some of the regional agencies are placed; and in Shishmaref and Nome, both in rural Alaska. The methods used were participant observation and semi-structured interviews with local actors in Shishmaref and with representatives of some regional agencies: 1) in Anchorage, interviews were conducted at Inuit Circumpolar Circle (ICC-Alaska), which is non-profit organization representing Inuit people across the Arctic parts of Alaska, Canada, Russia and Greenland, strengthen unity and rights among Inuit on issues of common concern; 2) in Nome, at Kawerak, regional non-profit corporation which main goal is to assist Alaska Native people and their governing bodies to take control of their future, providing services throughout the Bering Straits Region, ranging from education to transportation, and natural resource management to economic development; 3) in Shishmaref, I interacted with multiple people with various roles in the community, from the mayor and vice mayor to elderly people, from representatives of the Native Village of Shishmaref and Climate Change coordinator to teachers, assistants and students at Shishmaref School. All of these interviews, totaling in 18 formal interviews were granted with the consent of the interviewees, and some were recorded in audio and some on field journal. A written interview was made with a representative of Denali Commission in July 2018 to complete some information. Denali Commission – an independent federal agency designed to provide critical utilities, infrastructure, and economic support throughout Alaska, which pushes the Congress to acknowledge the need for increased inter-agency cooperation focusing on Alaska's remote communities. As part of the fieldwork, the informal conversations were also important, totaling eleven people, which were recorded on field journal. The real names will not be used here to safeguard the actors' identities. They will just be mentioned when the actor's statements were gathered from secondary material from media or other academic articles.

Having the background and specific questions in mind, the analysis of these interviews, conversations and observations were coded to identify: 1) who are considered the key actors in

the different levels of climate global arena; 2) what the perceptions of local actors are about themselves; 3) what they think about their own future and about the world's fate; 4) which categories and narratives are used by them as part of their action strategy to influence this arena.

In Shishmaref, I interacted with multiple people with various roles in the community, from the mayor and vice mayor to elderly people, from representatives of the Native Village of Shishmaref to teachers and assistants at Shishmaref School. Although everyone was very nice to us, I tried to be as open as they permitted. As seen as an outsider, the informal conversations were taken specially with outsiders too: people who went there to be teachers or school employees, some ended up getting married with natives – but they are still considered outsiders no matter how long they are there, and some are living an adventure or a job opportunity which may be finished when the school year finishes. Native persons are kind of *tired*[5] of having no answers and receiving researchers, journalists to talk about them – and sometimes without listening to them. So, it took some time to develop trust relations with natives, but every single talk worths the effort of being there.

Intending to start the analysis of fieldwork data, I found a second institutional home at the *Workshop in Political Theory and Policy Analysis of Eleanor and Vincent Ostrom* (Ostrom Workshop) at Indiana University, in Bloomington (Indiana). Before coming back to Brazil, I spent two months working under the supervision of Professor Jessica O'Reilly (from the Hamilton Lugar School of Global and International Studies) and Professor Eduardo Brondízio (from Anthropology Department and Center for the Analysis of Social-Ecological Landscapes – CASEL). The exchange and contributions to consolidate my research questions and structure were not just with the professors, but they were also part of the interaction with a diverse and interdisciplinary group of PhD students and staff from Ostrom Workshop, CASEL and Jessica's undergraduate and graduate students.

To complement my fieldwork data and to strengthen research's argumentation, a comprehensive and systematic bibliographical research was made in two levels: bibliometric and content analysis with key terms concerned with human displacement due to climate change impacts, such as "environmental migration"; "environmental refugees"; "climate migration"; "climate refugees", "human displacement" and "climate change". This step was accomplished in the Thomson-Reuter Web of Science database, analyzing the extensive literature in the area of Social Sciences, evaluating how scientific production has been defining people considered

5 Expression used by an interviewee when he talks about the voting process of relocation.

potential displaced due to climate change since the first definition of environmental refugees in 1985 (El-Hinnawi 1985). Besides that, an analysis of key terms throughout IPCC reports was also developed in order to complement this literature review, considering the three Working Groups publications and the policymakers reports since the first Assessment Report published in 1990 until the fifth, published in 2014. Due to the relevance of these reports for policy actions towards environmental governance, this analysis was important to identify how this international environmental organization composed by renowned scientists deals with the climate consequences on human displacement over time.

All of these codifications and methodological steps briefly described here will be well developed throughout the chapters of this dissertation, highlighting their contributions for each research question.

Overview of the dissertation

This sociological research analyzes the reasons why several communities, identified as potential environmental or climate displaced people, facing climate change impacts and their likely tragic outcomes daily, are not able to move and thus continue living in risky places. As it is argued through the introduction, this is part of broaden problematization, which summarizing answers to political and economic elements is not enough. Each of the following chapters is in the form of scientific paper presenting and developing specific questions paramount to this research. The methods and the empirical research will be deployed throughout the chapters according to their relevance.

In Chapter 1 the literature review will be depicted, paying attention to how global scientific production has been defining people considered potential displaced due to climate change throughout the years, highlighting the development of narratives and the different uses of them among actors in global climate arena. This chapter helps to put Shishmaref in dialogue with other similar cases worldwide. Besides, it identifies a forthcoming narrative to describe likely displaced peoples not as the fragile idea of refugees, or the frightening prospect of security threat, but as political subjects who have global demands to be accomplished by an international community.

In Chapter 2 lays an important research contribution: analyzing this puzzle through the methodological-conceptual framework of arena, which will be deployed based on a sociological relational approach. The question about how global knowledge and global categories production has been helping the actors to influence the decision-making process about human displacement and climate change is addressed here. To which extent global knowledge and global categories production really helps to attend local demands through policy-making? Which power relations are these narratives strengthening and which ones are they undermining? How do local groups understand these narratives and how do they build their strategy to influence the climate global arena of decisions about their own future?

Chapter 3 introduces the effort to think about what this reality of new challenges posed by climate change has been teaching us about our societies. The new climate pattern has been causing deep and fast transformations regarding ecosystems, culture habits and social behaviors and values. Thus, this chapter reflects on the scientific concepts and dominant narratives about the puzzle of climate change and human displacement influencing the way people have been interacting in societies, transforming our way to see and to establish social relations. As the environmental and climate refugee issue has been considered as a major future crisis, are we tending to transform the Anthropocene into an era of desperate and endless seeking for refuge? Or are we pointing to a new (but maybe old) society of responses to climate change challenges? Being attentive to these questions, the chapter tracks the interconnection between climate change and a web of other ongoing dynamics that shape society: physical impacts, historical process, cultural issues, power relations, and the like. The chapter points to the influence of power relations within the science production about climate change and human displacement into the global climate arena.

REFERENCES

ADAMS, B. 2017. I am Inuit. The Exhibit. Anchorage Museum. https://brianadams.photoshelter.com/portfolio/G0000RApRdq_Ee2c (available on 21.02.2019)

AFP. 2014. *Raging floods reach Multan villages*. https://www.dawn.com/news/1131740 (available in 02.12.2019)

ALVES, G. 2017. Temperatura no oceano está ligada a furacões. *Folha de São Paulo*. September 11th, 2017. Available on: http://www1.folha.uol.com.br/mundo/2017/09/1917365-temperatura-no-oceano-esta-ligada-a-furacoes.shtml (available on 10.17.17)

BATES, D. 2002. Environmental refugees? Classifying human migrations caused by environmental change. *Population And Environment*, ed. 5, vol. 23.

BIERMANN, F.; BOAS, I. 2010. Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees. *Global Environmental Politics*, ed. 1, vol. 10.

BLACK, R. 2001. Environmental Refugees: Myth or Reality?. *UNHCR* Working.

CALDENHOF, S. 2013.*Mudanças sociais, conflitos e instituições na Amazônia: os casos do Parque Nacional do Jaú e da Reserva Extrativista do Rio Unini*. Campinas, SP : [s. n.].

CALLISON, C. 2014. *How Climate Change Comes to Matter: the communal life of facts*. USA: Duke University Press.

DoD News. 2015. *DoD Releases Report on Security Implications of Climate Change.* https://dod.defense.gov/News/Article/Article/612710/ (available on 02.12.2019)

DOMINGUES, J. 2014. Teorias Sociológicas No Século. XX. Rio de Janeiro: Civilização Brasileira. 4ªed.

EL-HINNAWI, E. 1985. *Environmental Refugees*. United Nations Environmental Program, Nairobi.

ENVIRONMENTAL JUSTICE FOUNDATION. 2012. Securing Recognition, Protection And Assistance For Climate Refugees. https://ejfoundation.org/archive?film-filter=&report-filter=climate& (available on 17.10.17)

FARBOTKO, C. ; LAZRUS, H. The first climate refugees? Contesting global narratives of climate change in Tuvalu. *Global Environmental Change* 22 (2012) 382–390.

FEITAL, M. S. 2016. *Conflitos e arenas decisórias de grandes projetos de infraestrutura: uma discussão do Porto de São Sebastião – São Paulo – Brasil*. Jundiaí: Paco Editorial.

FERREIRA, L. 2005. Conflitos sociais e uso de recursos naturais: breves comentários sobre modelos teóricos e linhas de pesquisa. *Política e Sociedade*. Out. 2005. N.7.

GAUTHIER, J. 2012. *17 juin : Journée mondiale de lutte contre la desertification* https://www.devp.org/fr/blog/17-juin-journee-mondiale-de-lutte-contre-la-desertification (available on 02.12.2019)

GIDDENS, A. 2009. *A Constituição da Sociedade.* São Paulo: Martins Fontes.

GIDDENS, A.; PIERSON. C. 2000. *Conversas com Anthony Giddens: o sentido da modernidade*. Editora FGV: Rio de Janeiro.

HANNIGAN, J.A. 1995. *Environmental Sociology : a social constructionist perspective.* London and New York: Routledge.

HARTMANN, B. 2010. Rethinking Climate Refugees And Climate Conflict: Rhetoric, Reality And The Politics Of Policy Discourse. *Journal Of International Development*, ed. 2, vol. 22

IPCC. 1990. *Policymakers' summary of the potential impacts of climate change (*Report from Working Groupe II to IPCC) IPCC – Secretariat, Geneva.

http://www.ipcc.ch/publications_and_data/publications_ipcc_first_assessment_1990_wg2.shtml (available on 05/23/2017)

IPCC. 2018: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. In Press.

MCGINNIS, M. D. An Introduction to IAD and the Language of the Ostrom Workshop: A Simple Guide to a Complex Framework. *The Policy Studies Journal*, Vol. 39, No. 1, 2011

NOAA (National Oceanic and Atmospheric Administration). 2016. **National Centers for Environmental Information**. Accessed February 2016. www.ncei.noaa.gov. (acessado em 23/05/2017)

PIGUET, E. 2008. Climate change and forced migration. In: *New Issues in Refugee Research*. Research Paper No. 153. United Nations High Commissioner for Refugees.

OSTROM, E. 2005. *Understanding Institutional Diversity*. Princeton: Princeton University Press.

OSTROM, E. 1990. *Governing The Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

RENN, O. 1992. The social arena concept of risk debates. In: KRIMSKY, S., GOLDING, D. (eds.). *Social Theories of Risk*, Preger, Westport, CT, p. 170-197.

RENN, O. 2008. *Risk Governance. Coping with Uncertainty in a Complex World***.** London: Earthscan.

RUIZ-BALLESTEROS, e. e BRONDIZIO, E. Building Negotiated Agreement: The Emergence of Community-Based Tourism in Floreana (Galápagos Islands). In: *Human Organizatio***n**, Vol. 72, No. 4, 2013

SASSEN, S. 2016. *Expulsões: Brutalidade e complexidade na economia global*. Rio de Janeiro e São Paulo: Paz e Terra.

SHEPPARD, K. 2014. Climate Change Takes A Village – as the planet warms, a remote Alaskan town shows just how unprepared we are. *Huffington Post*. 14 de Dezembro de 2014. http://www.huffpostbrasil.com/entry/shishmaref-alaska-climate-change-relocation_n_6296516 (available on 23/05/2017)

The Nobel Peace Prize for 2007 to the Intergovernmental Panel on Climate Change (IPCC) and Albert Arnold (Al) Gore Jr. – Press Release. *Nobelprize.org.* Nobel Media AB 2014. Web

TURNHOUT, E.; DEWULF, A.; HULME, M. 2016. What does policy-relevant global environmental knowledge do? The cases of climate and biodiversity. *Current Opinion in Environmental Sustainability*. 18:65–72.

UNHCR. 1951. Convention and Protocol relating to the status of refugees https://www.unhcr.org/1951-refugee-convention.html (Available on 12.02.2019)

U.S. Army Corps of Engineers. 2004. **Alaska Baseline Erosion Assessment**. AVETA Report Summary – Shishmaref, Alaska.

United States Government Accountability Office (GAO). 2009. **Alaska Native Villages: Limited Progress Has Been Made on Relocating Villages Threatened by Flooding and Erosion.** http://www.gao.gov/products/GAO-09-551 (acessado em 23/05/2017)

WARNER, K., EHRHART, C., DE SHERBININ, A., ADAMO, S., CHAI-ONN, T., 2009. In Search of Shelter: Mapping the Effects of Climate Change on Human Migration and Displacement. *Care International*, CIESIN Columbia University, UNHCR, UNU-EHS, World Bank.

WESTING, A. 1992. Environmental refugees – a growing category of displaced persons. *Environmental Conservation*. Ed. 3, vol. 19.

CHAPTER 1
LITERATURE REVIEW

Abstract

Human migration has been part of world history in multiple ways. Recently we have to cope with a contemporary phenomenon of human displacement regarding to climate change impacts. Yet, attention to local perception and demands has been limited. This chapter assesses literature on human displacement related to climate change, evaluating the different narratives to define this issue over the years. Using the Thomas-Reuters Web of Science, this study bibliometrically assesses the overall literature on climate change and human displacement produced in the Social Science area since 1980s, the decade when the first definition was conceptualized to deal with this phenomenon. From this assessment, a relevant subsample was selected based on the most cited articles from each decade. This analysis revealed dynamism in the way the phenomenon has been constructed and understood by different actors in the global climate arena. Narratives vary from approaches considering potential displaced peoples as passive victims and security threats to the ones which consider this as an issue of political subjects. Although it is increasingly difficult, if not impossible, to categorize environmental migration neatly, I argue that these different narratives, or hybrids of these narratives, have real implications for the scope and the shape of policy options.

Key words: climate change; human displacement; literature review; refugee

INTRODUCTION

Human migration has been part of our history in the world in several different ways. Wars, colonialism expeditions, prolonged violent conflicts, religion persecution, political or economic crisis and global environmental changes have shaped the movement of millions of people all over the globe. More recently, we have been pushed to cope with a contemporary phenomenon of human displacement regarding to climate change impacts. In the 1980s it was the moment when the first effort to conceptualize this issue was made, and El Hinnawi's study (1985) is considered a watershed starting point of this effort with the definition of "environmental refugees". Since then, many research projects, scientific and civil society organizations (mainly International Non-Governmental Organizations – INGOs) reports and media articles have been dealing with the contemporary phenomenon of climate change impacting human migration throughout categories and narratives defined based on global environmental knowledge production.

Despite the great efforts and advances on conceptualizing this phenomenon, attention to local definitions, perceptions and demands have been limited. Thus, the question in this chapter is how global scientific production has been defining people considered potential displaced due to climate change, highlighting the development of narratives and the different uses of them among actors in global climate arena. The literature review depicted here identifies a forthcoming narrative describing likely displaced peoples not as the fragile idea of victims, or the frightening prospect of security threat, but as political subjects who have global demands to be accomplished by an international community. Despite the emergence of different approaches, this chapter shows that this new tendency is not widespread yet. In this sense, it is

argued that different narratives adopted by different social actors in a global climate arena have real implications for the scope and the shape of policy options – even the policy option of inaction about this issue.

Thus, this chapter presents an overview of the literature on human displacement related to climate change, evaluating the dynamism in the way this phenomenon has been constructed and understood over the years. Narratives vary from approaches considering potential displaced peoples 1) as passive victims, who should be waiting for external assistance to solve the problem, sidelining displaced people's agency and capacity to locally adapt to climate impacts; 2) as threats to national security, especially for the developed countries, seen as the hosts of "floods of refugees"[6], and all the conflicts and pressures they would bring together; 3) as adaptive agents, accepting migration as a positive response rather than as a failure to adapt, having problems to call attention to the need for mitigation and adaptation in-situ; to narratives considering displaced people 4) as political subjects, with agency and political power to challenge fundamental inequalities regarding global climate arena. Figure 1, adapting a table from Ransam-Cooper et al (2015), summarizes these narratives, defined by those authors, calling attention to the moment and actors in which they are most deployed and mobilized in arena.

[6] "Flood of refugees" is a commonly used term in some scientific material and media articles (check: Petters, A. 2017; Glorfeld, J. 2017).. However, in this research the author is aware of the problem about this term, which dehumanizes the people migrating. Thus, it is used just to refer to the terms adopted by some narratives.

TABLE 1: NARRATIVES AND ACTORS

Narratives **Type of actors**	**Victims** (external protection for those affected)	**Security threat** (sovereignty issue, border protection, conflicts between guests and hosts)	**Adaptive agents** (migration as an adaptive measure with positive aspects)	**Political subjects** (multi scalar and bottom up participation in policy decision-making)
Academia	Myers* Jacobson (1988) El Hinawi (1985)	Myers (1997, 2002)* Bierman and Boas (2010)	Mc Gregor (1994) Black (2001)* Warner°	McNamara e Gibson (2009) Marino (2015)* Farbotko and Lazrus (2012) Hartman (2010) Morrissey°
International environmental organizations	Friends of Earth Earth Policy Institute°	IPCC*	--	--
National or sub-national civil society organizations and political leaders	World Watch Institute* Fran Ulmer chair US Arctic Research Council (2013)	--	--	Shishmaref Erosion Relocation Coalition* Arctic Youth Ambassadors (DOI. 2015) Sheila Watt Cloutier (2015) Esau Sinnok – Arctic Youth Ambassador
Media	Time Magazine° The guardian (Goldernberg 2013, 2013b; Woolf 2016) United Press International (UPI) (2013; Price 2016) HuffPost (Sheppard 2014) The NY times (Melee and Victor 2016) CNN (Sutter 2017)	CBSNews° Exame (Wroughton 2016)	Huff Post (Kåre R. Aas et all 2015 and 2016)	Anchorage Daily News (James 2016)

Key:

1980s to present	1990s to present	2000s to present	2010s to present	Academia	Policy	Media

Source: adapted from Ransan-Cooper et al. (2015). This table provides an overview of the types of actors engaged in the four narratives concerning environmental and climate human displacement analyzed in this chapter. The table is color-coded by type of actor and decadal timeframe in which each frame notably emerged (1980s to Present; see also Key above). It is possible that some actors conceptualized environmental migration as relevant to one of the frames earlier than indicated; color-coding for timeframe is to signpost when frames distinctly and recognizably emerged. Where a type of actor is particularly active in relation to one of the frames, some representative examples (but not all available examples) have been provided. Where a type of actor is not notably active in relation to one of the frames, no example has been provided. The examples cited followed by an * is to signpost the ones that Ransan-Cooper et al. have also analyzed and cited. And those followed by ° are the ones which these authors cited but were not analyzed in this research. In this way, a clear picture of level of engagement by type of actor emerges (e.g. the majority of types of actors have pursued the victim framing, etc.). Relevant examples are comprehensively detailed in the body of the chapter.

The chapter is organized as follows: first, the methodology used to depict this research step is provided, showing a bibliometric overview of published research on human displacement and climate change impacts in the social sciences. Then the main ideas of each narrative identified and summarized on Figure 1 are presented. From this review, we offer a synthesis of the surveyed literature and discuss the dynamism in the way this phenomenon has been constructed and understood, revealing a forthcoming tendency to describe it. Concluding in concordance with McNamara (2007), we argue that the lack of policy development is an outcome of the ways in which debates have been articulated within institutions and the ways in which local actors have been constructed discursively. And part of it is that the narratives broadly adopted by the main actors into the global climate arena are not paying attention to the local understandings of the problem.

Methods and bibliometric analysis

Literature search, review and selection

The main focus on this literature review is on the Thomson-Reuters *Web of Science* database, which allowed us to bibliometrically assess and analyze the extensive literature concerned with human displacement due to climate change impacts. It showed the genealogy of this concern and the dynamism of the different narratives broadly used to discuss about this contemporary phenomenon. For the bibliographic search the topics used were: “climate change” and “environmental refuge* or “climate refuge*” or “environmental migra*” or “climate migra*” or “human displacement”. The first number of articles was 596. Then the Social Sciences research area was selected due to the dissertation objectives and in order to limit the results to the most relevant papers, excluding several studies about animals or plants movements regarding to climate change. And this sub-sample was 369 articles. We further separated this main set of articles into decades, defining the year of 1980 as the starter limit, because it was when the first effort of conceptualizing this issue was taken. Then, the five most cited articles considered directly relevant from each decade were selected for a content analysis (Table 2). This last step was attentive to how each article approached the issue of human displacement considering this phenomenon as a situation of victims to be protected, or as a

security threat to be solved, or if they take migration as an adaptive measure, or even if they assign some agency to the local actors as political subjects into a policy arena.

TABLE 2: THE MOST CITED ARTICLES

Year	Author	Title	Publication	Relevance	Narrative
1988	Jacobson, J.	Environmental Refugees – A Yardstick Of Habitability	Bulletin Of Science Technology & Society, Ed. 3, Vol. 8	DR	Victims
1988	Jacobson, J.	Environmental Refugees – A Yardstick Of Habitability	Futurist, Ed. 3, Vol. 23	DR	Victims
1996	Hugo, G.	Environmental Concerns And International Migration	Population And Environment, Ed. 1, Vol. 19	DR	Security threats
1997	Myers, N.	Environmental Refugees	Population And Environment, Ed. 1, Vol. 19	DR	Security threats
1995	Martin, P.; Lefebvre, M.	Malaria And Climate – Sensitivity of Malaria Potential Transmission to Climate	Ambio, Ed. 4, Vol. 24	IR	Security threats
1994	Mcgregor, J.	Climate-Change and Involuntary Migration – Implications for Food Security	Food Policy, Ed. 2, Vol. 19	DR	Adaptive agents
1992	Westing, A.	Environmental Refugees – A Growing Category Of Displaced Persons	Environmental Conservation, Ed. 3, Vol.19	DR	Victims
2002	Myers, N.	Environmental Refugees: a Growing Phenomenon of the 21st Century	Philosophical Transactions of The Royal Society Of London Series B-Biological Sciences, Ed. 1420, Vol. 357	DR	Security threats
2004	Henry, S.; Schoumaker,B.; Beauchemin, C.	The Impact of Rainfall on the First Out-Migration: a Multi-Level Event-History Analysis in Burkina Faso	Population and Environment, Ed. 5, Vol. 25	DR	Adaptive agents
2002	Bates, D.	Environmental Refugees? Classifying Human Migrations Caused by Environmental Change	Population and Environment, Ed. 5, Vol. 23	DR	Victims

2009	Gray, C.	Environment, Land, and Rural Out-Migration in the Southern Ecuadorian Andes	World Development, Ed. 2, Vol. 37	DR	Adaptive agents
2009	Mcnamara, K. E.; Gibson, C.	We Do Not Want to Leave Our Land': Pacific Ambassadors at the United Nations Resist the Category Of 'Climate Refugees'	Geoforum, Ed. 3, Vol. 40	DR	Political subjects
2010	Woodruff, D.	Biogeography And Conservation In Southeast Asia: How 2.7 Million Years Of Repeated Environmental Fluctuations Affect Today's Patterns And The Future Of The Remaining Refugial-Phase Biodiversity	Biodiversity And Conservation, Ed. 4, Vol. 19	IR	Threat
2010	Feng, S.; Krueger, A.; Oppenheimer, M.	Linkages among Climate Change, Crop Yields And Mexico-US Cross-Border Migration	Proceedings of the National Academy of Sciences of the United States of America, Ed. 32, Vol. 107	DR	Victims
2010	Biermann, F.; Boas, I.	Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees	Global Environmental Politics, Ed. 1, Vol. 10	DR	Security threats
2010	Hartmann, B.	Rethinking Climate Refugees and Climate Conflict: Rhetoric, Reality And The Politics Of Policy Discourse	Journal of International Development, Ed. 2, Vol. 22	DR	Political subjects
2012	Farbotko, C.; Lazrus, H.	The First Climate Refugees? Contesting Global Narratives of Climate Change in Tuvalu	Global Environmental Change-Human And Policy Dimensions, Ed. 2, Vol. 22	DR	Political subjects

Color Key:

1980s to present	1990s to present	2000s to present	2010s to present

Source: author's elaboration. This table provides an overview of the most cited articles per decade selected for the content analysis, showing which predominant narrative each one is more engaged in concerning environmental and climate human displacement analyzed in this chapter. The table is color-coded by type of decadal timeframe, and the years signalize the year of publication of the top cited articles. It is possible that some actors conceptualized environmental migration according to more than one narrative, but the main approach in the article was selected. The articles were considered Directly Relevant (DR), when it is discussing the concepts of environmental and climate migration; or Indirectly Relevant (IR), when the article approaches the issue, but not with a theoretical perspective; and Non-Relevant, when the paper was about biophysics aspects of climate change. When there was a Non-Relevant article among the five most cited, it was not considered for content analysis.

The author is aware that restricting the search to the Thomson-Reuter *Web of Science* limits the scope of the overview potentially ignoring research published in Latin countries, for instance, as well as reports and other publications relevant to the topic. The intention in using an international database of peer-reviewed articles is not to provide an exhaustive coverage of the literature, nor to present the analyzed data from this database as representing the whole scientific production. The intention, within a renowned database, which includes SciELO (a database which Latin countries have been publishing more), is to identify the most cited studies and the narratives used by them to assess the dynamism and the possible influence of scientific production on the way displaced peoples are defined and shaping the negotiations into global climate arena, identifying patterns in thematic areas and research gaps. However, in order to complement our review, we also performed a content analysis in the Intergovernmental Panel on Climate Change (IPCC) reports and in online media material.

The IPCC is the United Nations body for regularly assessing the science related to climate change, its impacts and future risks, and options for adaptation and mitigation. IPCC purpose is to provide governments at all levels with scientific information that they can use to develop climate policies. It also provides key input into international climate change negotiations. The IPCC does not conduct its own research: scientists come from all over the world, volunteer their time to assess thousands of scientific papers published to provide a comprehensive summary of what is known about climate change intending to produce policy relevant assessments (IPCC 2019). As it is this group of scientists with these tasks and objectives, the IPCC poses as an important international environmental organization for the analysis performed here.

In the IPCC analysis, all reports were considered and all Working Groups publication and policymakers reports as well since the first one in 1990. The terms were the same previously mentioned, excluding the parts of the texts mentioning about animals, plants or geologic dynamism. The intention of analyzing IPCC´s publications was to check if they reflect the tendencies we could visualize on global production of knowledge, paying attention to how this worldwide known report about climate change defines this phenomenon over the years.

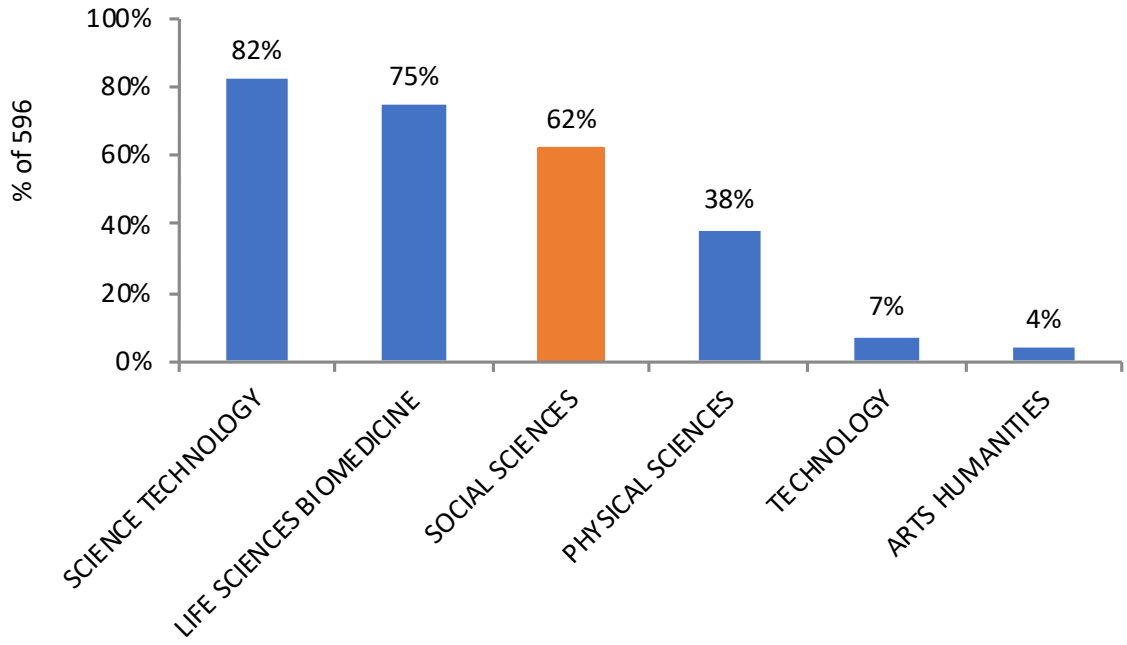
The analysis of media material was somewhat different. It was mainly focused on the case chosen for the empirical research: Shishmaref, a native community in rural Alaska, which has voted to be relocated due to the consequences of climate change impacting their daily lives and survival. In addition to the terms mentioned above, “Shishmaref” or “Arctic” or “Alaska” were also selected. The sample was gathered into different newspapers with online open-access

collection and it was adopted a snowball approach to gather this material, building a reading network through this (Lecey and Beatty 2012). That is, an important article cites another relevant article which conducts the research to also having access to this. The time limit was from 2002, the first local relocation voting process in Shishmaref. Although it did not intend to be an extensive analysis, this was an important research step, to get closer to the case chosen before the fieldwork, which took place in August 2017. It was also important to identify the general narrative mobilized by the media to describe social groups living the consequences of climate change.

Bibliometric analysis and overview of trends

Figure 1 shows the articles production from 1980 to June 2018 in the main areas of production. The number of publications has been increasing since 2010, and the distribution in the general areas of knowledge shows that around 82% of the literature focuses primarily on Science and Technology, 74% on Life Sciences and Biomedicine and Social Science appears in the third position with 61%. This is crucial to show the importance of Social Science area. Even though it is not simple to tell how climate change will ultimately affect us, or if its impacts will be as powerful and transformative of cultures as colonizers and missionaries, as also questioned by Callison (2014), this research shows that scientific production within this area is necessary to problematize the way in which research efforts understand 'the social' of climate change (Billi, Blanco and Urquiza 2019).

FIGURE 1: DISTRIBUTION IN THE GENERAL AREAS OF KNOWLEDGE



Source: Data withdrawn from Thomson-Reuter *Web of Science*, elaborated by the author.

Figure 2 summarizes a bibliometric analysis of research areas inside the Social Science subsample, showing that Social Issues, Government Law and Sociology have gained space over the years. Among social scientists, is expected that Sociology production about climate change and migration increases because sociologists could contribute significantly to migration-environment inquiry through attention to issues of inequality, perceptions, and agency vis-à-vis structure (Hunter et al 2015). Although, Figure 2 shows that the amount of production with sociological approaches to discuss the relations between climate change and human displacement is already low, specifically in this database, which productions within Social Science areas has been gaining strength more recently. In terms of trends, research on Environmental Sciences Ecology, Demography and Geography have been growing and keeping the top ranking of production.

FIGURE 2: DISTRIBUTION OF RESEARCH AREAS INSIDE THE SOCIAL SCIENCE SUBSAMPLE

Source: Data withdrawn from Thomson-Reuter *Web of Science*, elaborated by the author.

Below, the narratives identified through the readings of the selected articles per decade (the five most cited) were analyzed, summarized on Table 2. Highlighting the different approaches these papers were taken over time – what was no longer used, what concepts were emerging – is important to assess the dynamism of narratives construction and mobilization. As some authors indicate (Ramsan-Cooper et al 2015; McNamara 2007; Farbotko and Lazrus 2012), the narratives mobilization evolves leaving the concept of *refugees* and the conceptual burden of persecution, victims and security threat to be more attentive to local social groups perception about themselves being considered as political subjects. None of these narratives are self-evident; instead, they rely on a range of beliefs and assumptions, which influence policy action. Effective advocacy, at least in some part, relies on some knowledge of how different actors understand an issue and why (Ramsan-Cooper et al 2015). The following literature review can be used to unpack the communication gaps which do not contribute to an effective influence into the legal apparatus to support social groups. It is the proposition of this chapter, in concordance with McNamara (2007), that the lack of policy development is an outcome of the ways in which debates have been articulated within institutions and the ways in which political subjects have been constructed discursively.

Narratives on environmental and climate induced displacement

The literature review presented here shows that four main different narratives emerged over the years successively. Some are decades-old, and some are raised and depicted more recently, some are widely spread and some have received less widespread attention. And it is important to highlight the fact that this review does not raise ideal types, totally separated as static entities. Actually, the narratives are often hybridized, and not always consistently deployed by the same actors in an arena. It is possible to identify that an actor who was used to mobilize a narrative in the past, can adopt another one later. That is, the narratives are not linear or cumulative and the emergence of one does not necessarily eliminate the previous.

Environmental refugees: Victims or threats

The earliest narratives identified from our literature review were those describing environmental displaced people as *victims* or *national security threats*. It was used mainly in the first decades, especially when the concept of environmental refugees was solidified by the studies of El Hinnawi in 1985. After this, this concept had gained some space in the scientific field with Myers and his prospects of a frightening future.

> Environmental refugees are persons who can no longer gain a secure livelihood in their traditional homelands because of environmental factors of unusual scope, notably drought, desertification, deforestation, soil erosion, water shortages and climate change, also natural disaster such as cyclones, storm surges and floods. In face of these environmental threats, people feel they have no alternative but to seek sustenance elsewhere, whether within their own countries or beyond and whether on a semi-permanent or permanent basis (Myers 1997: 18–19).

More recently the term "climate refugee" was deployed, attempting to deal with the more contemporary dilemma:

> "climate refugees" [is defined as] people who have to leave their habitats, immediately or in the near future, because of sudden or gradual alterations in their natural environment related to at least one of three impacts of climate change: sea-level rise, extreme weather events, and drought and water scarcity (Biermann and Boas 2010: 67).

This alarmist rhetoric of *refugeeism* considers this phenomenon as one of the most advanced human crises of our times (Myers 1993). Authors who adopt this rhetoric and category have made an effort using this narrative, that were an important part of a process of putting this issue and its consequences into the global political agenda, especially because of the adaptation of original refugee term from Geneva Convention (UNHCR 1951), which guarantees the legal protection for those designated refugees, that is, people fleeing their countries due to race, religion, membership, nationality, or political persecution. However, environmental or climate refugees' categories simply do not meet UNHCR definition, having no legal bases of protection. With so, these concepts are often considered as weak and meaningless (Callison 2014), and even as an inappropriate use of the concept of refugee, because of a false expectation it raises that may never be achieved.

Besides that, the use of the terms environmental or climate refugees also aroused several criticisms due to their monocausal character, difficult to be proven empirically and likely to be simplistic and unilateral (Black 2001; Piguet 2008). Economic, social, institutional and political

factors, combined with other harmful processes and events such as civil war and poverty were all identified to be the principal root causes behind population displacements—not environmental change alone (McNamara 2007). Thus, the use of the environmental refugee category involved ‘‘a false separation between overlapping and interrelated categories’’ (McGregor 1993: 158). Furthermore, this language matched by drastic imagery of distressed populations “on the move”, especially with developing countries populations asking for being “saved” by the developed ones, imposing the frightening prospect of *guests* in conflict with *invasion*.

In concordance with Ransan-Cooper et al. (2015) analysis, our data identified the narrative of victims constantly in connection with the narrative of security threats. Because of it[,] these denominations are separated here as a heuristic, and are not understood as reified or static entities. The victim narrative considers peoples forced to move due to environmental changes (including climate change) as social groups suffering the consequences externally and distant produced. This is a narrative mobilized by some INGOs, such as the Worldwatch Institute (Jacobsen 1988) as well as the media, researchers and governments in order to assign a symbolic human face of environmental change and disaster in terms of helplessness and passivity, in need of saving through foreign donor, financial assistance and even asylum (Ransam-Cooper et al. 2015). People on the move are victims in need of protection (from other countries). This sensationalist narrative has often been mobilized intending to raise awareness, promote policy action and is considered newsworthiness (Farbotko and Lazrus 2012; Hartman 2010; Lowe 2006) because it turns the problem visible. That is,

> Apparently graspable concepts and visible entities have become crucial ways to help lay publics engaging with the climate change debate. (…) Melting glaciers, stranded polar bears and disappearing islands seem to provide tangible signifiers through which climate change can be made knowable to those unfamiliar with scientific climate models. In an era of continuing skepticism and inaction on climate change, these signifiers are more than pedagogical, they are highly political, implicated in the production of climate change as a crisis (Farbotko and Lazrus 2012: 385).

This is confirmed by the media content analysis deployed in this research. It was easy to find stories of “the first environment/climate refugees” (Goldenberg 2013a) or material about relocation process of communities or nations sinking (Goldenberg 2013b; Ganga 2015; Woolf 2016; Price 2016) and about the tragedy of villages built on ice (Sutter 2017). These articles use the empirical case as the face of a contemporary dilemma, which is a potential scandal of

people on the move, which constitutes the newsworthiness of climate refugee stories, rather than the plight of displaced people in and of itself (Farbotko 2005; Lazrus 2009a). According to Barnett and Campbell (2010) the vulnerability discourse is mobilized by outsiders for different purposes: to sell news, to save earth, to turn attention away from the drivers of climate change contributing to small island states' continuing position as marginal to international political and economic interests.

Therefore, these kinds of narratives neglect some important points. Considering potential displaced peoples as victims undermines the migrant agency and capacity to face the climate impacts locally, hampering the global efforts to reduce greenhouse gas emissions if relocations are pursued as pre-emptive solutions (McNamara 2007). Besides, it also sidelines local understandings and perceptions of the problem, neglecting their rights to land and culture (McNamara and Gibson 2009), their rights to be and to live whoever and wherever they chose.

Environmental and climate migrants are also often presented as a threat to national or regional (even local) security, mainly by news media, some scientific reports and civil society. The fundamental solutions within this narrative is generally related to military answers and the protection of sovereignty, exacerbating tensions and conflicts over scarce resources, challenges to development, and racial dimension of 'us' and 'them', in the place of relocation. From this perspective, the environmental/climate migrant is seen as a pathological source of violence or threat. However, the narrative ignores basic elements of countries' political economy that helped create and sustain these kinds of tensions and conflict, such as gross inequalities and asymmetric power relations. Mass displacement depends on a plethora of factors that is too simplistic to see climate change as a major trigger that can be assessed by itself.

Some authors consider that part of security threat narrative legitimacy is purported to derive from climate change science, including the IPCC (Ransam-Cooper et al. 2015) and some U.N. agencies, development NGOs, national governments, security pundits and popular media (Hartman 2010). About the IPCC, Ramsan-Cooper et al (2015) argue that this panel has been criticized for citing non-academic papers favoring neo-malthusianism, which main argument is that:

> population-pressure induced poverty makes Third World peasants degrade their environments by over-farming or over-grazing marginal lands. The ensuing soil depletion and desertification then lead them to migrate elsewhere as 'environmental refugees', either to other ecologically vulnerable rural areas where the vicious cycle is once again set in motion or to cities where they strain

> scarce resources and become a primary source of political instability (Hartman 2010: 234).

The IPCC's approach to climate migration has matured over the course of the institution's history. In our analysis of IPCC reports we could identify this narrative, especially into the first reports, having a change of narrative more recently. According to the IPCC (1990) Working Group II, which is called Climate Change: Impacts, Adaptation, and Vulnerability, "if the rate of change is sufficiently rapid, this change could overwhelm humanity's ability to adapt, triggering widespread refugee problems, famine and conflict over scarce resources. (IPCC 1990: 182)". In Working Group III, The IPCC Responses Strategies, this view is still depicted: "An associated issue is that of the social implications for the host people at the place of relocation. There exists a potential for conflict, and existing social services may be heavily taxed in the host area if relocation is not well-planned and managed" (IPCC 1990; 2014). Although it is an approach with many shortcomings, the role of IPCC to discuss climate change impacts is crucial and has been evolving lately, avoiding the use of terms such as *refugees* in the most recent report, pointing a hopeful sign that some new trends are starting to occur.

Yet, many challenges remain. The victim narrative has proved popular and useful to a variety of interests. What Hartman (2010) highlights is that this frightening prospect and the imagery of population 'crisis narratives' end up justifying certain kinds of Western development interventions, threatening to militarize not only climate policy, but also development assistance. "Spinning climate change as a security threat is likely to undermine, rather than strengthen, serious efforts to link climate change mitigation and adaptation to development efforts that reduce poverty and promote equity" (Hartman 2010: 239). That is, climate refugee narratives can, through mobilizing racist fears of dangerous, poor peoples on the move, protect the interests of national security in the west, increasing rather than addressing fundamental issues of social inequality. According to Femia and Werrel (2011), defining climate change as a security threat is a slippery slope that will ultimately lead to a narrowing of the scope of responses to traditional security solutions through traditional security institutions.

> … the "security agenda" is primarily concerned with traditional, so-called "hard security" threats, like conflict, war and international terrorism, and does not prioritize "soft security" threats, such as economic stagnation, lack of resilience, absence of justice, and environmental degradation (Femia and Werrell 2011: 1).

Thus, these authors also say that framing climate change as a security issue risks overshadowing important social and environmental concerns such as adaptation, mitigation, development,

economic growth, equity, justice and resilience, which do not figure as priorities on the security agenda but which are integral to addressing climate change (Femia and Werrell 2011). Moreover, this approach sidelines that local communities poorly resourced manage their affairs without mobilizing the victims or the threat arguments, because they do not want to be guests in a place which is not meaningful for them. This scenario would impose a likely great loss of culture values, traditions and relations among the communities' members. These narratives undermine individual agency as well as the community's internal resilience. They tend to create an impression that environmental displaced people are simply passive helpless people waiting for external protection; or render them into villains fighting for already scarce resources in a foreign place, incapable of innovation or livelihood diversification. This does not match with reality. The sensationalism of the term 'climate refugees' is too easily answered by reactionary policies preventing movement without genuine concern for the welfare of populations involved (Warner et al. 2009).

Migration as adaptation: an exaggerated positivity?

The narrative which faces the environmental/climate migrants as adaptive agents was not as prominent as the others in our literature review. Mobilizing migration as a way of adaptation starts showing some changes, when this narrative rejects the security threat approach. Whilst it is important to highlight environmental problems and their association with migration pressures, as previously argued, the use of *refugeeism*, which conflates the disruptive idea of victims and threat, the adaptive agent approach tries to look at the phenomenon with its possible positive aspects. Authors have argued against the use of the term 'environmental refugee' to describe those displaced by climate change because the term is conceptually, legally and institutionally unfounded (McGregor 1994).

What is argued from this perspective is that the migration is a positive adaptation response rather than a failure to cope with climate change impacts. Migration can represent a transformational adaptation to global environmental changes and can be an effective way to build a long-term resilience (Foresight 2011: 10). Looking at empirical cases, McGregor (1994) points to diverse experiences in different places, going beyond the victims needing protection or villains promoting conflict. This author shows some examples of refugees not being a burden for host communities, but being an opportunity for development at the host place and back to

place of origin. Cases when capitalists, elite or low wage laborers has been moved and began development asset, especially regarding to food production or sending home remittances of money or goods. That is, the reception of displaced populations has been a resource to the host economy in the mid or long term, despite being initially disruptive.

With the argument that migration will be the only option of adapting climate change for many peoples around the world, this approach has been playing a role of hope (Ransan-Cooper et al. 2015), creating a support to policies which facilitate safe, organized and regular migration. However, presenting migration as a welcome solution to climate change impacts and those affected as adaptable migrant workers tends to overemphasize positive outcomes, neglecting some important issues. This narrative plays down the need for mitigation of the root causes of climate change by important actors into the global climate arena. Besides that, it often turns a blind eye to the possibilities of adaptation in-situ, which tends to be the local actors demand. Thereby, understanding climate displacement as an opportunity to adapt places an unfair onus on those affected to use migration in their suite of livelihood activities, instead of supporting them to locally adapt where possible and where desired (Ransan-Cooper et al. 2015). That is, affected peoples have to alter their own behavior, their own livelihood, their own attachments to place in response to external pressures and change.

Not using an alarmist rhetoric, nor a sensationalist language, this narrative considers some positive responses over migration as adaptive measure. However, it does not bestow agency to the local people. It does not look at them as victims or threats, but it does not acknowledge populations as social actors with political demands and action strategies capable to deal with climate change impacts in the same negotiation stage of other important social actors in the global climate arena. The subtext was that the people affected have little internal resilience to fight for much more than relocation. Hunter and collaborators (2015) emphasize that it is important to recognize that migration is a long-standing form of environmental adaptation and yet only one among many forms of adaptation. Besides, migration is not a simple strategy to cope with risk, it interacts with other ongoing dynamics such as household composition, individual characteristics, social networks, and historical, political and economic contexts (Hunter et. al 2015).

Political subjects living and coping with climate change impacts

A more recent and still emerging narrative has been facing the affected populations as political subjects, in a different set of visions for the future. In concordance with Hunter and collaborators (2015), who state that over the past two decades, empirical research on the topic of migration and climate change has burgeoned, our literature review could identify that this recent approach is emerging from works that have empirical case studies, which widen the tendency of having open eyes to local actors´ demands and perceptions of themselves. Furthermore, this narrative arose from a criticism and a strong rejection of the reductionism of environmental/climate refugee categories expressed by local actors (McNamara and Gibson 2009; Farbotko and Lazrus 2012), avoiding simplistic or naturalized analysis of adaptation capabilities as well. The prospect of migration coupled with a designation as refugee is perceived as denying local actors the right to a subjectivity and voice as an equal citizen of the global community in the global climate arena.

The general assumption of authors who adopt this narrative is "that vulnerable people are constrained in their choice (stay or leave) by unequal power relations, though they possess the potential agency to challenge fundamental socio-economic systems, as well as the institutions and policies that shape environmental degradations and vulnerability" (Ramsan-Cooper et al 2015). This narrative is based on three characteristics: 1) access to and control over resources to be inserted into negotiation arena; 2) self-determination, highlighting the concern of being open to ground realities, demands and responses, invoking the importance of community-derived and -driven solutions to environmental and climate migration; 3) empowerment of local actors, considering them subjects with political voices, demanding for a reframing of the debate on the future of their country in terms of human rights and global citizenship (Farbotko and Lazrus 2012).

The dominant demand from local actors viewed as political subjects is that climate change must be curbed to prevent them from having to flee their homelands. Exodus is simply not part of an acceptable future scenario (McNamara and Gibson 2009). The emphasis here is on the mitigation of root causes of climate change rather than adaptation as acceptance, or passive wait for external help. The consensus among these groups is that climate change will produce displacement pressures vulnerable places, and that preventative action from industrialized nations is necessary. To do so, it is important to articulate a culturally grounded narrative of strength, agency and courage in the face of potential displacement (Ransam-Cooper

et al 2015). That is, it is important to understand that local actors want to control their future and their perspectives: they want to have some choice.

As argued in the beginning of this chapter, this shift of approaches is important because it tends to influence the scope and the shape of policy developments. Discursive categories producing new realities McNamara and Gibson (2009). The narratives broadly adopted of *refugeeism* and migration as adaptation do not grant agency to the local populations and over-emphasize the external measures of adaptation. Instead of paying attention to the local understandings of the problem, it feeds the lack of policy development within institutions to cope with the real causes of climate change and to remove the burden of adaptation from the local actors.

McNamara and Gibson (2009) studied how the Pacific states which are most at risk of being made landless by climate change. The authors interviewed the Pacific states ambassadors at the United Nations to discuss how they have responded to the category of 'climate refugees', and positioned themselves in the narrative field surrounding the climate change debate. Their study shows the different approaches and how each one tends to influence policy action.

> Talk of 'climate refugees' is, in other words, geopolitically damaging to Pacific states. At the heart of the contestation over the category of 'climate refugees' is a geopolitical tension between visions for the future. The vision for the future validating the category of 'climate refugees' is based on Pacific islands (as weaker, marginal nations) having to adapt in the most extreme way to problems created by large, polluting nations (rather than those polluting nations curbing their own emissions as 'the solution'). In contrast, Pacific nation ambassadors envision a future as self-determining nation-states, and thus, strongly resist media/policy discourses that legitimize their possible future displacement en masse. (…) The category of 'climate refugees', while perhaps reflecting a real likelihood of people being displaced from widespread environmental change, also sent a message, particularly to richer countries, that mitigation will not be as important as adaptation (McNamara and Gibson 2009: 481).

Considering environmental/climate migrants as political subjects has a myriad of great new efforts to change the view of the future. Nevertheless, it raises some significant challenges, especially about the participatory decision-making in environmental migration policy. Moreover, this upward approach is pointing to a serious conceptual challenge to the manner in which places, peoples and environmental 'problems' are categorized in global geopolitics

(McNamara and Gibson 2009). This dissertation seeks to handle with these challenges, through our own example, by exploring these four narratives produced through climate migration 'talk'.

Discussion

Grounded realities disclosing narratives dynamism

This chapter moves forward from an analysis of how environmental/climate refugee have been constructed in global scientific knowledge production. It discusses how local social actors understand themselves in relation to these categories, revealing the dynamism in the way this phenomenon has been discursively constructed. During this literature review several case studies, from primary and secondary data, were depicted and collaborate to the findings we have been deploying in this dissertation. In this section we put Shishmaref in dialogue with the cases of some Pacific Islands, such as Kiribati, Tuvalu, the Carteret Islands, and Maldives, as well as some other Arctic native communities to show how local actors in different cases have been mobilizing some narratives, to face the phenomenon of climate change impacting human displacement.

Studying Shishmaref and reviewing these other cases reaffirms how climate change is a reality because it has been coming to gain meaning within their communities due to the likely forced migration scenario. It also shows how climate change is an element of local actors' narratives strategies to relate themselves as part of one world[7]. Mobilizing climate change knowledge enables to find a common ground problem all over the world, convincing important actors into the global climate arena, such as policy-makers, national governments, international agencies, and the like, to care about them. That is, being connected makes their voices louder. It is not just a common problem, but also a common way to translate them that helps social groups, such as Shishmaref, to drive their demands to the center of knowledge production and

[7] "what happens there, does not stay there" this is a slogan often used by advocates of native communities in the Arctic. To better understand, check: Ulmer, 2013; Watt-Cloutier (2015).

international and national policy-making agencies. However, the narratives of *refugeeism* or of migration as adaptation are not widespread used by local actors recently.

According to fieldwork data, at a first moment, being connected to reporters and journalists, who mobilize the victims and threat narratives, and who were sent there to tell Shishmaref's story of facing climate change impacts to the world, was a strategic tool to scale-up what is going on there. That is, it was an important instrument to convince local groups in favor of relocation, then influence the regional and national governments, and international agencies to assure them that such local groups needed assistance (Sheppard 2014). And some news article named them likely environmental refugees (Augustenborg 2016; Mele and Victor 2016; Sutter 2017). And as the analysis of media material showed, media has been openly adopting a narrative of victimization since then, due to the newsworthiness element of this approach. As stated by Marino (2012), in Shishmaref, the media attention seemed to push policy-makers at the state and federal level to demonstrate renewed attention and a task force was established to look at immediate needs of communities increasingly exposed to flooding hazards. In spite of all of these efforts, very little actually changed for Shishmaref residents, who continue to face flooding threats and no clear procedure for an organized, safe and regular relocation emerged. At the same time, the expected 'big flood' did not happen. Media fascination with environmental refugees began to wane as expectations were met with a 'disappointing' lack of material (Marino 2012).

The use of *refugeeism* narrative ended up generating a strong uncertainty feeling about the future of Shishmaref. Marino and Ribot (2012) showed that there was a near-complete cessation of state and federal investments in the community directed to repairs at the health clinic, landfill, the airport runway and the construction of new housing. These authors say that discourses on climate change migration with victimization and threat view isolated the community from modern infrastructure, which creates its own factors for the gradual migratory decisions, and deepened its vulnerability. These outcomes of being defined by climate refugees disrupt the initial aim of the residents who proposed relocation: the displacement of the community as a whole to a meaningful place in order to avoid to the maximum the symbolic losses and their cultural characteristics.

As a result of misunderstanding their necessities by outsiders (some media workers, researchers, government institutions), and the lack of policy actions to cope with the imminent problem, the local actors' strategy has changed. As Callison (2014) mentioned, in 2007, Shishmaref had asked some journalists and researchers to pass on the message to interested

media to give them a break for a bit. They were so inundated with media crews that it was beginning to become a problem for the small village. (Callison 2014: 45). They had a shutdown moment in relation to the media workers, trying to avoid the narratives which define them as environmental or climate refugees, and also rejecting the word relocation due to the uncertainties entrenched in these terms. As cleared mentioned in the Shishmaref Local Economic Development Plan 2013-2018 [SLEDP], the word "relocation" is obviously part of their discussion about their future, but it is also part of a list of "weaknesses" and a list of "threats", stating that "because of the word 'relocation', Shishmaref can't get as much funding as it should" (SLEDP 2012: 49). Part of this rejection is that the narratives broadly adopted by the main actors into the global climate arena are not paying attention to the local understandings of the problem.

Other studies have showed a similar process of resistance to the climate refugee category and the entrenched narrative of local groups being defined as victims, threats or adaptive agents. This rejection is a consequence of not wanting to be portrayed as passive victims with no power to cope with climate change impacts. As the narrative found in Shishmaref, Lazrus and Farbotko (2012) study in Tuvalu, and McNamara and Gibson (2009) studies of Pacific states ambassadors' narratives also show that the local actors advocate for climate change being constrained to prevent them from having to flee their home. Besides that, local actors have been demanding that such narrative must be replaced with an acknowledgement of them as citizens of sovereign, self-determined groups of empowered people. Affected people wish to remain in their homelands, fight for their rights to be where and who they chose to be. A written interview with an employee from Village Infrastructure Protection Program Manager at Denali Commission showed this resistance about "environmental/climate refugees":

> We don't use this terminology. It has a connotation of political unrest. I don't think that use of this terminology advances the understanding of the issue. We need the public to understand/believe that saving these unique subsistence cultures in Alaska are worth the public investment. Identifying them as refugees or migrants doesn't move toward that understanding. How do we aid political refugees? We invite them into our existing communities. There are many that believe we should simply take individuals from these threatened villages and bring them to our existing communities. That is not desired by the communities themselves and would likely mean the death of a culture (Denali Commission employee, July 2018, written interview).

Taking a second look to the Shishmaref case, it is important to understand that being there for more than 16 years after the first voting process for relocation is not a sign of weakness or passivity. This is a political strategy which put them as agents with demands to be listened by outside actors. They chose not to migrate gradually. They chose to stay at the island to resist the burden of adaptive measures. They have urgency, but they also have criteria to be attended. As with the Pacific peoples, they wished to remain in their homelands and pleaded with the international community to mobilize attention and resources to support them. Yet most importantly, they urged international leaders to not making decisions for remote communities and nations in the fight against climate change. This position is not aggressive, but nor is it passive. It is merely clear on the point that sovereignty remains paramount (McNamara and Gibson 2009).

What is pleaded is that, co-operatively and realistically, international community pushes the countries which are contributing to climate change to take their responsibility and act to curb the effects of climate change. As it was said by McNamara and Gibson (2009) a key theme from the interviews with Pacific ambassadors was that focusing on migration instead of mitigation was not only defeatist but a globally irresponsible vision for the future. It is a matter of reallocating the focus and the benefits would achieve everybody – developing and developed nations, affected and responsible actors.

Reformulating the narratives: environmental problems are also a human right issue

Local actors worldwide have been advocating for reframing the debate about their own future in terms of human rights and global citizenship (Farbotko and Lazrus 2012; McNamara and Gibson 2009; Bronen 2009, 2011; Watt-Cloutier 2015). Such arguments were not a denial of the environmental issues capable of creating migrants, but instead they were cultural and political arguments about identity, place attachment and human rights to self-determination. Demanding this is not an excuse for international community to dismiss adaptation measures where they are needed, nor unburden the most responsible actors in this arena. Reassertions of sovereignty and the right to survive on their own land were also simultaneously statements about need for multilateral institutions to intervene in the mitigation of global environmental issues (McNamara and Gibson 2009).

Therefore, what is argued is that dominant global narratives about climate change, such as environmental/climate refugee categories, can entrench vulnerable communities in inequitable power relations, redirection their fate from their hands. Families and island communities are debating ways in which their culture, identity and right to self-govern will remain theirs if one day the islands become uninhabitable. (Farbotko and Lazrus 2012). That is, climate change is not just a matter of a moving process of a group to a safer place. It is an issue about equity, identity, power of decision and human rights. It involves the right to be subject and to have the voice of a citizen in the global community deciding their own future. Starting this reframing at the knowledge production scope is decisive to build policy actions more effective and attentive to local demands and how local actors have been constructed discursively.

Conclusions

The traditional concepts and policies concerning the immigrant and the refugee, are not enough today to address the current phenomenon of climate change impacting human displacements. The literature review reveals that there is a forthcoming trend of shifting narratives, particularly among those scientific works which are based on empirical data. This is a tendency to describe likely displaced peoples not as the fragile idea of victims, or the frightening prospect of security threat, but as political subjects who have global demands to be accomplished by an international community. Research about climate change impacts on human displacement has been increasing, and the knowledge production in the social sciences is also expanding. More recently, even psychology has been included in the research area of scientific production over this theme (Clayton and Manning 2018; American Psychological Association 2009). Having such diversity of research areas is important to give more attention to the voice of local understandings, going beyond the material aspects of this contemporary phenomenon.

As Farbotko and Lazrus (2012) state, representations of climate refugees, like any other representation, are neither static nor innocent. Language needs to be considered as an active intervention, which impacts not only on how we understand the world, but also on how we act upon it (Rorty 1979). This is to say that under- standing the world cannot be separated from

acting upon the world (Bars Art et al. 2013). Thus, the narratives broadly adopted by dominant actors into the global climate arena have implications for the scope and shape of policy actions. And as the *refugeeism* is still a widespread approach, it is pushing the policy actions to the focus on adaptation and not on cooperative actions to curb climate change causes. Focusing on migration as an acceptable adaptation measure is hampering policy action due to the social and economic costs of this. According to primary and secondary data analyzed in this literature review, changing the focus would be the communities preferred option, and would also be much less expensive than relocation. But, to achieve this, a shift of future views, of narratives is needed. To effectively change climate change governance, scientific approaches need to be changed, being more attentive to local realities and demands. Marino (2015) raises the question: is the risk posed to Shishmaref (and other local communities all over the world) the product of climate change or the product of a history of development that ignored local knowledge and removed local adaptation strategies?

Besides that, it is important to emphasize the work of people in multiple agencies struggling to reach the goal of relieving the burden of climate change that affected people. It is important to highlight the multiple institutions because climate human displacement issue has been showing that this contemporary phenomenon is a complex issue with multiple set of triggers. Climate change is both a discursive and material phenomenon. To fully understand its effects, analysts must integrate perspectives, values and knowledge of people who live in climate change affected places along with the biophysical changes occurring. Equitable climate change governance requires greater openness to local groups´ emotions, values, mobility and spaces and requires that science, media and governance institutions tune in more closely to debates at these scales. (Farbotko and Lazrus 2012).

REFERENCES

AAS, K.; HAARDE, G.; KOUKKU-RONDE, R.; LYRVALL, B.; TAKSØE-JENSEN, P. 2015. What Happens in the Arctic Does Not Stay in the Arctic. *Huffington Post.* https://www.huffingtonpost.com/amb-kare-aas/what-happens-in-the-arctic-does-not-stay_b_7445208.html (available on 02.13.2019)

American Psychological Association. 2009. *Psychology & Global Climate Change Addressing A Multifaceted Phenomenon And Set Of Challenges.* https://www.apa.org/science/about/publications/climate-change-booklet.pdf (available on 02.14.2019)

AUGUSTENBORG, C. 2016. Shishmaref Climate Refugees Relocation - A sociological tipping point in Arctic Alaska. *Ecologist*. https://theecologist.org (available on 03.19.19)

BAS ARTS, J.; BOMMEL, S.; KONING, J.; TURNHOUT, E. 2013. Prelude to Practice: Introducing a Practice Based Approach to Forest and Nature Governance. Bas Arts, J.; Bommel, S.; Koning, J.; Turnhout, E. 2013. *Forest and Nature Governance A Practice Based Approach*. Springer Dordrecht Heidelberg New York London.

BATES, D. 2002. Environmental refugees? Classifying human migrations caused by environmental change. *Population And Environment*, ed. 5, vol. 23.

BARNETT, J., CAMPBELL, J., 2010. *Climate Change and Small Island States: Power, Knowledge and the South Pacific*. London and Washington, DC: Earthscan.

BIERMANN, F.; BOAS, I. 2010. Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees. *Global Environmental Politics*, ed. 1, vol. 10.

BILLI, M.; BLANCO, G.; URQUIZA, A. 2019. What is the 'Social' in Climate Change Research? A Case Study on Scientific Representations from Chile. *Minerva*. 10.1007/s11024-019-09369-2

BLACK, R. 2001. Environmental Refugees: Myth or Reality?. *UNHCR* Working

BRONEN, R. 2009. Forced Migration of Alaskan Indigenous Communities due to Climate Change: Creating A Human Rights Response. In: *Linking Environmental Change, Migration & Social Vulnerability*, edited by Anthony Oliver-Smith. Bonn: UNU Institute for Environmental and Human Security (UNC-EHS). America's Climate Choices: Adapting to the Impacts of Climate Change. https://www.researchgate.net/publication/236444520_America%27s_Climate_Choices_Adapting_to_the_Impacts_of_Climate_Change (acessado em 24/05/2017)

BRONEN, Robin. 2013. *Climate-Induced displacement of Alaska Native Communities*. Alaskan Immigration Justice Project. January 30, 2013.

http://www.brookings.edu/~/media/research/files/papers/2013/1/30-arctic-alaska-bronen/30-climate-alaska-bronen-paper.pdf (acessado em 19/10/2015)

CLAYTON, S., and MANNING, C. 2018. *Psychology and climate change: Human perceptions, impacts, and responses.* New York: Academic Press.

EL-HINNAWI, E. 1985. *Environmental Refugees*. United Nations Environmental Program, Nairobi.

FARBOTKO, C., 2005. Tuvalu and climate change: constructions of environmental displacement in the Sydney Morning Herald. *Geografiska Annaler* B 87 (4), 279–293.

FARBOTKO, C. ; LAZRUS, H. The first climate refugees? Contesting global narratives of climate change in Tuvalu. *Global Environmental Change* 22 (2012) 382–390.

FEMIA, F. and WERRELL, C. 2011. If Climate Change is a Security Threat, Who's Qualified to Fight It? Hint: Everyone. *BRIEFER*. No. 04 | October.

FENG, S.; KRUEGER, A.; OPPENHEIMER, M. 2010. Linkages among climate change, crop yields and Mexico-US cross-border migration. *Proceedings Of The National Academy Of Sciences Of The United States Of America*, ed. 32, vol. 107.

FORESIGHT. 2011. *Migration and Global Environmental Change – Future Challenges and Opportunities.* Final Project Report: Executive Summary. The Government Of ce for Science, London.

GANGA, M. 2015. This is climate change: Alaskan villagers struggle as island is chewed up by the sea. AUG 30, 2015 | 3:00 AM | KIVALINA, ALASKA. *Los Angeles Times*. https://www.latimes.com/nation/la-na-arctic-obama-20150830-story.html (available on 03.19.19)

GLORFELD, J. 2017. Moderate warming tipped to produce flood of refugees into Europe. *Cosmagazine*. https://cosmosmagazine.com/climate/moderate-warming-tipped-to-produce-flood-of-refugees-into-europe (available on 03/06/2019)

GOLDENBERG, S. 2013a. America's first climate refugees – Newtok, Alaska is losing ground to the sea at a dangerous rate and for its residents, exile is inevitable. *The Guardian* https://www.theguardian.com/environment/interactive/2013/may/13/newtok-alaska-climate-change-refugees (available on 05/23/2017)

GOLDENBERG, S. 2013b. Relocation of Alaska's sinking Newtok village halted. *The Guardian.* https://www.theguardian.com/environment/2013/aug/05/alaska-newtok-climate-change (available on 12.02.2019)

GRAY, C. 2009 . Environment, Land, and Rural Out-migration in the Southern Ecuadorian Andes. *World Development*, ed. 2, vol. 37

HARTMANN, B. 2010. Rethinking Climate Refugees And Climate Conflict: Rhetoric, Reality And The Politics Of Policy Discourse. *Journal Of International Development*, ed. 2, vol. 22.

HENRY, S.; SCHOUMAKER, B.; BEAUCHEMIN, C. 2004. The impact of rainfall on the first out-migration: A multi-level event-history analysis in Burkina Faso. *Population And Environment*, ed. 5, vol. 25.

HUGO, G. 1996. Environmental concerns and international migration. *International Migration Review*, ed. 1, vol. 30.

HUNTER, L.; LUNA, J. AND NORTON, R. 2015. The Environmental Dimensions of Migration. Annu Rev Sociol. 2015 August ; 41: 377–397. doi:10.1146/annurev-soc-073014-112223.

IPCC. 1990. *Policymakers' summary of the potential impacts of climate change (*Report from Working Groupe II to IPCC) IPCC – Secretariat, Geneva. http://www.ipcc.ch/publications_and_data/publications_ipcc_first_assessment_1990_wg2.shtml (available on 05/23/2017)

IPCC. 2007. *Impacts, adaptation and vulnerability*. Working Group II Summary for Policymakers. Geneva: IPCC Secretariat. http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg2_report_impacts_adaptation_and_vulnerability.htm (available on 05/23/2017)

IPCC. 2019. About the IPCC. https://www.ipcc.ch/about/ (available on 02.12.2019)

IPCC. 2014. *Impacts, Adaptation, and Vulnerability*. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. http://www.ipcc.ch/report/ar5/wg2/ (available on 05/23/2017)

JACOBSON, J. 1988. Environmental Refugees – a yardstick of hability. *Bulletin of Science Technology and Society.* Ed. 3, vol. 8.

JACOBSON, J. 1988. Environmental Refugees – a yardstick of hability. *Futurist.* Ed. 3, vol. 23.

JAMES, D. 2016. More than global warming afflicts endangered Shishmaref. *AND.* https://www.adn.com/books/article/more-global-warming-afflicts-endangered-shishmaref/2016/03/27/ (available on 02.13.2019)

LAZRUS, H., 2009. Perspectives on Vulnerability to Climate Change and Migration in Tuvalu. *Studies of the University: Research, Counsel, Education*. Bonn, UNU Institute for Environment and Human Security (UNU-EHS).

LECY, J. AND BEATTY, K. 2012. Representative Literature Reviews Using Constrained Snowball Sampling and Citation Network Analysis Available at SSRN: https://ssrn.com/abstract=1992601 or http://dx.doi.org/10.2139/ssrn.1992601 (available on 02.12.2019)

MARINO, E. 2012. The long history of environmental migration: Assessing vulnerability construction and obstacles to successful relocation in Shishmaref, Alaska. *Global Environmental Change* 22 (2012) 374–381

MARINO, E. 2015. *Fierce Climate, Sacred Ground: an Ethnography of Climate Change*. Fairbanks, Alaska: University of Alaska Press.

MARINO, E. & RIBOT, J. 2012. Adding Insult to Injury: Climate Change, Social Stratification, and the Inequities of Intervention, an Introduction. *Global Environmental Change***,** 22/2:323-328.

MARTIN, P.; LEFEBVRE, M. 1995. Malaria And Climate – Sensitivity Of Malaria Potential Transmission To Climate. *AMBIO*, ed. 4, vol. 24.

MCGREGOR, J. 1994. Climate-Change And Involuntary Migration – Implications For Food Security. *Food Policy*, ed. 2, vol. 19.

MCNAMARA, E. 2007. Conceptualizing discourses on environmental refugees at the United Nations. *Population and Environment*. 29:12–24 DOI 10.1007/s11111-007-0058-1

MCNAMARA, K.; GIBSON, C. 2009. We do not want to leave our land': Pacific ambassadors at the United Nations resist the category of 'climate refugees'. Geoforum, ed. 3, vol. 40.

MELE, C.; VICTOR, D. 2016. Reeling From Effects of Climate Change, Alaskan Village Votes to Relocate. *The New York Times.* https://www.nytimes.com/2016/08/20/us/shishmaref-alaska-elocate-vote-climate-change.html?_r=0 (available on 02.13.2019)

MYERS, N. 1997. *Environmental Refugees*. Population and Environment, Ed. 1, Vol. 19

MYERS, N. 1993. Environmental refugees in a globally warmed world, in: *Bioscience* 43: 752–61

MYERS, N. 2002. Environmental refugees: a growing phenomenon of the 21st century *Philosophical Transactions Of The Royal Society Of London Series B-Biological Sciences*, ed. 1420, vol. 357.

PETERS, A. 2017. There Will Soon Be Floods Of Climate Refugees: Will They Get Asylum? *Fastcompany*. https://www.fastcompany.com/40491897/there-will-soon-be-floods-of-climate-refugees-will-they-get-asylum (available on 03/06/2019)

PRICE, S. 2016. Alaskan town votes to relocate as climate change submerges island. *United Press International – UPI* https://www.upi.com/Top_News/US/2016/08/18/Alaskan-town-votes-to-relocate-as-climate-change-submerges-island/2091471512295/?spt=sec&or=tn (available on 13.02.2019)

RANSAN-COOPER, H.; FARTBOKO, C.; MCNAMARA, K.; THORTON, F. 2015. Being(s) framed: the means and ends of framing environmental migrants. *Global Environmental Change.* 35. 106-115.

RORTY, R. 1979. *Philosophy and the mirror of nature*. Princeton University Press, Princeton.

SHEPPARD, K. 2014. Climate Change Takes A Village – as the planet warms, a remote Alaskan town shows just how unprepared we are. *Huffington Post*. 14 de Dezembro de 2014. http://www.huffpostbrasil.com/entry/shishmaref-alaska-climate-change-relocation_n_6296516 (available on 05/23/2017)

SHISHMAREF LOCAL ECONOMIC DEVELOPMENT PLAN (2013-2018). Elaborado por: The Community of Shishmaref e The Bering Strait Development Council. http://www.kawerak.org/ledps/shishmaref.pdf (acessado em 23/05/2017)

SUTTER, J. 2017 . Tragedy of a village built on ice. *CNN*. https://edition.cnn.com/2017/03/29/us/sutter-shishmaref-esau-tragedy/ (available on 02.13.2019)

ULMER, F. 2013. What happens in the Arctic doesn't stay in the Arctic. Published on youtube by Yale University. https://www.youtube.com/watch?v=VWkGw89x0_c (available in 13.02.2019)

UPI. 2013. U.S. pledges aid to help Vietnam counter climate change. *United Press International – UPI.*https://www.upi.com/Top_News/World-News/2013/12/15/US-pledges-aid-to-help-Vietnam-counter-climate-change/UPI-18331387124041/ (available on 02.13.2019)

WARNER, K., EHRHART, C., DE SHERBININ, A., ADAMO, S., CHAI-ONN, T., 2009. In Search of Shelter: Mapping the Effects of Climate Change on Human Migration and Displacement. *Care International*, CIESIN Columbia University, UNHCR, UNU-EHS, World Bank.

WATT-CLOUTIER, S. 2015. *The Right to Be Cold – One Woman's Fight to Protect the Arctic and Save the Planet from Climate Change*. Minnesota: University of Minnesota Press.

WESTING, A. 1992. Environmental refugees – a growing category of displaced persons. *Environmental Conservation*. Ed. 3, vol. 19.

WOODRUFF, D. 2010. Biogeography and conservation in Southeast Asia: how 2.7 million years of repeated environmental fluctuations affect today's patterns and the future of the remaining refugial-phase biodiversity. *Biodiversity And Conservation* , ed. 4, vol. 19.

WOOLF, N. 2016. Alaskan village votes on whether to relocate because of climate change. *The Guardian.* https://www.theguardian.com/environment/2016/aug/16/alaska-town-shishmaref-vote-climate-change-relocation (available on 02.13.2019)

WROUGHTON, L. 2016. Com mudanças no Ártico, EUA temem catástrofe climática. *Reuters Exame*. https://exame.abril.com.br/mundo/com-mudancas-no-artico-eua-temem-catastrofe-climatica/ (available on 02.13.2019)

CHAPTER 2

THEORETICAL-METHODOLOGICAL APPROACH

Abstract

Human displacement has been a frequent concern for social actors involved into the global climate arena due to the urgency of this issue in some situations. But this problematic also poses some challenges about the future of some groups, communities, towns, and nations, which imply negotiating process in different levels. From the discussion of expectations and the resources mobilization to the rule-making about the migration processes, their causes and consequences, the decision-making brings together actors with different goals, worldviews, and negotiating powers. This chapter analyzes the global climate arena in order to understand how this issue comes to matter, deploying the dynamism of actors' action, hopes, strategies across levels and over the time to influence the decision about human displacement triggered by climate change. I have adopted the theoretical-methodological approach of "arena", focusing on how global knowledge and category production has had an influential role throughout the different levels of this arena, empowering or undermining actors' actions. This research step is based on literature review; on a content analysis of local and international media material and some scientific reports; and also, on semi-structured interviews during and after the fieldwork in Shishmaref, Alaska. This was the case study chosen, a native community which voted to be relocated due to sea level rise impacts in 2002, and has not been resettled yet. Due to the slow-onset impacts characteristics and the temporality of the decision-making, this case has been interesting to understand how the global narratives and categories scientifically produced are being mobilized by actors in this arena. This theoretical-methodological approach is considered suitable to this analysis because it allowed us to see: 1) the different levels of action, from the most focused to a broaden one; 2) the agency of each actor in this arena, even with unequal power of influencing the decisions; 3) the dynamism of action across level and time.

Key words: climate change; human displacement; arena; environmental governance

INTRODUCTION

Human displacement has been a frequent concern for social actors involved into the global climate arena due to the urgency of this issue for many current realities. Social groups, native communities, towns and even nations have been facing the near future dilemma about being pushed from their own lands due to the apparent unstoppable climate change impacts. According to Sassen (2016), it is known that mankind has been using the biosphere and causing damage to it for millennia, but only in the last thirty years has such damage been so great that it has turned into a planetary event that comes back like a boomerang, often reaching places that had nothing to do with the original destruction source, such as the inter-annual sea ice of the Arctic or the remote Pacific islands. The combination of technologies and innovations developed after the Industrial Revolution that increased the human capacity for extracting benefits from nature now threatens essential components of the biosphere, leaving the planet with "ever-increasing expanses of dead land and water", "expelling entire societies from their territories (Sassen 2016: 21)".

Several examples can be cited of potential human displacement caused by the new climate pattern of often increasingly and intense extreme events: 1) flooding in Bangladesh and Pakistan; 2) sea level rising and coast erosion in the Pacific Islands, such as Kiribati, Tuvalu, Maldives, or tropical places such as Ilha Comprida in São Paulo, and native communities all over the Arctic; 3) drought and desertification in large areas in Africa, as Sahel, and semiarid region in Brazil. These are examples of marginal nations, regions or places, with different abilities to cope with these impacts. They may not be in the center of concerns of many people and institutions, but are often cited by the scientific articles and reports about climate change impacts. For people thousands of miles away from this reality it may be reasonable to know

that these communities are eroding, but is it really understood what that means? What do these affected ones demand and advocate for? How do they make themselves heard?

These questions raise an interesting puzzle about a broader problematic: how does this issue come to matter? How are the decisions and definitions about what is urgent taken? As part of this chapter assumption, we understand that the global environmental knowledge production is an important part of this process, regarding that there is a surge in global knowledge-making efforts to inform environmental governance (Turnhout et al. 2015). Thus, it is questioned how has global knowledge and categories production been having an influence role throughout the different levels of the global climate arena, empowering or undermining local actors' actions to cope with the challenges posed by climate change on potential human displacements?

In the light of these research questions, empirical data was gathered from semi-structured interviews during and after the fieldwork in Shishmaref, Alaska, the chosen case study. Shishmaref is an Alaska Native community which voted to be relocated due to sea level rise impacts in 2002, and is not resettled yet. Due to the slow-onset impacts characteristics and the temporality of the decision-making, this case has been interesting to understand how the global narratives and categories scientifically produced are being mobilized by actors in this arena. Besides that, this chapter is also based on a literature review; on a content analysis of local and international media material and some scientific reports.

To develop data analysis, the conceptual-analytical framework of arena was adopted. This framework (Figure 1) comes from a hybrid theory of arena concept (Ferreira et al 2017, 2012; Feital 2016) which combines and adapts mainly perspectives of collective action and institutional analysis of Ostrom and collaborators (1999, 2005; McGinnis 2011; Ruiz-Ballesteros and Brondízio 2013) and the theory of resource mobilization of Renn (1992) and Hannigan (1995). Briefly, arenas are social spaces (not necessarily geographical) of negotiation and discussion about political decisions in which social actors mobilize their social resources in order to expand their capacity to influence political decision-making in favor of their interests, goals, and motivations (Bacchiegga and Ferreira, 2013). So here, the dynamism of the negotiating processes among different levels and actors regarding climate displaced peoples is analyzed. The main focus is to understand to which extent global knowledge and the production of global categories about climate change and human displacement influence local actors' strategies into the decision arena, considering their diverse worldviews, expectations, action strategies and power of influence.

The chapter is organized as follows: after presenting the method and the empirical research, the conceptual-analytical framework will be introduced. Then, the global climate arena will be depicted in its different levels of action, showing the dynamism and the flow of the interactions among actors involved in this arena over time and space, supporting the understandings of the negotiating stages about human displacement and climate change impacts. Finally, the chapter discusses how the empirical realities have been imposing the necessity of scaling up knowledge and influence, in order to be attentive to local demands and to the urgency of this phenomenon. From this discussion we offer a synthesis of the reasons why this approach is considered suitable to this kind of analysis.

Methods and the empirical research

The analysis of global climate arena regarding human displacement is based on a set of complimentary methods. It was started with a literature review on climate displaced people, using key terms such as: "climate change", "migration", "refugees", "human displacement", "arena", "decision-making process" and the like. The material was gathered into seed articles[8] in different journals, scientific reports and books, adopting a snowball approach to gather this material, building a citation network through this (Lecey and Beatty 2012). That is, an important article cites another relevant article which conducts the research to also have access to it. This was an important methodological step, because it allows us to 1) put concepts and categories in debate in order to question them in the light of the local realities; 2) identify and connect different actors and narratives in the same context of negotiating climate governance, acting in different levels of action situation; 3) bridge the empirical research with other similar realities all over the world, with different contexts but being part of the same arena.

A content analysis of local and international media material was also a significant methodological step. It was mainly focused on the empirical study, selecting important terms beyond those already mentioned, such as "Shishmaref", "Arctic", "Alaska" "coastal erosion"

[8] The seed article selection starts with a knowledge domain – that is either possessed by the researcher herself or obtained through consultation with domain experts. The seeds include articles that are generally foundational or framing articles on a topic widely cited as a reference point for anyone doing research in the domain (Lecey and Beatty 2012).

and so on. The sample was gathered into different newspapers with online open-access. The time limit was from 2002, the local voting process in Shishmaref deciding to relocate the community due to the climate change impacts they have been facing. Although it did not intend to be an extensive analysis, this was an important research step, to get closer to the case chosen before the fieldwork, which took place in August 2017, identifying some key social actors and their roles into the global climate arena. It was also important to identify the general narrative mobilized by the media to describe social groups living the consequences of climate change.

The fieldwork was conducted in August 2017, and it lasted about four weeks. It took place in Anchorage, the most populous city in Alaska and where some of the international and subnational organizations are placed; and in Shishmaref and Nome, both in rural Alaska. The methods used were participant observation and semi-structured interviews with local actors and with representatives of regional agencies: Inuit Circumpolar Circle (ICC-Alaska), in Anchorage; and Kawerak, in Nome. All of these interviews, totaling 18 formal interviews were granted with the consent of the interviewees, and some were recorded in audio and some on field journal. Two written interviews were conducted later, with a young community member and with a representative of Denali Commission in July 2018 to complete some information. As part of the fieldwork, the informal conversations were also important, totaling 11 people, which were depicted on field journal. The real names will not be used here to safeguard the actors' identities; they will just be mentioned when the actor's statements were gathered from secondary material from media or other academic articles.

In Shishmaref, I followed the persons considered by local people as being interesting to be in contact with. From mayor and vice mayor to the elderly people, from representatives of Native Village of Shishmaref to students, teachers and assistants at Shishmaref School. The analysis of the interviews was based on some key points to understand who are considered the main actors in each of the different levels of global climate arena; what the perceptions and expectations of local actors are about themselves and the decision-making process; and which narratives they use as part of their action strategy to influence climate arena.

Shishmaref

Shishmaref is an Alaskan native community which voted to be relocated due to climate change impacts in 2002. The case study was chosen regarding the characteristics of slow-onset climate impacts, which are gradual and cumulative, and it enables a temporality for a negotiating and decision process. Because of that, Shishmaref has been interesting to understand how the global knowledge and categories scientifically produced are being mobilized by actors throughout the different levels of the global climate arena. This Inupiat rural village has approximately 600 inhabitants, whose main livelihoods are directly related to the Arctic environment: hunting, fishing, picking and handcrafting (Shishmaref Local Economic Development Plan, SLEDP, 2013-2018).

Shishmaref sits on the small Sarichef island, five miles off the coast of the Seward Peninsula, having Chukchi Sea in the North and surrounded by the national park Bering Land Bridge National Preserve (Figure 1). Shishmaref has been inhabited, at least on seasonal basis, as camping site, for several centuries, but the nomadic community was pushed to settle in a territory because of the US central government's education and health policies in the early twentieth century. For the traditionally mobile Inupiat who settled there, Shishmaref made a certain amount of sense: its ideally located for winter hunting on sea ice and close enough to the mainland to access traditional subsistence grounds in summer. It was, however, always tenuous ground to build on (James 2016).

FIGURE 1: MAP OF SHISHMAREF, ALASKA, UNITED STATES OF AMERICA

Source: VOA, 2016

Several are the consequences of climate change impacting Shishmaref people and being perceived by them since the 1970s. The stories always remember the changes in the sea ice and the physical and social problems related to it. The sea ice is starting to form later in the fall, also breaking up earlier in the spring, it is getting narrower, and mushier, becoming too dangerous to hunt using snowmobiles. It also contributes to the vulnerability to storm surges and, consequently, coastal erosion and loss of land in an already tiny island (Figure 2). Data indicates that this intensification can cause death and damage to the community, damaging housing and essential infrastructure (such as school, clinic, sanitation system, roads, airstrips and houses) (U.S. Army Corps of Engineers 2009).

FIGURE 2: PREDICTABLE AND HISTORIC COASTLINES IN SHISHMAREF

Source: U.S. Army Corps of Engineers 2009.

After two severe storms in 1997 and 2001, some houses were destroyed and local people mobilized government agencies to help them face this problem. In the summer of 2002, the community has decided to relocate based on an understanding – endorsed scientifically – that the island will eventually erode away. Residents of Shishmaref voted to move the entire village to the mainland, close to their current local, with the intention to keep the community together and the connections with the environment. The United States Government Accountability Office (USGAO) noted that more than 200 native communities are experiencing erosion and flooding related to climate change (USGAO 2009). The estimated costs of the Army Corps of Engineers in 2004 were 179 million dollars for Shishmaref to relocate in the continental part of Alaska (U.S. Army Corps of Engineers 2004)[9]. People express divided emotions about the relocation: some are overwhelmed by the stressful condition of moving, that they could lose their connection to the land, to home, to cultural identity; and some are excited by the prospect of gaining certain conveniences, such as running water. But, what everybody agrees on is that the village's situation, already dire, is only going to the worse (Kolbert 2015) if nothing happens to change their prospect and meet their demands.

[9] According to interviewed local actors, this amount has increased to 400 million dollars in updated values.

With this local decision, and a push of reporting about the "environmental refugees in Alaska" (Augustenborg 2016), Shishmaref was inserted in an arena of negotiations about the relocation process involving articulations and connections with actors in different levels of action situation with diverse worldviews.

Local actors' worldview, according to people interviewed in Shishmaref[10], is that dispersing into several places or being guests in a strange city is not an option. Being apart from the community, the sea ice and their land would be like losing the strong human-ecological relationship, one of the last things that were not taken away from them with the colonialism. The colonialism of Alaskan native communities began in the earlies ninetieth century, forcing traditional nomadic communities to fix themselves in places where western school and church would be built in order to take over the national territory through occupation and formal education. According to some interviewees, this was a painful historical process which did not allow them to use their language, to keep some tradition, changing some important cultural values. Some people from Shishmaref said that this historical process is part of a mindset which keep them away from the decision about their own fate. Herrmann (2017) argues that Such detrimental legacies of colonial power dynamics of looking, perceiving, and evaluating indigenous, peripheral communities as a disempowered "other" underscore the narrative which adopt Shishmaref case in the visual imaging of native communities as a disempowered "other". It is important to constantly remember that their land is not just a ground for economic development, it is also cultural defining social roles, habits, myths, ancestral values. With so, they want to be inserted into the global climate arena, trying to influence decision-making about their own future according to their own demands.

As the interviewee from Denali Commission has mentioned, there is a number of factors that prevent community from moving:

> 1) Existing community sites are located near subsistence resources. Available relocation sites are frequently far from these same resources. Communities are reluctant to move to sites further from the very resources that provide their livelihood
> 2) Also, threats are often cyclical. Once the immediate threat has passed, the motivation to continue through a difficult relocation effort wanes. This is particularly true when the threat is flooding from storms. It could be years

[10] Interviewed by the author in August, 2017, and by other researchers and reporters such as Marino (2015; 2012), Sheppard (2014), Bronen (2009; 2013).

> before a storm with sufficient magnitude to damage the community returns. In the interim, I think it is human nature to begin to question whether a move is really needed.
>
> 3) Data to determine whether a community can be protected in place or must relocate is often unavailable or incomplete
> 4) We have no formal policy addressing relocation (who is the responsible party and how will it be funded?). So even if a community, federal, and state agencies agree that a relocation is a must (such as in the case of Newtok) there is not a readily available funding stream to assist with that relocation. Newtok has been trying to relocate for over 10 years. The primary barrier is funding (Denali Commission employee, July 2018, written interview).

Intending to develop these factors, specially the last two ones, an analysis of the decision-making process was deployed sequentially according to the arena conceptual-analytical tool.

Arena: a conceptual-analytical tool

Arenas can be understood as spaces where different social actors interact in face of a specific collective decision that has to be made (Ostrom 1999). The actors establish connections and opposition, conflicts and alliances, among them according to their worldviews. And they also organize their groups and action strategies through mobilization of social resources in order to maximize their opportunities to influence the outcomes of an arena (Hannigan 1995; Renn 1992). The social resources were better developed by Renn (1992), and can be summarized in: money, power, prestige, value commitment, and technical-scientific evidence (Table 1). The one this research is more attentive to is the last one, due to the goal to understand to which extent global knowledge and the production of global categories about climate change and human displacement influence environmental governance. According to Hannigan (1995), the most important action takes place in arenas that are populated by communities of specialized professionals: scientists, engineers, lawyers, medical doctors, corporate managers, political operatives, among others. Such technical *experts* are the chief constructors of environmental and climate issues. They are the ones who have greater legitimacy to define the acceptable levels of impacts and adaptation, and it is to them that the other actors turn to increase their credibility, mobilizing their knowledge as a resource to wide their possibility of influencing the

decision process results. In this sense, science in this theoretical-analytical approach of arena is considered as an actor influencing the results of the negotiations, and also as a set of resources that could be mobilized by the other social actors playing in the arena.

TABLE 1: SOCIAL RESOURCES MOBILIZED BY SOCIAL ACTORS IN AN ARENA

Social Resources	Describing the importance in an arena
Money	provides incentives (or compensation) in exchange for support or at least tolerance
Power	is the legally attributed right to impose a decision on others; conformity is established by the threat of punishment
Social influence	produces a social commitment to find support through trust, reputation, prestige and social reward
Value commitment	induces support through persuasion, solidarity, and cultural meaning
Technical-scientific evidence	is used to convince people about the likely consequences of social actions; a powerful convincing resource because it potentially gives legitimacy to the justification and arguments of one group

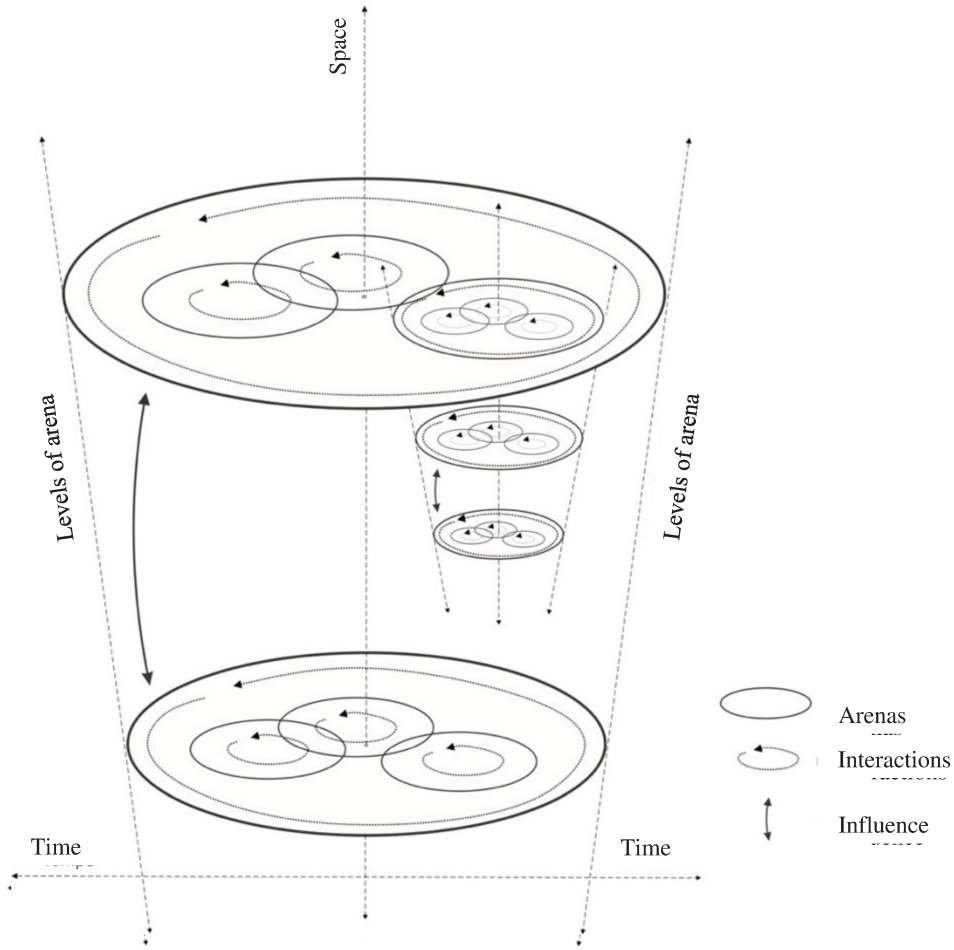
Source: adapted from Renn 1992.

Actors able to mobilize more than one type of resource within the same arena increase their advantages in the decision-making process. In the same way, an actor can have great influence in a situation of action that composes the arena, due to its wide mobilization of multiple social resources; but when it acts on another level of the arena, it faces other actors with other resource mobilization capabilities, and may be less influential on this second stage. Moreover, these social resources are not equally distributed and accessed among the actors in an arena. This power asymmetry can influence the decision-making outcome (DeCaro 2011; Ferreira 2007; Feital 2016). Therefore, this approach is also attentive to how a power difference can influence the performance of social groups in an arena or in one of their situations of action.

An important element of this concept concerns the multiple levels (or stages) of a specific arena. According to Ostrom (1999), explanations of a contemporary dilemma occur at multiple levels and different temporal and spatial scales. The author uses the physical concept of "holon" to explain this feature. The idea of holon comes from Arthur Koestler concept developed on his work *The Ghost in the Machine* (1967), describing it as something which is simultaneously a composite of smaller parts, an individual unit, and a piece of a larger whole. A holon is a node in an open hierarchical system, a universal building block in all societies, organisms languages and many other systems. From this perspective, holons exist simultaneously as self-contained wholes in relation to their sub-ordinate parts, and as dependent

parts when considered from the inverse direction. Arena being considered as a holon means that an entire system at a level of analysis is only part of a system at a broader level of analysis (Ostrom 2005)[11]. In this way, the arena can be decomposed into different levels of action situation (Figure 3) – which can be determined on the geographic scale, for example, having local, regional, national and international action situations (Caldenhof 2013; Feital 2016).

FIGURE 3: DESCRIPTION OF THE ARENA AS A HOLON



Source: Adapted from Ferreira et al. 2012, Calvimontes 2013. In this figure one can understand how each level of the arena is composed of actors (individuals or groups) in the process of negotiating a decision that they try to influence from the mobilization of social resources. These actors can also be understood and decomposed as arenas, depending on the research interest. Interactions between participants at one level influence the interactions at the other levels.

[11] "The term holon may be applied to any stable sub-whole in an organismic or social hierarchy, which displays rule-governed behavior and/or structural Gestalt constancy" (Koestler 1973: 291 apud Ostrom 2005: 11)

Similar to the idea of holon, Renn (1992) understands that an arena is composed of several different stages interconnected with each other and that divide main actors – those groups that seek to negotiate and influence decision making. This is important to understand that actors who move between the various levels of an arena do not always have the same strategies, the same roles, the same allies and the same resources or power of influence. According to Calvimontes (2013), this is due to the fact that the role of the actors in each level of arena is also influenced by the presence and actions of the other actors. That is, a local actor can play a leading role at this level of action, mobilizing multiple resources to influence decisions on this stage, but ends up playing another role when it is placed on a broader level of action, and may have less access to the resources that the other actors present in this other stage.

This is important to see arena as a dynamic space of negotiation. What unites the actors in an arena is the common interest on and the intention to influence the decision on a situation of tension, but this does not necessarily mean the end of the clashes and a predictability of the results of the negotiations of that political space (Bacchiegga and Ferreira 2014). But it can mean the establishment of new rules or the revision and restructuring of them, making the arena a dynamic and circumstantial space. This is because, by placing the actors in action as the focus of the analysis, this approach confers agency to the individuals and social groups participating in the arena, whether they are hegemonic or not. Thus, this conceptual-analytical tool does not pose an ongoing reproduction of power relation in all existing arenas. That is, this approach does not determine the actor's action result due to the power relation this actor is associated with. This approach does not place the rules (structure) in the arena above the agency of individuals (action), or *vice versa*. Even considering the structural elements of rules (written or oral) and norms, agreed by all actors to regulate their actions, the concept of arena also confers agency to them, allowing them to interfere both in the outcomes of the negotiation of decisions as well as in the rules that organize an arena. Considering this, arena is circumstantial contingent and dynamic; because actors are able to change strategies, restructure and\or subvert rules.

Without neglecting the procedural characteristic of the arena, this approach is also placed on the temporal scale, valuing the historical process of its structuring. That is, an arena does not emerge from a vacuum of context; it brings a baggage of previously formed interactions, positions and interests of the actors that compose it. At the same time, its results cannot be anticipated, leaving open all the possibilities for its future development and the decisions that will emerge from it. In this way, it is possible to visualize a tensional and pulsating movement between situation and history; between contingency and permanence;

between creativity and reproduction; which happens simultaneously and constantly producing changes in different levels of social organization, as well as in several scales of space-time analysis. In summary, within a relational sociological approach, this tool allows the research to analyze the data understanding both 1) the structural factors that organize the interactions and connection between social groups, and 2) the dynamics of the interactions and strategies of action that these actors adopt to influence the results of negotiations in a decision-making process.

Thus, with this analytical framework it is possible to look at the globalized climate negotiating process as an arena (Figure 4) with several stages intertwined. As the idea of holon allows us to reflect, the interaction among actors in one level of situation can influence the interaction in other levels of action, being simultaneously part and whole of this system. Thereby, global climate arena has different levels of action situation, illustrated on Figure 3, with different paths of influence among them. Global climate arena is understood as the negotiating space about climate governance issues, such as biophysical impacts of global warming, impacts on food security, water resource, health, and the like. Among this myriad of issues being negotiating into the global climate arena is the sub-whole related to human displacement caused by climate change impacts. This sub-whole has been involving different social actors, with different worldviews, interests, goals, expectations, motivations, action strategies and capacities of mobilizing social resources, acting in different levels in order to expand their influence over the political decision-making regarding climate displaced peoples. This sub-whole will be described and analyzed below, following an analytical path which corresponds to the path of the structuring process of this arena.

Global Climate Arena regarding human displacement

First moment – expecting stable and nested interactions

As already mentioned, based on government agencies understanding that the island will eventually erode away, in 2002 Shishmaref voted to relocate the village to a selected place in the mainland after two severe storms in 1997 and 2001, which destroyed several houses. This decision was posed by them, because they were becoming aware of the change in their environment and the absence of urgent actions to stop these changes. The local institutions,

such as the Native Village of Shishmaref, Shishmaref Native Corporation, City of Shishmaref, youth leaders, elderly organization, were organized to find a way to keep the community together, their values and culture, and the connections with the environment. At that moment, divided emotions about the relocation were spread. But, the results of the voting process showed how worried all of them were of an imminent tragedy related to climate change: 90% voted in approval of relocation. And according to people which contributed to the empirical research in August 2017, even those 10% was worried about the dire village's situation if nothing happened to change their prospect[12]. Exodus or dispersing into strange urban places is not an option for them.

With this local decision, Shishmaref called attention of media, which started considering them as the "first environmental refugees in America" (Goldenberg 2013). In a first moment, they were opened to media workers coming to the island to talk to and about them. According to a former member of Shishmaref Erosion Relocation Coalition (SERC, interview granted in August 2017), this alliance with the media was part of an action strategy to warn social actors elsewhere that they exist and they were living with a problem. Their goal was to mobilize enough resources to convey regional and federal agencies that their demands needed to be met, since they did not have enough financial resources to afford the relocation costs due to its subsistence economy character.

The first voting process was a remarkable moment for local political organization, which allowed local actors to penetrate into other levels of the decision-making process. Shishmaref Erosion Relocation Coalition is an example of this local movement. "One of the things the coalition was created to was to think about how to get everybody's attention" (former member of SERC, interview granted in august 2017). According to this interviewee, Shishmaref had erosion problems for a long time. In 1980s they used regular news and state TV to call attention that they had a problem. With the creation of SERC, they decided to use the media as a tool to show the world they are living the consequences of a real problem. Then, in the first year of this organization, he shot videos and photos of storms results using the media workers. As reported by him, Shishmaref received 65 different news crews in one year from all over the world. As a result of this local political organization, they got the funds to planning studies and

[12] This is the reason why I opted to use "they" many times to refer to Shishmaref people as a whole: because there is no clear conflict of opinions about their dire situation. There can be some divided emotions or opinions about the destiny of the community, but at this moment regarding this issue, there is no social cleavage.

some adaptive measures, such as the seawalls, called by another interviewee as “band-aid actions” (teacher at Shishmaref School, interview granted in august 2017).

With this local political organization and the push of the media material about the *environmental refugees in America*, Shishmaref along with other native communities in the Arctic was inserted in an arena of negotiations about the relocation process involving articulations and connections with actors in different levels of action situation with diverse worldviews. According to the former SERC member, “we used to try to work with people from other towns, foundations, federal agencies, congressional agencies, state governor and senator representatives. (…) I struggled to build a network with people who could help to have things done” (former member of SERC, interview granted in august 2017).

What was expected was the scaling up process of their demands through the mobilization of social resources such as social influence, value commitment and scientific evidence. On the one hand, local actors mobilized social influence through the local political organization, empowering themselves to negotiate with regional and national organizations in another lever of this decision-making process. And they also mobilized value commitment, with the alliance established with the media, inducing support through persuasion due to some media material produced about Shishmaref issues exploring their problem in connection to other realities elsewhere, which were important, according to the former member of SERC, because they expected it could stimulate, solidarity in favor of their and cultural meaning and political demands. On the other hand, the mobilization of science by Shishmaref people as a resource was present since then, on their speaking and on their local reports, such as The Shishmaref Local Economic Development Plan (2013-2018). This mobilization of science happened between Shishmaref people and scientists as well. They have been seeing researchers who studied their reality as a *partner* and not the sole *evidence* used to persuade outsiders to act. Science workers were also part of their network to understand their context, but also to amplify and legitimize their voice, influencing the science production. They definitely knew what the global production of climate change knowledge was talking about. The fieldwork just reaffirms how climate change is part of Shishmaref people's lives since they started to organize themselves to face this issue. Not as something they attribute to mythic reasons, but as a narrative they adopt because it has been coming to gain meaning within their community.

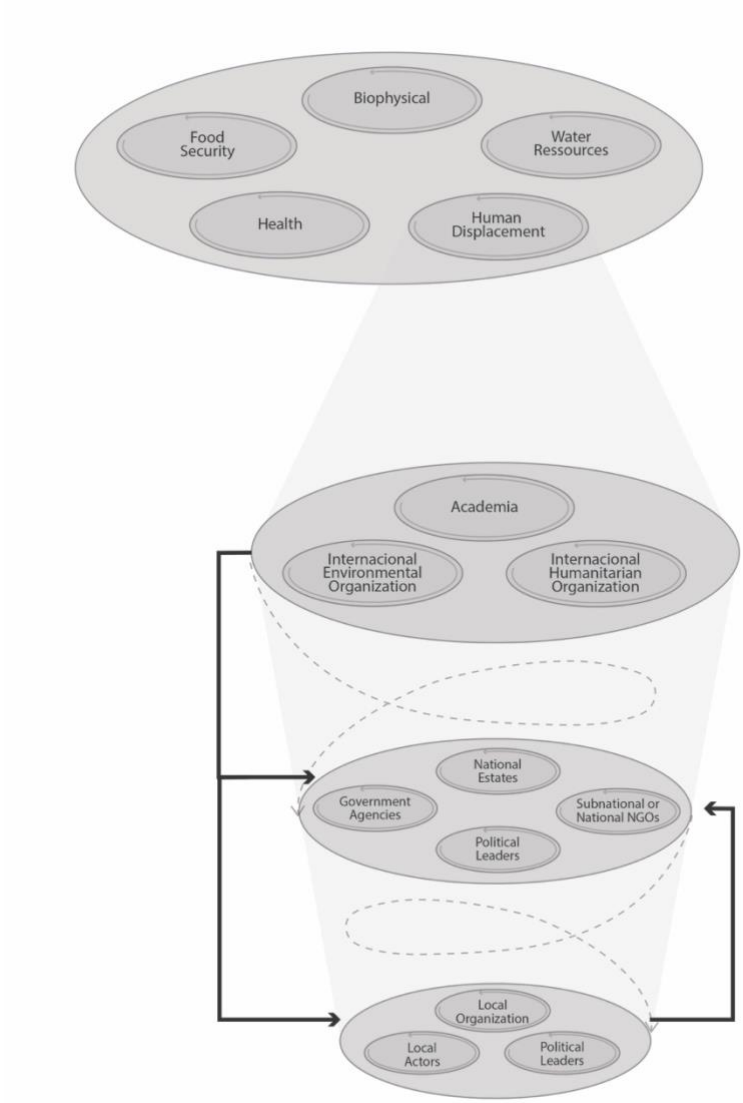
During the interviews granted in August 2017 they used climate change conceptualization resource to describe how a member of their family lost a house due to storms, which are becoming more intense and frequent with global warming; how a father had difficulty

last year to hunt because the sea ice was not so thick; how the animals are moving differently due to the temperature changes; how the berries are coming earlier, because the winter does last less – the examples are uncountable of how they do perceive the climate change impacts. Even examples connecting climate change concepts to psychological issues, such as suicide, is blooming from native advocates[13]. It is a sort of convincing process for outsiders becoming conscious about the global problem they have been facing.

With local political organization and the mobilization of such social resources, the local actors' intention was to influence at least the national level of this arena, where the environmental governance takes place, and influence the regional and local policy-making through the action of government agencies, national states, national and subnational non-governmental organization, political leaders, and the like. The flow of information and influence (Figure 4) should have been simple, nested and not distant: a local demand, should have been listened by regional and subnational agencies, which should have pushed national agencies and government to build a policy action, which would have had influence in the local realities, providing them as much resources as they need to relocate and avoid tragedy.

[13] Watt-Cloutier tries to make this point in interview for Fitzgerald (Fitzgerald and Watt-Cloutier 2018) and in her book *The right to be cold* (Watt-Cloutier 2015).

FIGURE 4: GLOBAL CLIMATE ARENA



Source: elaborated by the author. In the global level, the key actors identified during the research were: 1) academia, scientists producing scientific knowledge and categories; 2) international environmental organizations, such as the IPCC, which is also composed by scientific professionals producing globalized knowledge; 3) international humanitarian or development organizations, for instance, Inuit Circumpolar Council, International Organization for Migration, Platform on Disaster Displacement, Alliance of Small Islands, and so on. These actors interact among them, negotiating how the issue of climate displaced people comes to matter and how the decisions and definitions about what is urgent are taken, making some pushing influence to the national level actions, where it was assumed to be the stage of effective environmental governance and policy-making implementation. The national level is composed by government agencies, national states, national or subnational non-governmental organizations and political leaders, which was supposed to influence local level through policies of funding, development, relocation, adaptation and/or mitigation.

However, this nested strategy was not enough in that moment to achieve their goals – it can be attested through the fact this relocation never came to fruition. The outsiders' narratives were not translating what they were agog to talk. Back then, the predominant narratives used broadly by some media and scientific reports were the ones which adopt *refugeeism* term with the victimization or threat perspective, considering potential displaced people due to climate change impacts as one of the most advanced human crises of our times (Myers 1993). As mentioned previously (Chapter 1), this kind of external narratives neglect some important points, undermining individual agency and the likely community internal resilience. They tend to create an impression that 1) environmental displaced people can just be passive helpless people on the move waiting for external protection, from external actors who have control over the situation; or 2) render them into villains fighting for already scarce resources in a foreign place, incapable of innovation or livelihood diversification. This does not match with the many realities.

In spite of this worldview side effects, this sensationalist narrative has been often mobilized intending to raise awareness, promote policy action and is considered newsworthiness (Lowe 2006; Hartman 2010) because it turns the problem visible and construct perceptions of meaning, purpose, and power in stories of climate relocation (Herrmann 2017). In that moment, this discursive resource was important to call attention of social actors far away from local realities problems, inserting local peoples in the same stages of interaction with them. However, without genuine concern for the welfare of populations involved (Warner et al. 2009). Paying attention to the threat and consequences of displaced people, this narrative turns attention away from the drivers of climate change contributing to remote realities continuous position as marginal to international political and economic interests. Herrmann (2017) argues that journalistic storytelling of sea level rise and relocation has employed a formula of crisis, 'othering,' and victimization in representing the nexus of environmental change and culture in communities across the United States, depicting images and aesthetic codes which have constructed and conditioned perceptions of agency in America's climate discourse, disempowering at-risk coastal communities. That is, it undermines the migrant agency and capacity to face the climate impacts locally, hampering the global efforts to reduce greenhouse gas emissions if relocations are pursued as pre-emptive solutions (McNamara 2007). Besides, it also sidelines local understandings and perceptions of the problem, neglecting their rights to land and culture (Watt-Cloutier 2015; McNamara and Gibson 2009), their rights to be and to live whoever and wherever they chose.

According to Marino and Lazrus (2015); Wolsko and Marino (2016); Marino (2015); Marino and Ribot (2012) the worldview spread through media and scientific material in that moment promoted controversial effects for local actors, affecting extra-local decisions about development and infrastructure improvements in the community. Due to the lack of certainty about Shishmaref future, there was a near-complete cessation of state or federal development money entering the community (Marino and Ribot 2012) directed to repairs at the clinic, the landfill, the airport runway, and in the construction of new housing – why invest in a place that may not exist anymore? On the other hand, the "band-aids" of adaptive measures implemented by extra local agencies have also unintended consequences, as Marino and Lazrus (2015) have mentioned.

> While sea walls intended to prevent erosion have been constructed in some areas—often by international development organizations seeking to leave tangible evidence of their investments—they are often not effective and may actually serve to exacerbate erosion by channeling more wave energy onto the coast (Marino and Lazrus 2015: 344).

Thus, the action strategy back to earlies 2000 was blurred by the *refugeeism* narrative about potential climate displaced peoples. The focus on sudden extreme events along with this looking at a single cause of moving tend to conceal the fact that environmental changes and impacts are channeled through social, economic and political factors (Clark 2008) in a complex assemblage of connections. It conceals the fact that Shishmaref contemporary risk dilemma, for example, is also a historical product that ignored local knowledge about their own fate (Marino 2015). Thus, these narratives were not helping to promote the development of a policy action to influence the decision about climate change impacting mass human displacement. Besides the stress of moving and losing cultural identity to be strangers elsewhere, Shishmaref shows that the constellation of anthropogenic climate change-erosion-relocation is not an accurate analysis (Marino 2015): it shows how multi-causal linkages go beyond the biophysical impacts on the island, and so go the consequences and solutions for this dilemma. Moreover, this approach sidelines that local communities poorly resourced manage their affairs without mobilizing the victims or the threat arguments, because they do not want to be guests in a place which is not meaningful for them. This scenario would impose a likely great loss of culture values, traditions and relations among the communities' members.

After 16 years – reframing strategies

Waiting for external action seemed to be the next step. However, local actors realized that this was not part of what they really wanted for their future, and to achieve their demands they would need to be inserted in other stages of the global climate arena with other strategy and power of influence. Mobilizing the narrative resource of *refugeeism* and relocation through the media workers and mainstream science production was not helping them, actually it was stimulating external inaction toward local necessities. Hence, depictions of entire countries disappearing beneath sea level rise performed a particular function in the first moment, calling outsiders attention to their reality. However, it also brought up counter effects, stimulating inaction by western governments on climate change – why should governments worry about an uncertain future threat? The categories of environmental and climate refugees, while perhaps reflecting a real likelihood of people being displaced from widespread environmental change, also sent a message, particularly to richer countries, that mitigation will not be as important as adaptation (McNamara and Gibson 2009), because if adaptation was equated with relocation of affected ones from their home-land, there would be no premise to persuade the major polluters to mitigate and prevent further damage in those affected communities, who are the ones already carrying the burden of adapting.

The *refugeeism* narratives did not translate what their perceptions and their demands are. Thus, a different set of visions for the future emerged. The dominant view of local actors living climate change every day all over the world was that "climate change must be curbed to prevent them from having to flee their home-lands. As most of the interviewees expressed, the dissipation was simply not an acceptable future for them. That is, local actors reframed their action strategies in order to empower themselves to influence the global climate arena seeking their interests.

From the voting moment until the research fieldwork, 15 years have passed. And the sense of urgency has changed and has influenced on the local perception about this issue. According to an interviewee from Denali Comission, "threats are often cyclical. Once the immediate threat has passed, the motivation to continue through a difficult relocation effort wanes (written interview granted in July 2018)". As few people has yet been harmed or killed by these disastrous events, some local groups have questioned and altered their views on the need for community relocation. According to local leader Weyiouanna (in an interview granted for Sheppard 2014), it was estimated that the pro-relocation rate would fell from 90% at the

beginning of the decision-making process to 50% after 13 years. And it was exactly what happened.

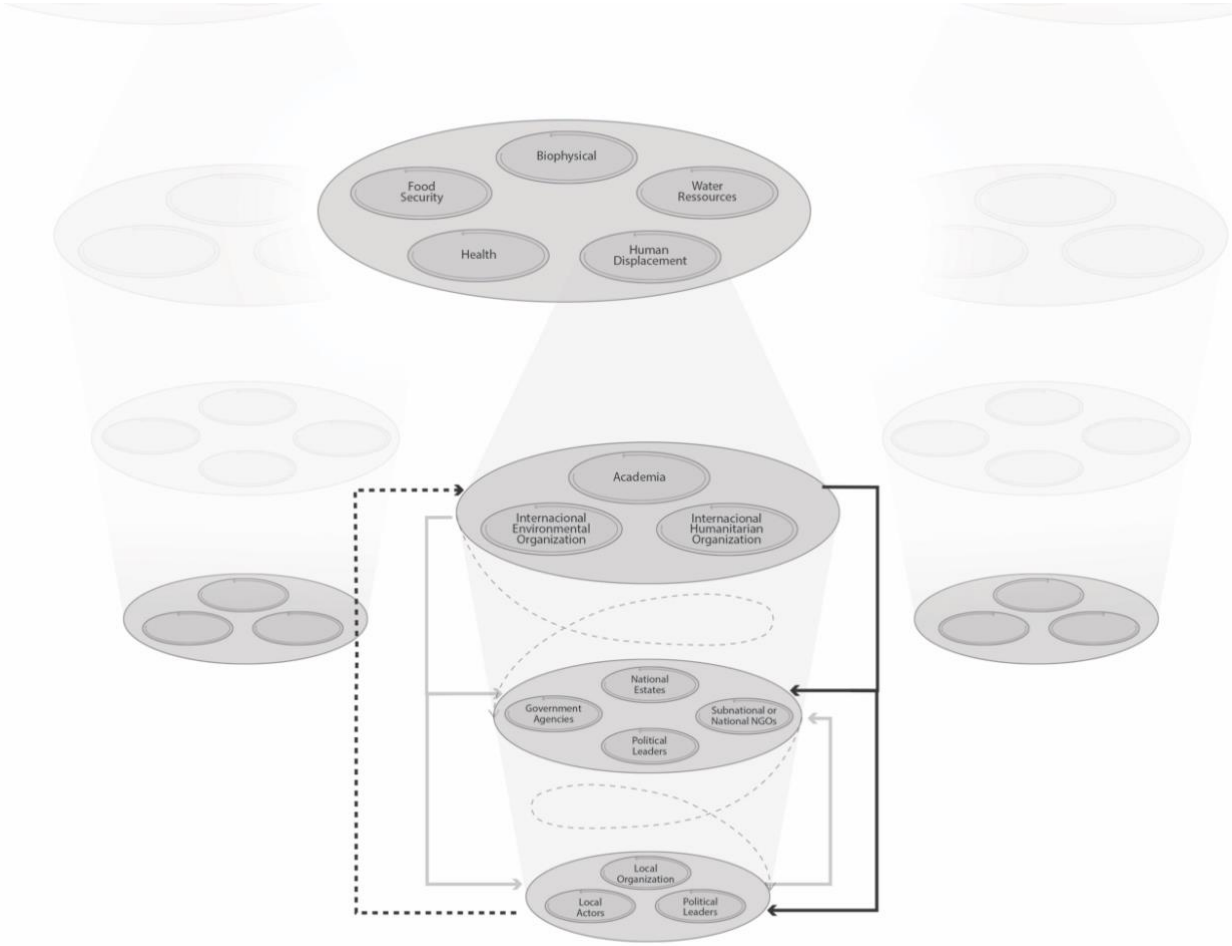
More than a change in the sense of urgency, it was a long period to reflect about what they were expecting as a result of the interactions into the global climate arena. This research considers that there was a change in their perspective about this process and their expectations, but there was not a change in their wills, as it seems at first glance. Local actors have never *wanted* to move, they always have strong connection to their land and culture, that moving was not in their plans. But, convinced by their lived experience, and the media and science narratives that the changes were gradually more intense and they would probably vanish under water in some decades, forcing them to star the main role of villagers struggling as their island is sinking (Ganga 2015) they voted to be relocated instead of living with the threat of disappearing.

However, noticing the lack of effective and urgent actions to stop these changes, they changed their strategy of action. Waiting for external action, being victims of a tragedy, which control is not with them was not what the empirical research faced 15 years after the 2002 voting process. Their narrative now is not in concordance with what great part of the media and part of science have been producing since 1985. Their current argument is recovering agency for local actors into the different levels of action in the global climate arena. They are advocating for what they always wanted: the *right* of living where they feel comfortable and where they feel themselves, connected to ice environment, and to their cultural values and habits. Climate change has been posing an existential threat to cultures that are embedded in ice and snow. If the ice conditions change abruptly or if the ice wanes, the traditional cultural knowledge that has been passed for centuries loses its meaning and Shishmaref people lose the right to be themselves.

Local actors do not want external help and funding to be relocated elsewhere and be the ones who must adapt climate change. They advocate for external actors acting towards the roots of climate change causes, which is considered by them the most important way to mitigate the problem of climate change and human displacement. Nonetheless, as it was supposed in the first moment of this research, the gap of influence is not from the national level to local level. The first assumption was assuming that there wouldn't have enough flux of relations and influence from actors in the national level (government agencies, national states, national or subnational NGOs, political leaders) towards the demands from local actors. But what the empirical data showed, was a great articulation among local actors, regional agencies and national actors, advocating for their demands since the first voting process in Shishmaref.

However, local actors realized that acting within a mainstream narrative that has not been supportive and attentive to local voices has not come up with an effective solution. It is argued here (Figure 5) that this gap of relations, information, influence and action is rooted in the broader level of global climate change and human displacement, where the global knowledge production takes place and spread narratives widely used to inform global environmental governance and define policy relevance.

FIGURE 5: RETHINKING GLOBAL CLIMATE ARENA



Source: elaborated by authors.

This figure shows that the flux of action, influence, relations and information is not quite nested as it was assumed in the beginning of this research (figure 3). To push action towards their demands, local actors are highly articulated locally and regionally mobilizing global scientific knowledge. Though, mobilizing detached categories and narratives that keep on defining them as victims or threats is not acceptable by them anymore. There was a gap on global level providing global scale scientific information to the negotiation and decision-making process, with less awareness about scaling up knowledge of local actors, spreading decontextualized worldviews and results. Furthermore, as already mentioned by the Denali commission employee interview, the local perception about the scientific production about their liminal condition that the data "is often unavailable or incomplete". Thus, realizing the side

effects of this kind of narratives, the local actors were pushed to rethink their strategies to have their demands met.

This reflection pushed the necessity of understanding global categories of *environmental* and *climate refugees*, coined and developed since 1980s and 1990s, as part of the environmental knowledge production. Relevant categories are not neutral acts of translation, but an intervention where knowledge not only represents, but at the same time also constitutes these categories as objects amenable for governance (Turnhout et al 2015). Its abstractness could help policy-makers and the majority of the general-public to understand and to start caring about climate change and the human displacement issue, approaching climate as a single, interconnected, physical system. However, not focusing on giving policy-makers more regionalized information, attempting to fit local realities to relevant (but also frequently detached and decontextualized) categories could end up alienating local people and their diverse ways of knowing and living with climate change, sidelining the diversity and specificities of values, adaptation efforts and risk perceptions of people around the globe. Because of this most forms of environmental knowledge were often not seen as very powerful in that more restrictive sense of whether policy makers listen to what scientists have to say (Callison 2014).

In the first moment of Shishmaref voting process, mobilizing global categories through media and global environmental knowledge through science products helped local actors to be listened by others at the center of decision-making process, showing its connection with broader concerns. Yet, the same abstractness may also paralyze collective actions regarding local demands, where particularities are several and do not fit into global patterns of mitigation or adaptation. These categories were developed to talk about 'the most advanced human crises of contemporary world' (Myers 1993; 1997; 2002; Westing 1992; Biermann and Boas 2010), disregarding the fact that few local situations are able to precisely fit into them, that the concept definition was not a correspondent of realities, which is undermining the legal support of an issue without a suitable strict subject. That is, categories' potential for informing and catalyzing effective action on the ground may in fact be very limited due to an essential characteristic of objective science.

Thereby, calls for evermore complete, standardized and globalized environmental knowledge are increasingly met with criticism due to its questionable relevance and implication in local levels through meaningful policy-making actions. To overcome this gap of narratives and flux of influence and relation the research could identify a change in local narratives and

action strategies from the first moments that the issue of climate change impacting human displacement came about, to the ongoing situation of Shishmaref process. Currently, local actors do not accept detached categories, and do not make alliances with those who interpret them as refugees anymore. They advocate for their right to be inserted into the global climate arena as political subjects, trying to influence decision-making about their own future according to their own demands. Now, their narrative is talking about their rights to be located where they traditionally live, they advocate for their right to keep their worldview as a possible outcome of this arena decision: dispersing into several places or being guests in a strange urban city is not an option. According to Watt-Cloutier (2015), Arctic actors facing climate human displacement realities rearticulated their own identities as sovereign peoples with innate rights to territory and identity.

The local alliances are counting less on the media alarmist narrative, and have been focusing on connections with pragmatic realities similar to Shishmaref, but far from there. Recently, Shishmaref has been going beyond regional articulations with other native rural communities in Alaska or to the regional organizations such as the ICC-Alaska, Kawerak or Denali Commission to push the scaling-up process of their demands into the arena. Shishmaref is establishing connections with political leaders, local organizations and local actors from Pacific Islands, other Arctic countries, other island nations to empower themselves pushing the actors in the other levels of global climate arena. For instance, the youth leader Easeu Sinnok, from Shishmaref, was nominated as an Arctic Youth Ambassador, which allowed him to attend the United Nations Climate Change Negotiations (COP21) in Paris, in 2015. There, as leadership, he stablished connections with other youth leaders from small island nations and sub-national organizations from other parts of the world, debating their realities and to do climate advocacy work, connecting their experiences lived all over the globe.

These borderless alliances also extend to new scientific productions, mainly from researchers who have empirical research on fieldwork, which has brought to the fore a new vision of the importance of the voice and the agency of people living the consequences and the results of the global climate arena. The upcoming strategy to overcome the gaps in understanding is not to leave the connection with academia, political leaders, international development organizations or human, international environmental organizations; nor even grant control of decisions about the future of communities and nations impacted by climate change exclusively for external actors. The current strategy is a change of narratives that is able to leave the victimization of *refugeeism* narratives, and adopt an open eye for acting towards

local demands: focusing more in the mitigation of climate change causes than in the migration as adaptation. McNamara and Gibson (2009) studies present Pacific ambassadors at the United Nations point of view, who advocate that:

> focusing on migration instead of mitigation was not only defeatist but a globally irresponsible vision for the future. (…) In this light, the issue of relocation as a result of the impacts of climate change was considered imprudent given that means to mitigate greater future impacts ought to be the highest priority (McNamara and Gibson 2009: 480).

Science as a means with two ends

The research has been showing that global environmental knowledge about climate change and human displacement influences a power relation with double face. That is, it helps local groups to make sense, giving reasons to policy-makers to care about their demands, putting themselves in other stages of negotiations. They actually use it to relate what is going on there with what other parts of the world are also experiencing, such as other native communities through Alaska and the Arctic; Kiribati and other Pacific Islands; among others. Mobilizing climate change knowledge enables to find a common ground problem all over the world, showing that "what happened there does not stay there"[14], showing that they are connected with other localities due to their same experiences. According to Jonsdottir (2013), many local communities are realizing how framing their development challenges in terms of climate change conceptualization and the need to address those challenges in terms of climate change adaptation, can facilitate access to new social networks, spaces of action, and funding streams.

However, when translated to categories by this global center of knowledge production most forms of global environmental knowledge are often not seen as very powerful in its guidance role for environmental governance (Turnhout et al 2015). Local social groups are not represented by the categories, which ends up diminishing their power to influence on their own future and paralyzing ground actions. Categories are so detached and decontextualized, not

[14] This is a slogan often used by advocates of native communities in the Arctic. To better understand, check: Ulmer (2013); Watt-Cloutier (2015).

representing local main goals that they prefer to not mobilize them as part of their strategies to be listened[15]. Climate *refugeeism* categories as part of global knowledge narrative do have limited potential for ground action, not helping social groups to leave this liminal condition of not having a safe and meaningful place to belong to.

The research findings were somewhat contrary to initial expectations, which were considering the local actors under the umbrella of *refugeeism* categories to widen their influence in the arena. The research could identify that the subject category of 'climate/environmental refugees' was strongly resisted by Shishmaref people and other communities around the world – even when this position brought with it the risk of alienating sympathetic activists and NGOs (who held similarly critical views about the contribution of the industrial West to climate change), and risked limiting possible future legal recognition of their human rights. At the Farbotko and Lazrus (2012) study about Tuvalu reality facing climate change challenges for migration, the dominant version of climate change also rejects the image and the reductionism of the climate/environmental refugees' categories. The prospect of migration coupled with a designation as refugee is perceived as denying Tuvaluans the right to a subjectivity and voice as an equal citizen of the global community. The authors highlighted a call from Tuvaluan civil society for a reframing of the debate on the future of their country in terms of human rights and global citizenship.

Thus, in Shishmaref local actors dismissed alarmist media and scientific narratives born in 1980s and broadly used until today, but still use science production as a resource to widen their influence in the arena. Local actors continue adopting scientific knowledge, but now mobilizing the scientific products that consider them as political subjects, showing their connection to other realities. Being connected is part of their strategy, which aims to put them in the same stage (action situation) of negotiation about their future, along with different actors in multi-levels (state and federal governments, international and national agencies, etc.) and different power of influencing the decision about human displacement. That is, being connected makes their voices louder. It is not just a common problem, but also a common way to translate them that helps social groups such as Shishmaref to be talking about their demands to the center of knowledge production and international and national policy-making agencies. Speaking with

[15] This could be realized by the analysis of the Shishmaref Local Economic Development Plan (2013-2018), where the rejection of the term relocation is explicit and the term refugee does not appear once.

one voice, keeping local particularities, was a political strategy to highlight their hazardous condition as a social group living in an at-risk place, empowering themselves through the influence of the moral sense of the world. “We didn’t have economic power, political power or military power, but we had the power of influencing the conscience of the world (…) Weakness, it seemed, generated another kind of strength (Leo Heilman, Myer's advisor in Geneva apud Hughes, 2013: 575)”.

This connection imagery allows us to be more conscious of interdependency of societies globally and the cross-scale assemblages, perceiving that a common problem could connect people and facts farther and stronger than their neighbors. So, it makes us questioning about our nested hierarchical way of scaling facts and relations (Crumley 1995), but also shifts our attention from the panic of catastrophe to the empowerment and action due to our interconnections. Thus, analyzing global categories produced based on global environmental knowledge regarding climate change and human displacement raised the opportunity to rethink globalized knowledge and its implications in local level agency and policies. Focusing on how local actors mobilize this global environmental knowledge enabled the research pointing to a local strategy to exercise power and make their voices louder in an urgent context of collective action. Citing McNamara and Gibson (2009) studies of Pacific ambassadors at the United Nations talking about climate change and human displacement, an ambassador said that what is needed to effectively change the phenomenon is political leadership and good will: “Nobody would die from that, it is only a matter of re-allocating and shifting economic focus to other sectors and everybody would benefit.” (p. 479), it is necessary to accept that we are all part of an international community, with local particularities, but with global challenges.

Conclusions

As mentioned by Fartboko and Lazrus (2012), climate change is both a narrative and material phenomenon. According to them, to fully understand its effects, analysts must integrate perspectives, values and knowledge of the people who live in climate change affected places along with the biophysical changes occurring. That is, understanding climate change requires broad conceptualizations that incorporate multiple voices and recognize the agency of vulnerable populations. So here, considering the arena conceptual-analytical tool suitable, the

dynamism of the negotiating processes among different levels and actors regarding climate displaced peoples was analyzed to understand to which extent global knowledge and the production of global categories influence local actors' strategies in the decision-making arena.

This conceptual-analytical tool was considered reasonable even when the research assumptions were dismissed. It was supposed that I would see conflict among local actors who would be for and against the relocation, and I would analyze the social tensions in this local level of decision. However, the local level was much less troubled than I had ever thought before I stepped on Shishmaref. The social tensions were not placed in the local level, but in the other levels. So, because arena idea allows us to see the different levels of action, it was acceptable to rearticulate the research focus from the local relocation decision process to the broader problematic of climate human displacement realities regarding local identities as sovereign peoples with innate rights to territory.

Besides that, because it is not a reproduction theory, such as the field concept of Bourdieu (Bachiega and Ferreira 2014), arena conceptual-analytical tool allows us to see the contingency of the decision-making process and the actors' agency. We cannot deceive ourselves with the dichotomy: in empirical reality there is no arena or no field. Given the circumstances and emergencies of conflicts and collective action, it may be more appropriate to speak about and use the arena approach or more appropriately to speak about and use the field approach to have a more adequate understanding of reality in its complexity. Here, the theoretical approach of arena was chosen, because it is important to see the changes and transformations of actors' behaviors, expectations and strategies along the years.

Arena framework also does not neglect the procedural characteristic of the arena, considering the temporal scale as well, valuing the historical process of its structuring. With so, this characteristic was central to allow the analysis of the differences and evolution from different moments of global climate arena: on one hand, the first one based on *refugeeism* narratives, with nested flux of influence and relations; on the other hand, the more recently picture of the global climate arena can show us a process with emerging narratives, influencing a reframing of the debate on the future of local realities in terms of human rights and global citizenship.

Another highlighted point that was identified due to climate arena analysis is about the organization of the Arctic peoples attempting to overcome gaps of narratives and flux of influence and relation. As this chapter has pointed, these social groups have been strongly articulated between them and also internationally through the mobilization of new narrative

guiding action strategies. Rearticulating their identities and narratives as sovereign peoples with territory and identity rights reveals that Arctic actors have been stablishing alliances and flux of influence that do not depend strictly upon the central state government. These actors have been organized in a self-centered way in the peoples of the Arctic and people elsewhere facing the dilemma of climate displacements to move towards a sustainable societies. They have insertion into the political system, but not necessarily having state intermediation.

REFERENCES

AUGUSTENBORG, C. 2016. Shishmaref Climate Refugees Relocation - A sociological tipping point in Arctic Alaska. *Ecologist*. https://theecologist.org (available on 03.19.19)

BACCHIEGGA, F. e FERREIRA, L. 2014. Uma análise das aproximações e distanciamentos epistemológicos das noções de campo em P. Bourdieu e de arena em E. Ostrom. *Diálogos* (Maringá. Online), v. 18, supl. Espec., p. 49-66, dez./2014.

BIERMANN, F.; BOAS, I. 2010. Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees. *Global Environmental Politics*, ed. 1, vol. 10.

BRONEN, R. 2009. Forced Migration of Alaskan Indigenous Communities due to Climate Change: Creating A Human Rights Response. In: *Linking Environmental Change, Migration & Social Vulnerability*, edited by Anthony Oliver-Smith. Bonn: UNU Institute for Environmental and Human Security (UNC-EHS). America's Climate Choices: Adapting to the Impacts of Climate Change. https://www.researchgate.net/publication/236444520_America%27s_Climate_Choices_Adapting_to_the_Impacts_of_Climate_Change (available on 05/24/2017)

BRONEN, Robin. 2013. *Climate-Induced displacement of Alaska Native Communities*. Alaskan Immigration Justice Project. January 30, 2013. http://www.brookings.edu/~/media/research/files/papers/2013/1/30-arctic-alaska-bronen/30-climate-alaska-bronen-paper.pdf (available on 10/19/2015)

CALDENHOF, S. 2013.*Mudanças sociais, conflitos e instituições na Amazônia: os casos do Parque Nacional do Jaú e da Reserva Extrativista do Rio Unini*. Campinas, SP : [s. n.].

CALVIMONTES, J. 2013.*Bandidos na Serra do Mar? Conflitos, estratégias e usos múltiplos dos recursos naturais na Mata Atlântica, São Paulo*. Campinas, São Paulo: [s.n.].

CALLISON, C. 2014. *How Climate Change Comes to Matter: the communal life of facts*. USA: Duke University Press.

CLARK, W. 2008. Social and political contexts of conflict. This article is an edited version of a longer article of the same title prepared for the German Advisory Council on Global Change (WBGU), published in *Climate Change as a Security Risk*, Earthscan, London and Sterling VA.

CRUMLEY, C. 1995. Heterarchy and the Analysis of Complex Societies. In: R. Ehrenreich, C. Crumley and J. Levy (editors) *Heterarchy and the analysis of Complex Societies.* Arlington, Virginia: the American Anthropological Association.DECARO, D. 2011. Considering a Broader View of Power, Participation, and Social Justice in the Ostrom Institutional Analysis Framework. *Grassroots Economic Organizing (GEO) Newsletter*, Volume 2, Issue 9. http://geo.coop/node/651 (available on 05/24/2017).

FARBOTKO, C. ; LAZRUS, H. The first climate refugees? Contesting global narratives of climate change in Tuvalu. *Global Environmental Change* 22 (2012) 382–390.

FEITAL, M. S. 2016. *Conflitos e arenas decisórias de grandes projetos de infraestrutura: uma discussão do Porto de São Sebastião – São Paulo – Brasil*. Jundiaí: Paco Editorial.

FERREIRA, L. *et al*. 2007. Encontro das Águas: Dinâmicas Sociais e Biodiversidade na Amazônia Brasileira. In: *TEORIA & PESQUISA – Revista de Ciências Sociais*. Vol. XVI n.01 jan/jun de 2007.

FERREIRA, Lúcia. (coord.); JOLY, C.; FERREIRA, Leila; CARMO, R. 2012. *Urban Growth, Vulnerability and Adaptation: Social and Ecological Dimensions of Climate Change on the*

Coast of São Paulo. Research Project – FAPESP Program on Global Climate Change. Process 2008/58159-7. Julho de 2011 a agosto de 2012.

FERREIRA, L.C. ; CALVIMONTES, J. ; GIULIO, G. M. ; VIGLIO, J. E. ; ARAOS, L. F. . Conflictos entre expansión urbana y cobertura vegetal y sus consecuencias para los ambientales globales: un estudio en el litoral del estado de São paulo, Brasil. In: Lúcia da Costa Ferreira; Luísa Schmidt; Mercedes Pardo Buendía; Jorge Calvimontes;José Eduardo Viglio. (Org.). *Clima de tensão: ação humana, biodiversidade e mudanças climáticas.* 1ed.CAMPINAS: Editora da Unicamp, 2017, v. , p. 29-54.

FITZGERALD, O. and WATT-CLOUTIER, S. 2018. Humanizing Climate Change: A Conversation with Sheila Watt-Cloutier. Available at https://www.cigionline.org/articles/humanizing-climate-change-conversation-sheila-watt-cloutier (available on 02.12.2019)

GANGA, M. 2015. This is climate change: Alaskan villagers struggle as island is chewed up by the sea. AUG 30, 2015 | 3:00 AM | KIVALINA, ALASKA. *Los Angeles Times*. https://www.latimes.com/nation/la-na-arctic-obama-20150830-story.html (available on 03.19.19)

GOLDENBERG, S. 2013ª. America's first climate refugees – Newtok, Alaska is losing ground to the sea at a dangerous rate and for its residents, exile is inevitable. *The Guardian* https://www.theguardian.com/environment/interactive/2013/may/13/newtok-alaska-climate-change-refugees (available on 23/05/2017)

HANNIGAN, J.A. 1995. *Environmental Sociology : a social constructionist perspective.* London and New York: Routledge.

HARTMANN, B. 2010. Rethinking Climate Refugees And Climate Conflict: Rhetoric, Reality And The Politics Of Policy Discourse. *Journal Of International Development*, ed. 2, vol. 22.

HERRMANN, V. 2017. America's first climate change refugees: Victimization, distancing, and disempowerment in journalistic storytelling. *Energy Research & Social Science* 31 (2017) 205–214.

JAMES, D. 2016. More than global warming afflicts endangered Shishmaref. *AND.* https://www.adn.com/books/article/more-global-warming-afflicts-endangered-shishmaref/2016/03/27/ (available on 02.13.2019)

JONSDOTTIR, I. 2013. "Scaling Climate: the politics of anticipation" in *The social Life of Climate change Models: anticipating nature*, ed K Hastrup and M. Skydstrup, New York: Routledge.

KOESTLER, A. 1990. (first edition 1967) *The Ghost in the Machine*. Arkansas: Arkana.

KOLBERT, E. 2015. *Field notes from a catastrophe: man, nature and climate change.* Bloomsbury, USA: Bloomsbury Publishing Plc.

LECEY, J. AND BEATTY, K. 2012. Representative Literature Reviews Using Constrained Snowball Sampling and Citation Network Analysis Available at SSRN: https://ssrn.com/abstract=1992601 or http://dx.doi.org/10.2139/ssrn.1992601 (available on 02.12.2019)

LOWE, T. 2006. *Is this Climate Porn? How does climate change communication affect our perception and behavior?* Tyndall Centre Working Paper 98. Norwich, UK: University of East Anglia.

MARINO, E. 2012. The long history of environmental migration: Assessing vulnerability construction and obstacles to successful relocation in Shishmaref, Alaska. *Global Environmental Change* 22 (2012) 374–381

MARINO, E. 2015. *Fierce Climate, Sacred Ground: an Ethnography of Climate Change*. Fairbanks, Alaska: University of Alaska Press.

MARINO, E., & LAZRUS, H. 2015. Migration or Forced Displacement?: The Complex Choices of Climate Change and Disaster Migrants in Shishmaref, Alaska and Nanumea, Tuvalu. *Human Organization*. November 2015, DOI: 10.17730/0018-7259-74.4.341

MARINO, E. & RIBOT, J. 2012. Adding Insult to Injury: Climate Change, Social Stratification, and the Inequities of Intervention, an Introduction. *Global Environmental Change***,** 22/2:323-328.

MCGINNIS, M. D. An Introduction to IAD and the Language of the Ostrom Workshop: A Simple Guide to a Complex Framework. *The Policy Studies Journal*, Vol. 39, No. 1, 2011

MCNAMARA, E. 2007. Conceptualizing discourses on environmental refugees at the United Nations. *Population and Environment*. 29:12–24 DOI 10.1007/s11111-007-0058-1

MCNAMARA, K.; GIBSON, C. 2009. We do not want to leave our land': Pacific ambassadors at the United Nations resist the category of 'climate refugees'. Geoforum, ed. 3, vol. 40.

MYERS, N. 1997. *Environmental Refugees*. Population and Environment, Ed. 1, Vol. 19

MYERS, N. 1993. Environmental refugees in a globally warmed world, in: *Bioscience* 43: 752–61

MYERS, N. 2002. Environmental refugees: a growing phenomenon of the 21st century *Philosophical Transactions Of The Royal Society Of London Series B-Biological Sciences*, ed. 1420, vol. 357.

OSTROM, E. 2011. Background on the Institutional Analysis and Development Framework. *The Policy Studies Journal*, Vol. 39, No. 1.

OSTROM, E. 2005. *Understanding Institutional Diversity*. Princeton: Princeton University Press.

OSTROM, E. 1990. *Governing The Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

RENN, O. 1992. The social arena concept of risk debates. In: KRIMSKY, S., GOLDING, D. (eds.). *Social Theories of Risk*, Preger, Westport, CT, p. 170-197.

RENN, O. 2008. *Risk Governance. Coping with Uncertainty in a Complex World***.** London: Earthscan.

RUIZ-BALLESTEROS, e. e BRONDIZIO, E. Building Negotiated Agreement: The Emergence of Community-Based Tourism in Floreana (Galápagos Islands). In: *Human Organizatio***n**, Vol. 72, No. 4, 2013

SASSEN, S. 2016a. *Expulsões: Brutalidade e complexidade na economia global*. Rio de Janeiro e São Paulo: Paz e Terra.

SHEPPARD, K. 2014. Climate Change Takes A Village – as the planet warms, a remote Alaskan town shows just how unprepared we are. *Huffington Post*. 14 de Dezembro de 2014. http://www.huffpostbrasil.com/entry/shishmaref-alaska-climate-change-relocation_n_6296516 (available on 05/23/2017)

SHISHMAREF LOCAL ECONOMIC DEVELOPMENT PLAN (2013-2018). Elaborado por: The Community of Shishmaref e The Bering Strait Development Council. http://www.kawerak.org/ledps/shishmaref.pdf (acessado em 23/05/2017)

TURNHOUT, E.; DEWULF, A.; HULME, M. 2016. What does policy-relevant global environmental knowledge do? The cases of climate and biodiversity. *Current Opinion in Environmental Sustainability*. 18:65–72.

U.S. ARMY CORPS OF ENGINEERS. 2004. *Alaska Baseline Erosion Assessment*. AVETA Report Summary – Shishmaref, Alaska.

UNITED STATES GOVERNMENT ACCOUNTABILITY OFFICE (GAO). 2009. *Alaska Native Villages: Limited Progress Has Been Made on Relocating Villages Threatened by Flooding and Erosion***.** http://www.gao.gov/products/GAO-09-551 (available on 05/23/2017)

WARNER, K., EHRHART, C., DE SHERBININ, A., ADAMO, S., CHAI-ONN, T., 2009. In Search of Shelter: Mapping the Effects of Climate Change on Human Migration and Displacement. *Care International*, CIESIN Columbia University, UNHCR, UNU-EHS, World Bank.

WESTING, A. 1992. Environmental refugees – a growing category of displaced persons. *Environmental Conservation*. Ed. 3, vol. 19.

WOLSKO, C.; MARINO, E. 2016. Disasters, migrations, and the unintended consequences of urbanization: What's the harm in getting out of harm's way? *Population and Environment* 37:411–428 DOI 10.1007/s11111-015-0248-1

CHAPTER 3

CLIMATE AND CULTURE: THINKING HOW NEW CLIMATE HAS BEEN SHAPING SOCIETIES

Abstract

Climate change has been causing very rapid transformations, not just regarding biophysical impacts of a warmer planet (such as desertification, droughts, extreme events, sea level rising, and the like). But the new climate pattern has also been causing fast changes regarding culture, social behavior and values – especially among those who are currently living climate consequences in their daily lives. This chapter reflects on what this reality of new challenges and new patterns posed by climate change has been teaching us about our societies. It questions if the narratives about climate change and climate displaced people are influencing the way people have been interacting, behaving and establishing relations. To develop this problematization, this chapter is based on literature review, and fieldwork with participatory observation and semi-structured interviews in Shishmaref – Alaska. This exemplary case was chosen due to its historical importance on discussion about the nexus of climate change-culture. The chapter draws attention to the fact that it is not possible to cope with climate change if we ignore that it is interconnected within a web of other ongoing dynamics that shape society. Shishmaref proves that culture and climate change are intertwined in the definition of their vulnerability, which is not just part of physical impacts, but it is also part of a historical process of cultural erosion due to a power relation caused by the colonialism mindset. This power relation defining the way people act towards climate change is not restrict to traditional communities facing colonialism process. It is also seen in global knowledge production, which is a key part of the problem solution.

Keywords: climate change; culture; power relations; knowledge production

INTRODUCTION

Climate change has been considered one of the most important issues of the contemporary century, due to its rapid consequences affecting the globe. Desertification, droughts, sea level rising, extreme temperatures, harmful disasters are some of the biophysical impacts examples of how the planet is reacting to a new climate pattern. These impacts have been calling attention to a phenomenon considered very often as a major crisis of the century (Myers 1993). Not undermining the majesty of these physical consequences, this chapter argues that climate change has also been an opportunity to rethink the web of other ongoing dynamics that shape society and must be part of climate change solution. Because the new climate standard has been causing fast changes regarding ecosystems, culture, social behavior and values – especially among those who are currently living climate consequences in their daily lives.

The argument here is that the environmental and climate change impacts are channeled through social, economic and political factors (Clark 2008; Hunter et al 2015) in a complex assemblage of connections. Thus, this chapter questions about how climate change can be a powerful source of culture transformation, altering people's livelihood strategies and modes of interaction. It also struggles to think about what this reality of new challenges and new patterns posed by climate change has been teaching us about our societies, and about the historical power relations which, intertwined, are defining climate responses. When I propose the idea to study culture transformation in a liminal condition community it is not my intention to depict the classic anthropological theme of social change. It is not the intention of this research to unfold a neoevolutionism theory, western-centered, about how a social group is leaving a traditional livelihood to become a modern society. There is no evolutionary cast, but a

motivation to understand how a global environmental change can influence our way to interact and establish relations.

Regarding the issue of human displacement caused by climate change is particularly important to debate the nexus of climate change and culture. At the beginning of the studies about migration related to environmental changes, concepts such as environmental/climate refugees faced several difficulties to define this issue. On the one hand, e*nvironmental refugees* used to describe people who have been forced to leave their traditional housing, temporarily or permanently, because of a marked environmental event (with human or natural causes), endangering their existence or seriously affecting their life quality (El-Hinnawi 1985). On the other hand, later *climate refugees* term defines people who have to leave their habitats, immediately or in the near future, because of sudden or gradual alterations in their natural environment related to at least one of three impacts of climate change: sea-level rise, extreme weather events, and drought and water scarcity (Biermann and Boas 2010). These concepts were widely used by some academics, politicians and media. However, focusing on a single cause of displacement, these terms aroused several criticisms due to their monocausal character, being considered simplistic and unilateral (Black 2001; Piguet 2008), focusing entirely on environmental drivers, such as a natural disaster or a gradual slow-onset impact, ignores the role of political and economic drivers of migration (Oliver-Smith 2012). That is, these concepts do not consider that the relationship between extreme environmental event and human displacement is not so linear and direct: being considered a potential displaced group has also to do with a historical product of multi-causal linkages. Vulnerability and resilience related to climate change go beyond the biophysical impacts on the ground, and so do the consequences and solutions for this dilemma.

Therefore, this chapter is written in concordance with Dove and Barnes' holistic view of society and the environment (2015).

> Such a holistic view situates climate change within a broader set of contextual relations and highlights the fact that climate change can only ever be one of a number of influences on people's social lives. (…) Hence, climate change is inevitably accompanied everywhere by other kinds of changes within society (Yager, this volume). While climate is sometimes the dominant factor driving change at a given time and place, it is often outweighed by other factors (Barnes, this volume) (Dove and Barnes 2015: 9).

The chapter draws attention to the fact that it is not possible to cope with climate change if we ignore that it is interconnected within a web of other ongoing dynamics that shape society. Thus, to develop the problematic proposed here, besides the literature review, concerning climate change and human displacement issue, this chapter based its arguments on an exemplary case, where the fieldwork took place in August 2017: Shishmaref (Figure 1), an Inupiat native community set in a barrier island in rural Alaska. The Arctic has been warming twice as fast as the rest of the globe (Environmental Protection Agency [EPA] 2016). And the Inupiat people, who rely economic and culturally on Arctic icy environment, have been threatened by the new patterns of a warmer globe. This is a clear reason why this case was chosen due to its historical importance on climate change debate and on discussion about the nexus of climate change-culture and -human displacement. It demonstrated that culture and climate change are intertwined in the definition of their vulnerability, which is not just part of physical impacts eroding their coast, but it is also part of a historical process of cultural erosion due to a power relation caused by the colonialism mindset. Because of this, Shishmaref people have a lot to tell us about climate change and its consequence.

FIGURE 1: COASTLINE IN SHISHMAREF

Source: Author's collection taken in August 2017.

Thus, this chapter is organized as follows: after briefly presenting the method, the exemplary case will be described. With this, how Shishmaref historical process of colonialism has been interconnected to its vulnerability and responses related to climate change will be discussed. Then, the argument that this power relation defining the way people act towards climate change is not restrict to traditional communities facing colonialism processes will be developed. It is also seen in global knowledge production, which is a key part of the problem and understanding, this is part of its solution.

Methods

This research was based on a literature review and a content analysis of local and international media material about climate displaced people, using key terms such as: "climate change", "migration", "refugees", "human displacement", "arena", "decision-making process" and terms directly related to the empirical case, such as: "Shishmaref", "Arctic", "Alaska", "coastal erosion" and the like. The material was gathered into seed articles[16] in different journals, scientific reports and books, and also in some local and international media material, adopting a snowball approach to gather this material, building a citation network through this (Lecey and Beatty 2012). That is, an important article cites another relevant article which conducts the research to have access to last one as well it. This was an important methodological step, because it allows us to: 1) put concepts and categories in debate in order to question them in the light of the local realities and historical contexts; 2) get closer to the case chosen before the fieldwork; 3) identify and connect different actors, involved in a web of power relations; 4) bridge the empirical research with other similar realities all over the world, with different contexts but being part of the same global climate arena.

The fieldwork was conducted in August 2017, and it lasted about four weeks. It took place in Anchorage, the most populous city in Alaska and where some of the international and subnational organizations are placed; and in Shishmaref and Nome, both in rural Alaska. The methods used were participant observation and semi-structured interviews with local actors and with representatives of regional agencies: 1) in Anchorage, interviews were conducted at Inuit Circumpolar Circle (ICC-Alaska), which is a non-profit organization representing Inuit people across the Arctic parts of Alaska, Canada, Russia and Greenland, strengthening unity and rights among Inuit on issues of common concern; 2) in Nome, at Kawerak, regional non-profit corporation which main goal is to assist Alaska Native people and their governing bodies to take control of their future, providing services throughout the Bering Straits Region, ranging from education to transportation, and natural resource management to economic development; 3) in Shishmaref, I interacted with multiple people with various roles in the community, from

[16] The seed article selection starts with a knowledge domain – that is either possessed by the researcher herself or obtained through consultation with domain experts. The seeds include articles that are generally foundational or framing articles on a topic widely cited as a reference point for anyone doing research in the domain (Lecey and Beatty 2012).

the mayor and vice mayor to elderly people, from representatives of the Native Village of Shishmaref and Climate Change coordinator to teachers, assistants and students at Shishmaref School.

All of these interviews, totaling 18 formal interviews, were granted with the consent of the interviewees, and some were recorded in audio and some on field journal. Two written interviews were conducted later, in July 2018, to complete some information. One of them was made with a young community member and the other with a representative of Denali Commission – an independent federal agency designed to provide critical utilities, infrastructure, and economic support throughout Alaska, which pushes the Congress to acknowledge the need for increased inter-agency cooperation focusing on Alaska's remote communities. As part of the fieldwork, the informal conversations were also important, totaling 11 people, which were depicted on field journal. The real names will not be used here to safeguard the actors' identities; they will just be mentioned when the actor's statements were gathered from secondary material from media or other academic articles.

Granting human faces to climate change

When we read or listen about climate change in the Arctic, we usually come across idyllic images of polar ice caps melting and isolated polar bears on them. Statements saying that this region is warming faster than the rest of the globe and that the consequences of warmer Arctic will affect every other place, no matter where you live, because this is a region which helps to keep the world's climate balance (EPA 2016). Although these statements are crucial to understand the impacts of climate transformations, these narratives and imagery of a wild region dehumanize the Arctic.

A quick research on Google Images with the sentence "climate change in the Arctic" showed the dehumanization of this region. When analyzing the first 100 images, it was possible to perceive that only eight of them contained some human being portrayed; 21 graphics or maps and the others were framing polar bears and/or polar caps. This image search was done on www.google.com.br on February 7th 2019, in order to show the mainstream imagery one can

easily access[17]. Thus, it is ease to disregard the humans living in the Arctic environment, facing no future threats but a current reality of warmer planet consequences, such as coastal erosion, floods, declining fishing, and changes in wildlife migration routes (Bronen 2013; Marino 2012, 2015; and Oliver-Smith 2006). So, making the fieldwork was important to remember that when reading many reports and studies saying about water, land, permafrost melting, crops, there was a missing part: peoples' face[18]

Shishmaref: ancestral history of moving

Shishmaref is a native community based in a barrier island (Figure 2), called Sarichef, in rural Alaska. The island is surrounded by a national park of preservation and it is five miles off the coast of the Seward Peninsula, being the tip of the American side of the Bering Strait. There are approximately 600 Inupiat people living in Shishmaref, whose main livelihoods are directly related to the Arctic environment: hunting, fishing, picking, sewing and handcrafting (Shishmaref Local Economic Development Plan [SLEDP] 2013-2018). Their connection with the arctic environment is not just part of their livelihood, but also part of their identity. That is, the dynamic relation between society and environment also define the annual cycles of trips, celebrations and lifestyle. Hunting for this society, for example, is very important not only for subsistence, providing food for long periods of winter, but also for social life that is strengthened in society. According to the interviewees, when a large animal is hunted, there are processes of division and storage of its parts, which is carried out by certain groups of people, together, enhancing an important social living among them and a thoughtful way to interact with nature.

17 The research is aware of the biases this quick research on Google Images can carry, due to the algorithms in which Google ranking systems are based on to give results that are relevant to the researcher's search. But this is still an illustrative way to show that, even a researcher who is frequently looking for material about climate change, Arctic and human displacement have a dehumanized imagery of this reality.

18 This expression was used by Susan Crate on *The Anthropologist*, a documentary about currently studies on the impact of climate change and human displacement. To watch: *The Anthropologist* . Directed by S. Kramer, S et al. Ironbound Films, 2016.

FIGURE 2: SOUTH PART OF SARICHEF BARRIER ISLAND

Source: it is possible to see the ocean on the left and the lagoon on the right, realizing the narrowness of Sarichef island. Author's collection, taken in August 2017.

During the fieldwork I could notice that when I described my research interests and mentioned climate change, everyone had something to tell me, elders or young, natives or outsiders[19]. They could list many of the impacts going beyond the coastal erosion due to sea-level rising: the predictability of ice conditions is no longer reliable, endangering them during hunting journeys; the changes on animal's migration, as a result of the changes on sea temperatures, impacting on their livelihood; the winter season becoming shorter and shorter; the fall storms and flooding being more often and intense, and the like. The examples are many, and as the native people say, they could realize them in their daily routines, throughout their lives. This shows how fast things have been changing due to climate impacts: people, animals, plants, ice.

By the time this research has started, Shishmaref people had already voted three times to be relocated due to the coastal erosion issue intensified by climate change consequences (Shishmaref Strategic Management Plan 2016). Sarichef barrier island has been inhabited since early 1900's. The island was not a place their nomadic ancestors used to spend long periods, serving just as a camping site for several centuries, providing a safe space to hunt and fish during the winter. During the summer and the fall storms they could move to another fruitful and safer place. Since then, the best survival tool for Inupiat people has been always seasonal

19 This term "outsider" is used to describe those ones who are not from Shishimaref, nor from Inupiat culture. The "outsiders" I had contact were mainly Caucasian/white. Most of them were some school teachers and workers, who are the majority of this job position. I could realize that some other "outsiders" were there during our fieldwork: two journalists working about climate change in different countries in the Arctic; and an archeologist researcher team; who were there for a couple of days to expose some historical material.

migration. However, in the beginning of twentieth century, they were pushed to settle permanently in a territory because of the USA central government's education and health policies, which spread western schools and catholic churches over American territory. Sarichef island was chosen because it made a certain amount of sense: it is ideally located for winter hunting on sea ice and close enough to the mainland to access traditional subsistence grounds in summer. It was, however, always tenuous ground to build on (James 2016) and, back then, no one would know how climate change would accelerate process of erosion and storms. Besides, the transition from nomadism to fixed community was not evolutive nor linear, they still keep elements of nomadism in their behaviors and values since then.

The way of changes has been really fast, not just about climate, but also regarding culture. More than one interviewee told me about the tough and recent colonization process and the ideologies that came to stay. It is possible to see the benefits along with severe consequences of the "carrot and stick" approach of the colonialism in Shishmaref: school with outsider teachers, church, post office and clinic, two small groceries stores were built; snowmobiles were brought to help them on hunting journeys; and running water and heating systems were installed in some houses (Figure 3). Undoubted, those achievements provided some structure and opportunities for Shishmaref people.

FIGURE 3: SHISHMAREF FACILITIES

Source: 1, 2 and 3) groceries stores in Shishmaref; 4) Shishmaref school building; 5) the church; 6) Village Public Safety Office and a snowmobile. All the pictures were taken by the author during the fieldwork, in August 2017.

However, the damages it also brought for Inupiat culture are not questionable. For instance, as a teacher at Shishmaref School warned us (August, 2017): now local food is often combined with industrialized ones, causing many health problems about obesity, diabetes, cancer and teeth issues. Besides, they are becoming more and more dependent on fossil fuels to guarantee their transportation and house heating. But the most remarkable culture impact, related by some of the interviewees, is regarding to their language. Some of the research interviewees were kids when the school was built, and their culture started to be undermined. They remember when Inupiat language was forbidden in public places, being punished by teachers with a hit with a ruler, or washing their mouths with soap, making them scared to speak. As many native villages in Alaska, life there combines – often disconcertingly – the very ancient and the totally modern (Kolbert 2006).

The specialized knowledge needed to gather its own food in the Arctic and to move through the ice safely was built up over centuries, passed from person to person orally, as a tradition comes up. And as mentioned by Kelly Eningowuk, Executive Director from Inuit Circumpolar Circle – Alaska (Threshold 2018), one of the most painful aspects of the colonization process is the way it taught the community to devalue this expertise, causing shame and insecurity about themselves and their culture. Besides that, as Marino (2015) states, pushing the native communities to fix themselves in a territory was one of the biggest interferences from the central government in the local level capacity to adapt themselves to the climate change impact. This was not exclusive to Shishmaref's case, Hunter and collaborators (2015) state that there were several cases of colonization and state formation which brought efforts to sedentarize previously mobile groups that used migration as an adaptation to harsh environments. Therefore, along with the well-known impacts of colonization of native communities – diseases, racism, outsider education, alcoholism, political marginalization, change in land and resources distributions and ownership – Shishmaref is also dealing with climate change effects.

It is not unreal that Shishmaref is feeling the impacts of climate change, much more and in advance than the rest of great part of the world – but the village has been adapting and surviving ecological shifts for hundreds of years. Thus, this research agrees with Marino (2015): Shishmaref is a case that vulnerability is not just a matter of biophysical impacts; it is also a case of how sociopolitical aspects (i.e. the negligence, the inequalities) also define a minority group's fate. "Shishmaref demonstrates how the negative repercussion of climate change are predicated on the gross inequity present in the world today and constructed historically across time (Marino 2015: 16)".

This research is in line with Marino work (2015), which has questioned the hazard-centric vulnerability concept. Marino inquiries why some hazards are particularly problematic for some communities and less so for others. She argues that vulnerability is not just a matter of exposure, but it is associated with lack and/or the inequitable distribution of resources: such as economic and social capital. That is, vulnerability is considered an effect of social conditions intertwined to environmental conditions. Thus, Shishmaref is vulnerable because people live on an island that is eroding due to climate change impacts, but their condition is also tied to social relationships and historical resource distribution.

Climate change influencing culture: the burden of adaptation

Back to the climate change stories people have told me during the fieldwork, many mentioned the way climate is influencing their habits and the way they are establishing social ties. People mentioned how they are dealing with multi-factors far beyond the coastal erosion. The uncertainties about ice conditions and the animals changing their routes due to the changes in the water temperatures and the ice conditions were two of the most cited examples. Furthermore, the ice for Arctic native people represents mobility and transportation – when it does not form firmly enough or in the right moment, they cannot travel safely and gather food. This has changed their hunting and fishing journeys, which are becoming shorter and shorter and more and more risky. Men must travel much further and take much longer routes, which costs more money for fuel and supplies (Fitzgerald and Watt-Cloutier 2018). The case of Esau Sinnok's uncle, Norman, is remarkable and often cited when community talks about climate threatening their lives. Norman passed away coming from a hunting day, because he fell through the ice, which should be frozen in that period of the year, but it was not.

Hunting and fishing are male tasks in Shishmaref as in many other native communities. Men are having their social roles diminished, not because community members are not interested in hunting or fishing, but because of two factors: 1) culture transformation due to colonization consequences and 2) animals' migration patterns changing fast. On the one hand, women were usually responsible for house tasks: cooking, caring, berry picking, sewing and crafting. With the construction of the school and administration buildings, women were usually the ones who work on that activities inland, which remuneration is monetary. Thus, except for teacher's position (which is mainly occupied by outsiders), women run the most important leading position in the island and are the ones who are able to be inserted into the market system, contributing to decrease the male social function. On the other hand, during an interview, in a quiet day, a teacher from school told us (interview granted in August 2017) what she has been learning over the years living in Shishmaref: the male social function is decreasing more and more due to the changes in the eating habits and the difficulties to find hunting in an uncertain environment.

The reason the village was so silent on that day was the funeral of a teenage boy who had committed suicide few days earlier. That teacher explained us that even the Arctic having a higher tax of suicides in comparison to the other American states, this tax is more frequent among men, who are losing their sense of importance to the community and family. In an

interview to Oonagh Fitzgerald, who asked about how climate change has affected the experience of being Inupiat, Sheila Watt-Cloutier, an Inupiat environmental and human rights advocate, said:

> The ice is a very big part of our identity. It is our highway and a training ground that allows for us to train our children to become proficient providers and natural conservationists. But, the effects of colonialism have really negatively impacted the way of life in the Arctic. Communities experience a great deal of poverty and high suicide rates among youth. To me, that kind of trauma mirrors the violence that we are inflicting upon our planet. You can't separate human trauma and planet trauma; they are one and the same (Fitzgerald and Watt-Cloutier 2018).

It is not possible to talk about adaptation or climate change without thinking of culture. Climate change has been impacting social lives; people are being forced to adapt their traditions and centuries-old knowledge to survive. It is important to think about who gets asked to sacrifice in a warmer world. Who is adjusting habits, values and behaviors in order to cope with climate consequences? Even though Shishmaref community members I interviewed have never defined them as *victims* of impacts produced far away from there, they are the ones (not the only ones) who are being pushed to adjust, to move, to migrate, to transform. It is not that they are blaming someone or that they are unwilling to make changes. Instead, they also see themselves as part of what is happening, using fossil fuels or eating industrialized food (a native teacher told this during an interview granted in August 2017). In fact, the ability to adapt is a major value within their culture and they have a sense of pride about it. The frustration is the fact that the colonial mindset imposes changes and adaptation in only one direction: colonizer to colonized ones.

Joel Clement, former top climate policy official at the Department of Interior in the USA government, was mentioned by some interviewees because of his job helping endangered communities in Alaska to prepare for and adapt to a changing climate, being an intermediator in the Congress. Within Trump's administration, he believes he was retaliated against for speaking out publicly about the dangers that climate change poses to Alaska Native communities, trying to make the point that the USA government is disregarding at a basic responsibility of keeping their citizens safe.

> I believe that every president, regardless of party, has the right and responsibility to implement his policies. But that is not what is happening here. Putting citizens in harm's way isn't the president's right. Silencing civil

> servants, stifling science, squandering taxpayer money and spurning communities in the face of imminent danger have never made America great. (Clement 2017)

And it is an argument also raised by people in Shishmaref who collaborated with this research: some of them say they feel neglected by federal government and the policymakers in the other levels of action. Once a woman working in position of the City of Shishmaref told me: we are all Americans, as much as the others, but when an investment is demanded to infrastructure in big cities such as Chicago, Seattle, New York, the millions of dollars are directed by these needs. But when it is about Shishmaref or native communities in Alaska, this does not happen. Thus, "it is not a new phenomenon in Shishmaref. Ignoring the voices of Inupiat people in this growing climate change crisis is just one more example of the way they have been treated: as colonial subjects than true citizens" Kelly Eningowuk, (Threshold 2018).

Therefore, Shishmaref proves that it is not just climate change or colonization that put the community at risk, but the worldview that produces them both and the way they are interacting together. The core is to understand that climate change is part of a number of ongoing dynamics that shape society (Barnes and Dove 2015), and also understand how all of these dynamics are interconnected. It does not make sense to figure Arctic conservation with a polar bear struggling to survive in the middle of melting ice caps without understanding that besides being a wild region, it is also a human region, or without remembering that humans are part of the environment. Adaptation to climate change depends on understanding that the burden of adaptation cannot be carried by just some groups. It depends on the ability to understand that all of those dynamics are interconnected and all of us are part of the same environment.

Colonial mindset regarding science

An assumption of this research is that there is a dual relation between global production of environmental knowledge and environmental governance. That is, knowledge production is based on governance issues that need to be addressed, and its intention is to influence relevant policy-making intending to deal with grounded problems. Considering climate change as a multi-causal linkage in interaction with a number of others ongoing dynamics, it is considered

important to understand the power relations regarding global knowledge production about climate change. Thus, studying the literature about climate change and human displacement (through the bibliometric research in Chapter 1 in this volume and through literature review) allowed me to understand two different sets of power relations linked to global knowledge production. What is argued here is that solving climate change issues is important to cope with these two sets of power relations.

First, there is a current political trend attempting to ignore the fact that climate change is a real fact happening in the present and threatening social groups and ecosystems. There are important politicians, such as Brazilian and American presidents, questioning the evidences about climate change, dismissing the policies about reducing greenhouse gases, or about protecting people from climate change impacts. Donald Trump has already considered climate change as a hoax designed to bring down US business and manufacturing (Dodgson 2016). This American government's strategy is considered by Joel Clement as hostility to science at the highest level, which puts Americans in real danger and attempts to silence science (Davidson 2017; Clement 2017). This misconduct of power does not help to respond to the reality of climate change, nor to address local groups' demands; it ends up reproducing inequities and putting the burden of adaptation on specific social groups while other groups are able to keep their developed lives with no worries.

On the other hand, the second set of power relations regarding global knowledge production, is about the resistance of great part of global knowledge production about climate change to open science frontiers to work with native people as equal partners. There are many authors working on traditional and/or indigenous knowledge being deeply considered by scientific production (Jasanoff 2004; Wynne 2008). David Carlson, International Program Office for the International Polar Year (2007-2008), told Callison (2014) that he addressed relations between traditional knowledge and science as a problem of valuation and evaluation:

> What needs to occur for engagement and partnership with indigenous peoples is a rebuilding of the evaluation system so that 'what constitutes valuable data' is arrived at through compromise. 'Engaging means they [indigenous partners] not only need to be sources of information but they have to set up the structure of what data has value, how we collect it, and how we should share it, and that's a different level of engagement and fairness (Callison 2014: 60).

It is difficult to get it done due to the challenges in terms of its status as a differing system of knowledge and how these two systems (science and traditional knowledge) can integrate each other. Analyzing global climate arena (chapter 2 in this volume) showed that local actors are

much more able and eager to integrate scientific findings into their own systematic observation than scientists would be in their encounter with traditional knowledge. It is possible to see that mobilizing science is part of their strategy to show other actors in different levels of action that their problem comes to matter and need attention of a global community. Even though there is an emerging tendency in global knowledge production of considering indigenous peoples, it is still a challenge to overcome the colonialism mindset that devalues some kinds of expertise in detriment of others. Aqqaluk Lynge, 2010-14 international chair of Inuit Circumpolar Council told:

> I plead with western scientists to be careful how you conduct your research on our land and on our thinning ice. Work with us as equal partners and not as the colonizers and missionaries did. Help us deal with not only your own interesting research but with our concerns (Callison 2014, p. 63-4).

Besides, the literature review showed that scientific works with empirical studies have been raising emergent narratives about affected populations in a different worldview, considering them as political subjects with voices, demands and human rights. It is a current trend to have open eyes to local actors' perceptions of themselves, of self-determination, giving voice and face for who is concerned and living climate change. The cultural and human rights aspect of climate change are one element that should connect us all, because it's the collective human rights that can really bring the human face, the human dimension to an issue that most people just understand as political, or scientific, or economic only (Our Climate Voices [OCV] 2017). Stories are more memorable than facts and figures. Furthermore, this narrative arose from a criticism and a strong rejection by local actors of the reductionism of *refugeeism* categories (Marino 2015; McNamara and Gibson 2009; Farbotko and Lazrus 2012). The prospect of migration coupled with a designation as refugee is perceived as denying local actors the right to a subjectivity and voice as an equal citizen of the global community in the global climate arena. It is possible to consider that this new narrative of political subjects is attempting to cope with the colonialism mindset which has not been assigning agency to local peoples.

With the exemplary case of Shishmaref, it is becoming increasingly clear that the colonialism worldview is not just a past haunting, but it still shapes the debates and negotiation about how climate change adaptation and mitigation happen. Furthermore, the colonial power relations defining the way people act towards climate change is not restrict to traditional communities facing colonialism processes, it is also part of global knowledge production about climate change issues. According to Callison (2014), it is here that perhaps a rejection of climate

change begins to make some sense, as does a continued détente with science. Ignoring the fact of climate change is real or attempting to silence science is something that does not just endanger indigenous people facing climate consequences nowadays, but everyone else who will be pushed to deal with it sooner or later if those power relations do not change.

Climate change consequences shaping responses

One could think that this context as a whole shall drive Shishmaref people to desperation. But desperation was something I did not see during my fieldwork. Definitely climate change is not something new for them: they have voted to be relocated due to climate consequences since 1973 (Shishmaref Strategic Management Plan 2016). Instead of desperation, it is possible to realize a very strong sense of belonging and community, which have shaped their responses to climate change consequences. Thus, Shishmaref showed how climate change was also an opportunity to political organization and to advocate for voice and self-determination.

Easeau Sinnok is an exemplary case of climate change shaping social relations towards local political organization. Eseau is a young man from Shishmaref, who was mentioned several times during my fieldwork as a youth leader about climate change issues. He studies Tribal Management at the University of Alaska Fairbanks, and is an Arctic Youth Ambassador. He took his uncle's case mentioned above as a motivation to do climate advocacy work (Sinnok 2017). The Obama White House named Eseau a Champion of Change for Climate Equity[20], and due to his job sharing his experiences, telling stories of how climate change has affected Shishmaref in order to raise awareness about the issues his community faces. As part of the Sierra Student Coalition he got to attend the 21st meeting of the conference of parties to the United Nations Climate Change Negotiations (COP21) in Paris in December 2015, where world leaders agreed to work together to end the fossil fuel era.

Thus, Eseau case also shows how local actors have established social relations into the global climate arena: dismissing alarmist and victimization narratives, local actors mobilizing science production, that consider them as political subjects, as a resource to connect themselves

[20] See on https://obamawhitehouse.archives.gov/champions (available on 12.02.2019)

as part of a world effort to deal with the same consequences. Mobilizing scientific material enables them to explore a common ground problem in several parts of the world – such as Pacific Islands, Arctic region, coastal cities – convincing important actors into the global climate arena to care about them, widen their influence in the decision-making processes. Being connected is part of their strategy, which aims to put them in the same stage (action situation) of negotiation about their future. That is, being connected makes their voices louder.

Furthermore, Shishmaref case has been teaching how climate change steps up the sense of *home* and identity. Since the first voting process, community's worries were about keeping the community safe and keep them together, saving their values and culture. For some interviewees I asked: what do you see as being the future of Shishmaref? All of them told something about stick together, because the community is like a "family, where one takes care of each other" (sentence mentioned by a native interviewee in August, 2017). Some of them believed they will be relocated elsewhere, some of them believed they will depict "defend in place" approach. But none of them described an individual plan to save their family and leave the island behind. Even those who left Shishmaref to work or study outside the island for a period, they mentioned they are "back home" or they were "homesick and had to comeback".

When I asked to community members about the stressful condition of living in a place in risk to disappear, I have got surprised when some answered: "I don't really think about that", "I'm not truly worried about it, because I'm not depending on anybody to do something for me"; "we will know what need to be done whenever we need to". Those answers do not intend to show a community as *victim* waiting for external help. It shows a sense of strength that comes from their century-aged identity, trust and culture, which is proud of a lot of expertise of adapting, taking care of each other and being connected to the environment (Figure 4).

FIGURE 4: SCHOOL SPORTS COURT AND SHISHMAREF CULTURAL VALUES

Source: Author's collection taken in August 2017. This set of pictures shows the sports court inside Shishmaref School. This is one of the main spaces where people live together, not just kids, but also parents and elders, because it is also the dining hall of the village. In the center of the court there was an image depicting Shishmaref culture, very related to the environment, portraying a human as part of the Arctic environment. And around the court, on the walls, there were several boards symbolizing their main values: responsibility to tribe, sharing, hunter success, family roles, domestic skills, cooperation, humility, humor, respect for elders, love for children, hard work, respect for others and knowledge of language. Those values exposed for kids daily shows how they want to keep their culture and identity alive.

Conclusions

Shishmaref proves that culture and climate change are intertwined in the definition of their vulnerability to climate change. The chapter draws attention to the fact that it is not possible to cope with climate change if we ignore that it is interconnected within a myriad of other ongoing dynamics that shape society. Climate change is a scientific concept, but it is also an experienced phenomena, and a problem with moral and ethical contours, that must be addressed personally and collectively (Callison 2014). Thus, the problem of vulnerability is not just part of physical impacts, but it is also part of a historical process of cultural erosion due to

a power relation caused by the colonialism mindset. This chapter argues that this power relation defining the way people act towards climate change is not restrict to traditional communities facing colonialism process. It is also seen in global knowledge production and reproduction.

In this manner, Shishmaref is the canary in the coal mine for climate change not just because they "could soon become refugees in their own country" (Clement 2017) due to the overwhelmingly consequences of the new climate pattern. Nor just because "Shishmaref demonstrates how the negative repercussions of climate change are predicated on the gross inequity present in the world today and constructed historically across time" (Marino 2015: 16). Shishmaref is also showing us what is needed to do and to overcome to cope with climate change issues. According to the interviewee from Denali Commission: "it may provide the insights and practices necessary to deal with similar scenarios in the future in large population centers" (written interview granted in July 2018). Similarly, Watt-Cloutier (2015) argues that Inuit culture is far from dead and in fact is flourishing despite the difficulties. In her opinion, this is something good, because Inuit people's sustainable livelihood and knowledge could serve as a model for all nations, compelling the world to make the effective transformations needed to mitigate climate change.

And the main word Shishmaref has been teaching about our societies in this challenge of climate change is *connection*: 1) understanding how climate change and culture are being *interconnected* in several levels, including the power relations that shape this nexus; 2) establishing *connection* between science and traditional knowledge to collaborate for scientific interests and to give voice and face for who is concerned and living climate change; 3) remembering that we are *connected* to ecosystems, and the ability to adapt is the ability to understand that all of those things are *interconnected*; 4) being *connected* makes their voices louder, empowering themselves to show that their problem matters; 5) those problems matters because we are all *connected* in one world facing the same challenges, pleading for action from this global community.

Climate change has compelled people to rethink norms, practices, cultures and power relations regarding objectivity, detachment and democratic obligation intending to engage the public and persuading them to cope with climate change consequences. Because of that, I believe that choosing Shishmaref, or alternate choices such as another Arctic community, or choosing Bangladesh cases of flooding, or an area to study in Sahel, or a small island nation in Pacific, would have resulted in an account very different in its details, but not in its conclusions.

REFERENCES

BIERMANN, F.; BOAS, I. 2010. Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees. *Global Environmental Politics*, ed. 1, vol. 10.

BLACK, R. 2001. Environmental Refugees: Myth or Reality?. *UNHCR* Working

BRONEN, R. 2009. Forced Migration of Alaskan Indigenous Communities due to Climate Change: Creating A Human Rights Response. In: *Linking Environmental Change, Migration & Social Vulnerability*, edited by Anthony Oliver-Smith. Bonn: UNU Institute for Environmental and Human Security (UNC-EHS). America's Climate Choices: Adapting to the Impacts of Climate Change. https://www.researchgate.net/publication/236444520_America%27s_Climate_Choices_Adapting_to_the_Impacts_of_Climate_Change (acessado em 24/05/2017)

BRONEN, Robin. 2013. *Climate-Induced displacement of Alaska Native Communities*. Alaskan Immigration Justice Project. January 30, 2013.

http://www.brookings.edu/~/media/research/files/papers/2013/1/30-arctic-alaska-bronen/30-climate-alaska-bronen-paper.pdf (acessado em 19/10/2015)

BRONDÍZIO, E., Karen O'Brienb, Xuemei Baic, Frank Biermannd, Will Steffenc,e, Frans Berkhoutf, Christophe Cudennecg, Maria Carmen Lemosh, Alexander Wolfei, Jose Palma-Oliveiraj, Chen-Tung Arthur Chenk. 2016. Re-conceptualizing the Anthropocene: A call for collaboration. *Global Environmental Change***.** Volume 39, July 2016, Pages 318-327.

CALLISON, C. 2014. *How Climate Change Comes to Matter: the communal life of facts*. USA: Duke University Press.

CLARK, W. 2008. Social and political contexts of conflict. This article is an edited version of a longer article of the same title prepared for the German Advisory Council on Global Change (WBGU), published in *Climate Change as a Security Risk*, Earthscan, London and Sterling VA.

CLEMENT, J. 2017. I'm a scientist. I'm blowing the whistle on the Trump administration. *The Washington Post*. Available at https://www.washingtonpost.com/opinions/im-a-scientist-the-trump-administration-reassigned-me-for-speaking-up-about-climate-change/2017/07/19/389b8dce-6b12-11e7-9c15-177740635e83_story.html?noredirect=on&utm_term=.ff156187c186 (available on 02.13.2019)

DAVIDSON, J. 2017. Trump creates 'hostile environment' for federal government scientists. One speaks out about reprisals. *The Washington Post*. https://www.washingtonpost.com/news/powerpost/wp/2017/07/25/has-trump-sidelined-restricted-government-scientists-yes/?utm_term=.ea8989339b07 (available on 13.02.2019)

DODGSON, L. 2016.The biggest threat to Earth has been dismissed by Trump as a Chinese hoax. *Business Insider* https://www.businessinsider.com/donald-trump-climate-change-chinese-hoax-2016-11 (available on 02.12.2019)

DOVE, M., & BARNES, J. (2015). Climate Cultures : Anthropological Perspectives on Climate Change. New Haven: Yale University Press.

EL-HINNAWI, E. 1985. *Environmental Refugees*. United Nations Environmental Program, Nairobi.

ENVIRONMENT PROTECTION AGENCY (EPA). 2016. *Climate Change Indicators: U.S. and Global Temperature*. https://www.epa.gov/climate-indicators/climate-change-indicators-us-and-global-temperature (acessado em 23/05/2017)

FARBOTKO, C. ; LAZRUS, H. The first climate refugees? Contesting global narratives of climate change in Tuvalu. *Global Environmental Change* 22 (2012) 382–390.

FITZGERALD, O. and WATT-CLOUTIER, S. 2018. Humanizing Climate Change: A Conversation with Sheila Watt-Cloutier. Available at https://www.cigionline.org/articles/humanizing-climate-change-conversation-sheila-watt-cloutier (available on 02.12.2019)

HUNTER, L.; LUNA, J. AND NORTON, R. 2015. The Environmental Dimensions of Migration. Annu Rev Sociol. 2015 August ; 41: 377–397. doi:10.1146/annurev-soc-073014-112223.

JAMES, D. 2016. More than global warming afflicts endangered Shishmaref. *AND.* https://www.adn.com/books/article/more-global-warming-afflicts-endangered-shishmaref/2016/03/27/ (available on 02.13.2019)

JASANOFF, Sheila. 2004. "Ordering Knowledge, Ordering Society." *States of Knowledge: The Co-Production of Science and the Social Order.* Ed. Sheila Jasanoff. Routledge.

KOLBERT, E. 2015. *Field notes from a catastrophe: man, nature and climate change.* Bloomsbury, USA: Bloomsbury Publishing Plc.

LECEY, J. AND BEATTY, K. 2012. Representative Literature Reviews Using Constrained Snowball Sampling and Citation Network Analysis Available at SSRN: https://ssrn.com/abstract=1992601 or http://dx.doi.org/10.2139/ssrn.1992601 (available on 02.12.2019)

MARINO, E. 2015. *Fierce Climate, Sacred Ground: an Ethnography of Climate Change*. Fairbanks, Alaska: University of Alaska Press.

MARINO, E. 2012. The long history of environmental migration: Assessing vulnerability construction and obstacles to successful relocation in Shishmaref, Alaska. *Global Environmental Change* 22 (2012) 374–381

MCNAMARA, K.; GIBSON, C. 2009. We do not want to leave our land': Pacific ambassadors at the United Nations resist the category of 'climate refugees'. Geoforum, ed. 3, vol. 40.

MYERS, N. 1993. Environmental refugees in a globally warmed world, in: *Bioscience* 43: 752–61

OLIVER-SMITH, A. 2012. Debating environmental migration: society, nature and population displacement in climate change. J Int Dev. 2012; 24(8):1058–70.

_____. 2006. Communities after catastrophe: Reconstructing the material, reconstituting the social. In: *Community Building in the 21st Century* [Hyland,S. (ed.)]. School of American Research Press, Santa Fe, NM, pp. 45-70.

OUR CLIMATE VOICES. 2017. *Our Climate Voices is an anthology of stories that amplifies first-person climate change narratives*. http://www.ourclimatevoices.org/what-we-do (available on 02.12.2019)

PIGUET, E. 2008. Climate change and forced migration. In: *New Issues in Refugee Research*. Research Paper No. 153. United Nations High Commissioner for Refugees.

SHISHMAREF LOCAL ECONOMIC DEVELOPMENT PLAN (2013-2018). Elaborado por: The Community of Shishmaref e The Bering Strait Development Council. http://www.kawerak.org/ledps/shishmaref.pdf (acessado em 23/05/2017)

SHISHMAREF STRATEGIC MANAGEMENT PLAN. 2016. Shishmaref, Alaska available at: https://www.commerce.alaska.gov/web/Portals/4/pub/1_Shishmaref_SMP_September_2016.pdf (available on 02.12.2019)

SINNOK, E. 2017. Esau Sinnok | Shishmaref, Alaska. *Our Climate Voices.* http://www.ourclimatevoices.org/news/esausinnok (available on 02.13.2019)

THRESHOLD. 2018. Season Two: Cold Comfort. Podcast available at https://www.thresholdpodcast.org (available on 13.02.2019)

WYNNE, B. 2008. Elephants in the Rooms Where Publics Encounter 'Science'?: A Response to Darrin Duran. Accounting for Expertise: Wynne and the Autonomy of the lay public. *Public Understanding of Science 17,* n. 1: 21-33-

CONCLUSIONS

Shishmaref has been proven to be an exemplary case to reveal the myriad of elements influencing the liminal condition of communities already considered potential displaced people living in risky places due to climate change consequences (Chapter 3). Reducing explanations simply to the lack of financial resources to relocation is not enough to understand this problematic, which is much deeper than this reductionism. Understanding climate change as a scientific concept of a physical phenomenon and also a problem with moral and ethical contours, this research shows that it is necessary to question the categorization of human displaced people and the narratives mobilized into the global climate decision-making arena to understand the different interconnected ongoing dynamics that define the liminal condition of some social groups.

Questioning some scientific categories broadly used by some media material has showed that the traditional concepts and policies concerning the immigrant and the refugee are not enough nowadays to address the current phenomenon of climate change impacting human displacements (Chapter 1). With this, the research wanted to reinforce the criticism about those categories and narratives and the fact that they have not helped to influence effective actions or legal framework to cope with climate displaced people. Yet, the research also shows that the narratives broadly adopted by dominant actors into the global climate arena have implications for the scope and shape of policy actions, because representations of *refugeeism*, like any other representation, are neither static nor innocent, having influence on how we understand and interpret the world and on how we act upon it. The prospect of migration coupled with a designation as *refugee,* considering likely displaced peoples as fragile victims, or frightening security threats, is perceived as denying local actors the right to subjectivity, demands and voice as equal citizens of the global community in the global climate arena.

The narratives of *refugeeism* and migration as adaptation do not grant agency to the local populations, because these populations are considered passive helpless people on the move, waiting for external protection, from external actors who have control over the situation

(Chapter 1). These narratives do not problematize the burden of adaptation: who gets asked to sacrifice in a warmer world? Is every social group adapting values, habits, behaviors, cultures, consuming differently, driving less and demanding less from fossil fuel? Local actors have never defined them as *victims* of impacts produced far away from there; they consider themselves inserted in the world transformation. And they are willing to make changes. However, what they question is about the frustration spread by the colonial mindset that imposes changes and adaptation in only one direction. A mindset that neglects some in benefit of others, and does not allow all the actors to play into the decision arena.

Besides, the narrative of *refugeeism* over-emphasizes the external measures of adaptation instead of focusing on cooperative actions to curb climate change causes and to remove the burden of adaptation from the local actors. Focusing on migration as an acceptable adaptation measure is hampering policy action due to its social and economic costs. The research demonstrates that changing the focus from adaptation-centered to mitigation intertwined with adaptation (*in loco*, when possible) would be the communities preferred option (Chapter 1). But, to achieve this a shift of narratives and worldviews is needed. In spite of the resistance from great part of global knowledge production about climate change to open science frontiers to work with native people as equal partners, the literature review showed that scientific works with empirical studies have been rising emergent narratives about affected populations in a different mindset, refusing the reductionism of *refugeeism* narratives, considering them as political subjects with voices, demands and human rights. It is a current trend to have open eyes to local actors' perceptions of themselves, of self-determination, giving voice and face for who is concerned and living climate change, attempting to cope with the colonialism mindset which has not been assigning agency to local peoples.

Mobilizing the cultural and human rights aspect of climate change is considered a current action strategy of local actors to widen their influence in the global climate arena, dealing with the imagery of being as human as any other group in the world, with duties and rights, and compelling the world moral conscience (Chapter 2). This strategy has been intending to put them on the control over their own fate. Local actors realized that acting within a mainstream narrative, adopted by some scientists and some media material, that has not been supportive and attentive to local voices, has not come up with an effective solution. It is argued here that there is a gap of relations, information, influence and action rooted in the broader level of global climate change and human displacement arena, where the global knowledge

production takes place and spread narratives widely used to inform global environmental governance and define policy relevance.

To overcome this gap, the research reveals that, currently, local actors do not accept detached categories, and do not make alliances with those who interpret them as refugees anymore (Chapter 2). They still mobilize climate knowledge, especially to find a common grounded problem with places and peoples elsewhere, convincing important actors into the global climate arena, such as policy-makers, to care about them as groups facing the same consequences. However, their alliances are established with those actors with a new worldview. Dismissing alarmist and victimization narratives, they advocate for their right to be inserted into the global climate arena as political subjects, trying to influence decision-making about their own future according to their own demands. Their narrative is talking about their innate rights to territory and to cultural identity: dispersing into several places or being guests in a strange urban city is not an option.

As also discussed by other researches with empirical studies in this region[21], the results of data analysis of this thesis endorse the perception that the Arctic has been connected throughout the world for centuries (Chapter 2). Arctic indigenous people have been strongly articulated between them and also along with international organizations, participating into international agreements, supporting and being supported by those actors who mobilize and guide those actions by this new narrative. Thus, with the arena analysis (Chapter 2), it is possible to understand that the local communities have been stablishing alliances and influence that subvert the expected hierarchical relations with the central state government. They have insertion into the political system and have been moved to the center stage of the climate arena, but not necessarily having the State as an intermediator. And these local peoples in the Arctic may have emerged as societies that do not depend upon a central State to deal with climate dilemmas to move towards sustainable societies.

Trying to understand to which extent global knowledge and the production of global categories about climate change and human displacement influence environmental governance this research considers science as an actor influencing the results of the negotiations, and also as a set of resources that could be mobilized by the all the social actors playing in the arena (Chapter 2). Science main goal is to influence relevant policy-making intending to deal with

[21] To have further readings check: Dodds, K. and Nuttal, M. 2019. *The Arctic: What Everyone Needs to Know:* Oxford U Press.

grounded problems, being an actor who negotiate and debate what comes to matter and how to depict the issues. And science is also a means used by the actors involved in the arena in order to increase their legitimacy, visibility and influence of the decision making results. Thus, it was possible to realize that local actors are much more open and able to absorb and adopt scientific facts on their vocabulary and action strategy than the opposite. Even though there is an emerging tendency in global knowledge production of considering indigenous peoples, it is difficult to get it done due to the challenges in terms of its status as a differing system of knowledge and how these two systems can integrate each other in order to help not only scientific research interests but also local groups' concerns. This is also a challenge to overcome the colonialism mindset that devalues some kinds of expertise in detriment of others (Chapter 3).

The research understands climate change as both: a material and a narrative phenomenon interconnected to social and cultural dynamics. In order to utterly understand climate change consequences, scientists have to be attentive and connected to perspectives, values and knowledge of people who face climate change impacts, and not just the biophysical changes. Reasonable climate change governance requires greater accountability to local groups´ cultures and demands and requires that science, media and governance institutions listen more closely to debates at these scales.

The contribution of a theoretical-methodological approach

Analyzing this was possible due to the theoretical-methodological approach and the conceptual-analytical framework of arena. The sociological relational approach and the arena framework allowed an understanding of both the structural factors that organize the interactions between social groups and the dynamics of the interactions and strategies of action that these actors adopt to influence the results of the debates in the global climate arena. We cannot deceive ourselves with the dichotomy: in empirical reality there is or arena or field, or contingency or reproduction. Given the circumstances and emergencies of tensions and collective action, it may be more appropriate to speak about and use the arena approach or no. It, it will depend on the research questions and goals to define the approach which will be the most adequate for understanding the reality in its complexity. Here, the theoretical approach of arena was chosen, because it is important to see the changes and transformations of actors'

behaviors, expectations and strategies along the years and how it is changing the outcomes of global climate arena.

Having a conceptual-analytical framework can be understood as a differential from other studies about Shishmaref and climate displaced people. Regarding the Social Science area, there are some important ethnographic, anthropological and sociopsychological studies[22] taking place there, but analyzing their narratives, influence and relations within a conceptual framework may be something recent. With this it was possible to 1) put concepts and categories in debate in order to question them in the light of the local realities, considering the perceptions of local actors about themselves and about the decision-making process; 2) identify which categories and narratives are used by them as part of their social resource mobilization to improve their action strategy to influence this arena; 3) identify and connect different actors and narratives in the same context of negotiating climate governance, acting in different levels of action situation; 4) bridge the empirical research with other similar realities all over the world, with different contexts but being part of the same arena.

Being a framework that look at multi levels, multi actors, multi relations, one could question if this framework would lose some nuances and overlook more specific elements of a decision-making. However, one of the strengths of this tools is its flexibility and adaptability. Depending on the research interests and the proposed questions, this tool allows the researcher to direct their efforts in one of the levels that make up the studied phenomenon, without losing its contextualization. As geographical maps[23] that can detail the streets of a neighborhood or the cities and states of a country, in the movement of zooming in and out, the arena framework can be presented at different scales, ranging from an extremely refined analysis to a very comprehensive one, always considering both sides, the most global and the most local, necessary and complementary among them to understand any reality. So, in order to understand what are the elements that influence the liminal condition of communities already considered potential climate displaced people beyond the economic reductionism responses and the exposure-centered explanations, this conceptual-analytical framework was adopted, focusing on some actors and stages, that researchers with other background inquiries would not consider so fruitful.

[22] Please, for some examples check Clayton and Manning (2018) and Watt-Cloutier (2015) in references of Chapter 1, and Wolsko and Marino (2016) in references of Chapter 2.

23 Metaphor first used by Hofstadter 1979 apud OSTROM, E. 2005. Understanding Institutional Diversity. Princeton: Princeton University Press.

Thus, arena is considered here a suitable analytical tool to understand and depict the different stages, action situation, levels of a decision-making process. Though, it may be not enough to analyze what or who moves between the different levels. Yet, when working with the resources and narratives mobilized, produced and reproduced by different actors in the global climate arena, this research attempted to cope with it. Looking not just at the actors in those different stages, but also trying to highlight what are the movements, the flux of influence and the arguments, the narratives and the resources that assign them to have greater or lesser leverage on the outcomes of the global climate arena.

Transitional societies

Until my qualification exam, which took place in June 2017, right before the fieldwork, the research was worried about attempting to structure a concept that captures the characteristics of a new society of potential displaced people in search of an ideal place to live. A concept which could better describe the characteristics and perceptions of these societies, that from the consequences of climate change are fading away, and do not know how will be restructured yet. The bet was on the term transitional societies. However, after the fieldwork, struggling with the consequences of different categories that have already been developed and broadly used, I could realize that trying to fix one social group in a conceptual definition might not be so useful, because people from Shishmaref taught me that they do not want to be different from *others*, within their particularities and identity, they want to be considered the same. It is increasingly difficult, if not impossible, to categorize potential displaced people due to global environmental changes neatly. Furthermore, this concept would keep the separation between "us" and "them". What I have learned studying Shishmaref and climate human displacement is that we need to perceive, sooner or later, that this separation does not make sense to cope with climate change effects.

Reflecting about the research path, I would say that transitional societies are those ones who are already facing and adapting to the climate change impacts in front of countless uncertainties about their future. But who is not facing climate change and its impacts and uncertainties? The blind-eyes are not looking, but they are living the global changes. The term *transition* is adopted because we are in the tipping point to leave our characteristics within the Anthropocene behind, to decide what form of society we want to be: a chaotic globe reacting

to the consequences of more and more frequent extreme events; or a sustainable balance and connection with nature. In my opinion, the decision is if we will all adapt and struggle to mitigate what is still possible to do so, or if we will still impose the adaptation burden for just some social groups and sit to watch the tragedy of our systems. Transitional societies are those ones inserted in a worldview dispute. Thereby, all of us are part of transitional societies, that need to cope with this contemporary dilemma. This research has taught that climate change must be addressed personally and collectively, thus, we need to understand we are all connected and part of a global community responsible for the causes and the solutions of the climate issue.

Learned lessons

- Communication

The experience of studying climate change, human displacement, native communities, and scientific material production has taught me that, as scientists, we need to be more attentive to the communication. And understanding communication as a two-way street. On the one hand, we need to make more effort to provide, with different languages resources, scientific information that different publics can use to develop critical sense and policy action. Without dismissing the Weberian worries about scientific objectivity, but scientists have to dedicate a greater time to think how to provide key input into climate change negotiations, not just among policymakers, but also empowering general public, local communities, small organizations to allow them to participate with stronger influence into the arena.

On the other hand, and it may be complimentary – to achieve the first goal may need to have reached the second one – science need to struggle with the co-production opening its frontiers to work with the "research subjects" in a partnership. It is not easy to deeply consider traditional/indigenous knowledge because of a matter of traditional value of neutral objectivity. However, the experience has been showing that it is becoming more and more important to reconsider the evaluation mindset, to one that comprises that local peoples are not just source of our data and results, but also a potential and powerful partner to push scientists to ask better questions, better methods, and better communication of scientific production implying better negotiations and policy action. To change effectively climate change governance, is needed to

change scientific approaches, being more attentive to local actors' demands and perceptions of themselves, giving voice and face for who is concerned and living our research questions.

- Relative privileges

It took a long period to reflect about many things I have learned with my empirical research. I started it based on the idea that climate change has emerged as the issue of the century not only because of its physical effects but because the impacts are seen as democratic. Being poor or rich, white, black or yellow, young or elder, anyone will cope with its effects. However, Shishmaref has showed what I had already listened to: minorities, remote and low income groups suffer different from those who live in a *visible* place. Right after my fieldwork, in the end of August and beginning of September 2017, Miami (Florida, the United States) was hit by a hurricane called Irma. The news were about people stocking food, taking their cars buying airfares to other states to flee the environmental extreme event. These adaptive reactive actions are a privilege of people living in Miami that people from Shishmaref do not have. Shishmaref indigenous people are dismissed and neglected in this logic: they know they may suffer tragedies sooner or later, but they do not have enough financial resources to solve the problems of extreme events.

Although they have fewer capital benefits, Shishmaref has taught me that they are not less privileged. Perhaps not in the matter of money and political solidarity from the skeptical national government. But they have the privilege of articulation, belonging, and community feeling that are so present there that it gives them a confidence that it is not just Trump's piggy bank that they lay their future. They trust on the connection they have with their group and their ancestral. They believe being close to each other will enable them to help who always helped. And that's how the privilege of the community may be highlighted as a factor in adapting to climate change.

May this feeling be extended, making everyone to realize that we all live in the same place.

- Look at the *other* as kin

This reflection was inspired by my interpretation of a short and intriguing text of Donna Haraway[24], that I think I will never understand utterly, but was fruitful to read after my fieldwork. Both, the text and the fieldwork, have taught me how to open my eyes to look at the *others* as part of my kinship. That is, not entities tied by genealogy, but we realizing the *connection* we have with every single human and environment over the world. We realizing that the *other* is not deeply different from *us* to the point that deserves to be neglected. We realizing that the *other* is not living a different reality that will not knock on *our* door sooner or later. Haraway and Shishmaref convinced me that making kin and making kind stretch the imagination and can change the story. I definitely learned about how together we are better than separated.

Thus, I finish this dissertation questioning if, after all, we can get real about what is happening and come together despite our differences to solve practical problems. In my opinion, yes. I do believe in humankind and human kindness. I think after a dark and devastating period of silencing and spurning some social groups, stifling science, squandering natural and financial resources, we will change and come together to solve practical problems. Clearly, silenced victims of climate change impacts are gone for good. In their place is a confident and forceful global community, sounding the alarm that unless we change course, and fast, our collective home will become incurably sick.

24 Haraway, D. 2015. Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin. Environmental Humanities, vol. 6, 2015, pp. 159-165.

REFERENCES

AAS, K.; HAARDE, G.; KOUKKU-RONDE, R.; LYRVALL, B.; TAKSØE-JENSEN, P. 2015. What Happens in the Arctic Does Not Stay in the Arctic. *Huffington Post.* https://www.huffingtonpost.com/amb-kare-aas/what-happens-in-the-arctic-does-not-stay_b_7445208.html (available on 02.13.2019)

ADAMS, B. 2017. I am Inuit. The Exhibit. Anchorage Museum. https://brianadams.photoshelter.com/portfolio/G0000RApRdq_Ee2c (available on 21.02.2019)

AFP. 2014. *Raging floods reach Multan villages*. https://www.dawn.com/news/1131740 (available in 02.12.2019)

ALVES, G. 2017. Temperatura no oceano está ligada a furacões. *Folha de São Paulo*. September 11th, 2017. Available on: http://www1.folha.uol.com.br/mundo/2017/09/1917365-temperatura-no-oceano-esta-ligada-a-furacoes.shtml (available on 10.17.17)

American Psychological Association. 2009. *Psychology & Global Climate Change Addressing A Multifaceted Phenomenon And Set Of Challenges.* https://www.apa.org/science/about/publications/climate-change-booklet.pdf (available on 02.14.2019)

AUGUSTENBORG, C. 2016. Shishmaref Climate Refugees Relocation - A sociological tipping point in Arctic Alaska. *Ecologist*. https://theecologist.org (available on 03.19.19)

BACCHIEGGA, F. e FERREIRA, L. 2014. Uma análise das aproximações e distanciamentos epistemológicos das noções de campo em P. Bourdieu e de arena em E. Ostrom. *Diálogos* (Maringá. Online), v. 18, supl. Espec., p. 49-66, dez./2014. BARNETT, J., CAMPBELL, J., 2010. *Climate Change and Small Island States: Power, Knowledge and the South Pacific*. London and Washington, DC: Earthscan.

BAS ARTS, J.; BOMMEL, S.; KONING, J.; TURNHOUT, E. 2013. Prelude to Practice: Introducing a Practice Based Approach to Forest and Nature Governance. Bas Arts, J.; Bommel, S.; Koning, J.; Turnhout, E. 2013. *Forest and Nature Governance A Practice Based Approach*. Springer Dordrecht Heidelberg New York London.

BATES, D. 2002. Environmental refugees? Classifying human migrations caused by environmental change. *Population And Environment*, ed. 5, vol. 23.

BIERMANN, F.; BOAS, I. 2010. Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees. *Global Environmental Politics*, ed. 1, vol. 10.

BILLI, M.; BLANCO, G.; URQUIZA, A. 2019. What is the 'Social' in Climate Change Research? A Case Study on Scientific Representations from Chile. *Minerva*. 10.1007/s11024-019-09369-2

BLACK, R. 2001. Environmental Refugees: Myth or Reality?. *UNHCR* Working.

BRONDÍZIO, E., Karen O'Brienb, Xuemei Baic, Frank Biermannd, Will Steffenc,e, Frans Berkhoutf, Christophe Cudennecg, Maria Carmen Lemosh, Alexander Wolfei, Jose Palma-Oliveiraj, Chen-Tung Arthur Chenk. 2016. Re-conceptualizing the Anthropocene: A call for collaboration. *Global Environmental Change***.** Volume 39, July 2016, Pages 318-327.

BRONEN, R. 2009. Forced Migration of Alaskan Indigenous Communities due to Climate Change: Creating A Human Rights Response. In: *Linking Environmental Change, Migration & Social*

Vulnerability, edited by Anthony Oliver-Smith. Bonn: UNU Institute for Environmental and Human Security (UNC-EHS). America's Climate Choices: Adapting to the Impacts of Climate Change. https://www.researchgate.net/publication/236444520_America%27s_Climate_Choices_Adapting_to_the_Impacts_of_Climate_Change (acessado em 24/05/2017)

BRONEN, Robin. 2013. *Climate-Induced displacement of Alaska Native Communities*. Alaskan Immigration Justice Project. January 30, 2013.

http://www.brookings.edu/~/media/research/files/papers/2013/1/30-arctic-alaska-bronen/30-climate-alaska-bronen-paper.pdf (acessado em 19/10/2015)

CALDENHOF, S. 2013.*Mudanças sociais, conflitos e instituições na Amazônia: os casos do Parque Nacional do Jaú e da Reserva Extrativista do Rio Unini*. Campinas, SP : [s. n.].

CALLISON, C. 2014. *How Climate Change Comes to Matter: the communal life of facts*. USA: Duke University Press.

CALVIMONTES, J. 2013.*Bandidos na Serra do Mar? Conflitos, estratégias e usos múltiplos dos recursos naturais na Mata Atlântica, São Paulo*. Campinas, São Paulo: [s.n.].

CLARK, W. 2008. Social and political contexts of conflict. This article is an edited version of a longer article of the same title prepared for the German Advisory Council on Global Change (WBGU), published in *Climate Change as a Security Risk*, Earthscan, London and Sterling VA.

CLAYTON, S., and MANNING, C. 2018. *Psychology and climate change: Human perceptions, impacts, and responses.* New York: Academic Press.

CLEMENT, J. 2017. I'm a scientist. I'm blowing the whistle on the Trump administration. *The Washington Post*. Available at https://www.washingtonpost.com/opinions/im-a-scientist-the-trump-administration-reassigned-me-for-speaking-up-about-climate-change/2017/07/19/389b8dce-6b12-11e7-9c15-177740635e83_story.html?noredirect=on&utm_term=.ff156187c186 (available on 02.13.2019)

CRUMLEY, C. 1995. Heterarchy and the Analysis of Complex Societies. In: R. Ehrenreich, C. Crumley and J. Levy (editors) *Heterarchy and the analysis of Complex Societies.* Arlington, Virginia: the American Anthropological Association.DECARO, D. 2011. Considering a Broader View of Power, Participation, and Social Justice in the Ostrom Institutional Analysis Framework. *Grassroots Economic Organizing (GEO) Newsletter*, Volume 2, Issue 9. http://geo.coop/node/651 (available on 05/24/2017).

DAVIDSON, J. 2017. Trump creates 'hostile environment' for federal government scientists. One speaks out about reprisals. *The Washington Post*. https://www.washingtonpost.com/news/powerpost/wp/2017/07/25/has-trump-sidelined-restricted-government-scientists-yes/?utm_term=.ea8989339b07 (available on 13.02.2019)

DoD News. 2015. *DoD Releases Report on Security Implications of Climate Change.* https://dod.defense.gov/News/Article/Article/612710/ (available on 02.12.2019)

DODGSON, L. 2016.The biggest threat to Earth has been dismissed by Trump as a Chinese hoax. *Business Insider* https://www.businessinsider.com/donald-trump-climate-change-chinese-hoax-2016-11 (available on 02.12.2019)

DOMINGUES, J. 2014. Teorias Sociológicas No Século. XX. Rio de Janeiro: Civilização Brasileira. 4ªed.

DOVE, M., & BARNES, J. (2015). Climate Cultures : Anthropological Perspectives on Climate Change. New Haven: Yale University Press.

EL-HINNAWI, E. 1985. *Environmental Refugees*. United Nations Environmental Program, Nairobi.

ENVIRONMENTAL JUSTICE FOUNDATION. 2012. Securing Recognition, Protection And Assistance For Climate Refugees. https://ejfoundation.org/archive?film-filter=&report-filter=climate& (available on 17.10.17)

ENVIRONMENT PROTECTION AGENCY (EPA). 2016. *Climate Change Indicators: U.S. and Global Temperature*. https://www.epa.gov/climate-indicators/climate-change-indicators-us-and-global-temperature (acessado em 23/05/2017)

FARBOTKO, C., 2005. Tuvalu and climate change: constructions of environmental displacement in the Sydney Morning Herald. *Geografiska Annaler* B 87 (4), 279–293.

FARBOTKO, C. ; LAZRUS, H. The first climate refugees? Contesting global narratives of climate change in Tuvalu. *Global Environmental Change* 22 (2012) 382–390.

FEITAL, M. S. 2016. *Conflitos e arenas decisórias de grandes projetos de infraestrutura: uma discussão do Porto de São Sebastião – São Paulo – Brasil*. Jundiaí: Paco Editorial.

FEMIA, F. and WERRELL, C. 2011. If Climate Change is a Security Threat, Who's Qualified to Fight It? Hint: Everyone. *BRIEFER*. No. 04 | October.

FENG, S.; KRUEGER, A.; OPPENHEIMER, M. 2010. Linkages among climate change, crop yields and Mexico-US cross-border migration. *Proceedings Of The National Academy Of Sciences Of The United States Of America*, ed. 32, vol. 107.

FERREIRA, L. 2005. Conflitos sociais e uso de recursos naturais: breves comentários sobre modelos teóricos e linhas de pesquisa. *Política e Sociedade*. Out. 2005. N.7.

FERREIRA, L. *et al*. 2007. Encontro das Águas: Dinâmicas Sociais e Biodiversidade na Amazônia Brasileira. In: *TEORIA & PESQUISA – Revista de Ciências Sociais*. Vol. XVI n.01 jan/jun de 2007.

FERREIRA, Lúcia. (coord.); JOLY, C.; FERREIRA, Leila; CARMO, R. 2012. *Urban Growth, Vulnerability and Adaptation: Social and Ecological Dimensions of Climate Change on the Coast of São Paulo.* Research Project – FAPESP Program on Global Climate Change. Process 2008/58159-7. Julho de 2011 a agosto de 2012.

FERREIRA, L.C. ; CALVIMONTES, J. ; GIULIO, G. M. ; VIGLIO, J. E. ; ARAOS, L. F. . Conflictos entre expansión urbana y cobertura vegetal y sus consecuencias para los ambientales globales: un estudio en el litoral del estado de São paulo, Brasil. In: Lúcia da Costa Ferreira; Luísa Schmidt; Mercedes Pardo Buendía; Jorge Calvimontes;José Eduardo Viglio. (Org.). *Clima de tensão: ação humana, biodiversidade e mudanças climáticas.* 1ed.CAMPINAS: Editora da Unicamp, 2017, v. , p. 29-54.

FITZGERALD, O. and WATT-CLOUTIER, S. 2018. Humanizing Climate Change: A Conversation with Sheila Watt-Cloutier. Available at https://www.cigionline.org/articles/humanizing-climate-change-conversation-sheila-watt-cloutier (available on 02.12.2019)

FORESIGHT. 2011. *Migration and Global Environmental Change – Future Challenges and Opportunities.* Final Project Report: Executive Summary. The Government Of ce for Science, London.

GANGA, M. 2015. This is climate change: Alaskan villagers struggle as island is chewed up by the sea. AUG 30, 2015 | 3:00 AM | KIVALINA, ALASKA. *Los Angeles Times*.

https://www.latimes.com/nation/la-na-arctic-obama-20150830-story.html (available on 03.19.19)

GAUTHIER, J. 2012. *17 juin : Journée mondiale de lutte contre la desertification* https://www.devp.org/fr/blog/17-juin-journee-mondiale-de-lutte-contre-la-desertification (available on 02.12.2019)

GIDDENS, A. 2009. *A Constituição da Sociedade.* São Paulo: Martins Fontes.

GIDDENS, A.; PIERSON. C. 2000. *Conversas com Anthony Giddens: o sentido da modernidade*. Editora FGV: Rio de Janeiro.

GLORFELD, J. 2017. Moderate warming tipped to produce flood of refugees into Europe. *Cosmagazine*. https://cosmosmagazine.com/climate/moderate-warming-tipped-to-produce-flood-of-refugees-into-europe (available on 03/06/2019)

GOLDENBERG, S. 2013a. America's first climate refugees – Newtok, Alaska is losing ground to the sea at a dangerous rate and for its residents, exile is inevitable. *The Guardian* https://www.theguardian.com/environment/interactive/2013/may/13/newtok-alaska-climate-change-refugees (available on 05/23/2017)

GOLDENBERG, S. 2013b. Relocation of Alaska's sinking Newtok village halted. *The Guardian.* https://www.theguardian.com/environment/2013/aug/05/alaska-newtok-climate-change (available on 12.02.2019)

GRAY, C. 2009 . Environment, Land, and Rural Out-migration in the Southern Ecuadorian Andes. *World Development*, ed. 2, vol. 37

HANNIGAN, J.A. 1995. *Environmental Sociology : a social constructionist perspective.* London and New York: Routledge.

HARTMANN, B. 2010. Rethinking Climate Refugees And Climate Conflict: Rhetoric, Reality And The Politics Of Policy Discourse. *Journal Of International Development*, ed. 2, vol. 22.

HENRY, S.; SCHOUMAKER, B.; BEAUCHEMIN, C. 2004. The impact of rainfall on the first out-migration: A multi-level event-history analysis in Burkina Faso. *Population And Environment*, ed. 5, vol. 25.

HERRMANN, V. 2017. America's first climate change refugees: Victimization, distancing, and disempowerment in journalistic storytelling. *Energy Research & Social Science* 31 (2017) 205–214.

HUGO, G. 1996. Environmental concerns and international migration. *International Migration Review*, ed. 1, vol. 30.

HUNTER, L.; LUNA, J. AND NORTON, R. 2015. The Environmental Dimensions of Migration. Annu Rev Sociol. 2015 August ; 41: 377–397. doi:10.1146/annurev-soc-073014-112223.

IPCC. 1990. *Policymakers' summary of the potential impacts of climate change (*Report from Working Groupe II to IPCC) IPCC – Secretariat, Geneva.

http://www.ipcc.ch/publications_and_data/publications_ipcc_first_assessment_1990_wg2.shtml (available on 05/23/2017)

IPCC. 2007. *Impacts, adaptation and vulnerability*. Working Group II Summary for Policymakers. Geneva: IPCC Secretariat. http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg2_report_impacts_adaptation_and_vulnerability.htm (available on 05/23/2017)

IPCC. 2019. About the IPCC. https://www.ipcc.ch/about/ (available on 02.12.2019)

IPCC. 2014. *Impacts, Adaptation, and Vulnerability*. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. http://www.ipcc.ch/report/ar5/wg2/ (available on 05/23/2017)

IPCC. 2018: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. In Press.

JACOBSON, J. 1988. Environmental Refugees – a yardstick of hability. *Bulletin of Science Technology and Society.* Ed. 3, vol. 8.

JACOBSON, J. 1988. Environmental Refugees – a yardstick of hability. *Futurist.* Ed. 3, vol. 23.

JAMES, D. 2016. More than global warming afflicts endangered Shishmaref. *AND.* https://www.adn.com/books/article/more-global-warming-afflicts-endangered-shishmaref/2016/03/27/ (available on 02.13.2019)

JASANOFF, Sheila. 2004. "Ordering Knowledge, Ordering Society." *States of Knowledge: The Co-Production of Science and the Social Order.* Ed. Sheila Jasanoff. Routledge.

JONSDOTTIR, I. 2013. "Scaling Climate: the politics of anticipation" in *The social Life of Climate change Models: anticipating nature*, ed K Hastrup and M. Skydstrup, New York: Routledge.

KOESTLER, A. 1990. (first edition 1967) *The Ghost in the Machine*. Arkansas: Arkana.

KOLBERT, E. 2015. *Field notes from a catastrophe: man, nature and climate change.* Bloomsbury, USA: Bloomsbury Publishing Plc.

LAZRUS, H., 2009. Perspectives on Vulnerability to Climate Change and Migration in Tuvalu. *Studies of the University: Research, Counsel, Education*. Bonn, UNU Institute for Environment and Human Security (UNU-EHS).

LECY, J. AND BEATTY, K. 2012. Representative Literature Reviews Using Constrained Snowball Sampling and Citation Network Analysis Available at SSRN: https://ssrn.com/abstract=1992601 or http://dx.doi.org/10.2139/ssrn.1992601 (available on 02.12.2019)

LOWE, T. 2006. *Is this Climate Porn? How does climate change communication affect our perception and behavior?* Tyndall Centre Working Paper 98. Norwich, UK: University of East Anglia.

MARINO, E. 2012. The long history of environmental migration: Assessing vulnerability construction and obstacles to successful relocation in Shishmaref, Alaska. *Global Environmental Change* 22 (2012) 374–381

MARINO, E. 2015. *Fierce Climate, Sacred Ground: an Ethnography of Climate Change*. Fairbanks, Alaska: University of Alaska Press.

MARINO, E. & RIBOT, J. 2012. Adding Insult to Injury: Climate Change, Social Stratification, and the Inequities of Intervention, an Introduction. *Global Environmental Change*, 22/2:323-328.

MARINO, E., & LAZRUS, H. 2015. Migration or Forced Displacement?: The Complex Choices of Climate Change and Disaster Migrants in Shishmaref, Alaska and Nanumea, Tuvalu. *Human Organization*. November 2015, DOI: 10.17730/0018-7259-74.4.341

MARTIN, P.; LEFEBVRE, M. 1995. Malaria And Climate – Sensitivity Of Malaria Potential Transmission To Climate. *AMBIO*, ed. 4, vol. 24.

MCGINNIS, M. D. An Introduction to IAD and the Language of the Ostrom Workshop: A Simple Guide to a Complex Framework. *The Policy Studies Journal*, Vol. 39, No. 1, 2011.

MCGREGOR, J. 1994. Climate-Change And Involuntary Migration – Implications For Food Security. *Food Policy*, ed. 2, vol. 19.

MCNAMARA, E. 2007. Conceptualizing discourses on environmental refugees at the United Nations. *Population and Environment*. 29:12–24 DOI 10.1007/s11111-007-0058-1

MCNAMARA, K.; GIBSON, C. 2009. We do not want to leave our land': Pacific ambassadors at the United Nations resist the category of 'climate refugees'. Geoforum, ed. 3, vol. 40.

MELE, C.; VICTOR, D. 2016. Reeling From Effects of Climate Change, Alaskan Village Votes to Relocate. *The New York Times.* https://www.nytimes.com/2016/08/20/us/shishmaref-alaska-elocate-vote-climate-change.html?_r=0 (available on 02.13.2019).

MYERS, N. 1997. *Environmental Refugees*. Population and Environment, Ed. 1, Vol. 19

MYERS, N. 1993. Environmental refugees in a globally warmed world, in: *Bioscience* 43: 752–61

MYERS, N. 2002. Environmental refugees: a growing phenomenon of the 21st century *Philosophical Transactions Of The Royal Society Of London Series B-Biological Sciences*, ed. 1420, vol. 357.

NOAA (National Oceanic and Atmospheric Administration). 2016. **National Centers for Environmental Information**. Accessed February 2016. www.ncei.noaa.gov. (acessado em 23/05/2017).

PETERS, A. 2017. There Will Soon Be Floods Of Climate Refugees: Will They Get Asylum? *Fastcompany*. https://www.fastcompany.com/40491897/there-will-soon-be-floods-of-climate-refugees-will-they-get-asylum (available on 03/06/2019)

PIGUET, E. 2008. Climate change and forced migration. In: *New Issues in Refugee Research*. Research Paper No. 153. United Nations High Commissioner for Refugees.

PRICE, S. 2016. Alaskan town votes to relocate as climate change submerges island. *United Press International – UPI* https://www.upi.com/Top_News/US/2016/08/18/Alaskan-town-votes-to-relocate-as-climate-change-submerges-island/2091471512295/?spt=sec&or=tn (available on 13.02.2019)

OLIVER-SMITH, A. 2012. Debating environmental migration: society, nature and population displacement in climate change. J Int Dev. 2012; 24(8):1058–70.

OLIVER-SMITH, A. 2006. Communities after catastrophe: Reconstructing the material, reconstituting the social. In: *Community Building in the 21st Century* [Hyland,S. (ed.)]. School of American Research Press, Santa Fe, NM, pp. 45-70.

OSTROM, E. 2005. *Understanding Institutional Diversity*. Princeton: Princeton University Press.

OSTROM, E. 2011. Background on the Institutional Analysis and Development Framework. *The Policy Studies Journal*, Vol. 39, No. 1.

OSTROM, E. 1990. *Governing The Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

OUR CLIMATE VOICES. 2017. *Our Climate Voices is an anthology of stories that amplifies first-person climate change narratives*. http://www.ourclimatevoices.org/what-we-do (available on 02.12.2019)

PIGUET, E. 2008. Climate change and forced migration. In: *New Issues in Refugee Research*. Research Paper No. 153. United Nations High Commissioner for Refugees.

RENN, O. 1992. The social arena concept of risk debates. In: KRIMSKY, S., GOLDING, D. (eds.). *Social Theories of Risk*, Preger, Westport, CT, p. 170-197.

RUIZ-BALLESTEROS, e. e BRONDIZIO, E. Building Negotiated Agreement: The Emergence of Community-Based Tourism in Floreana (Galápagos Islands). In: *Human Organizatio***n**, Vol. 72, No. 4, 2013

SASSEN, S. 2016. *Expulsões: Brutalidade e complexidade na economia global*. Rio de Janeiro e São Paulo: Paz e Terra.

SHEPPARD, K. 2014. Climate Change Takes A Village – as the planet warms, a remote Alaskan town shows just how unprepared we are. *Huffington Post*. 14 de Dezembro de 2014. http://www.huffpostbrasil.com/entry/shishmaref-alaska-climate-change-relocation_n_6296516 (available on 23/05/2017)

SHISHMAREF LOCAL ECONOMIC DEVELOPMENT PLAN (2013-2018). Elaborado por: The Community of Shishmaref e The Bering Strait Development Council. http://www.kawerak.org/ledps/shishmaref.pdf (acessado em 23/05/2017)

SHISHMAREF STRATEGIC MANAGEMENT PLAN. 2016. Shishmaref, Alaska available at: https://www.commerce.alaska.gov/web/Portals/4/pub/1_Shishmaref_SMP_September_2016.pdf (available on 02.12.2019)

SINNOK, E. 2017. Esau Sinnok | Shishmaref, Alaska. *Our Climate Voices*. http://www.ourclimatevoices.org/news/esausinnok (available on 02.13.2019)

SUTTER, J. 2017 . Tragedy of a village built on ice. *CNN*. https://edition.cnn.com/2017/03/29/us/sutter-shishmaref-esau-tragedy/ (available on 02.13.2019)

The Nobel Peace Prize for 2007 to the Intergovernmental Panel on Climate Change (IPCC) and Albert Arnold (Al) Gore Jr. – Press Release. *Nobelprize.org*. Nobel Media AB 2014. Web

THRESHOLD. 2018. Season Two: Cold Comfort. Podcast available at https://www.thresholdpodcast.org (available on 13.02.2019)

TURNHOUT, E.; DEWULF, A.; HULME, M. 2016. What does policy-relevant global environmental knowledge do? The cases of climate and biodiversity. *Current Opinion in Environmental Sustainability*. 18:65–72.

ULMER, F. 2013. What happens in the Arctic doesn't stay in the Arctic. Published on youtube by Yale University. https://www.youtube.com/watch?v=VWkGw89x0_c (available in 13.02.2019)

UNHCR. 1951. Convention and Protocol relating to the status of refugees https://www.unhcr.org/1951-refugee-convention.html (Available on 12.02.2019)

UPI. 2013. U.S. pledges aid to help Vietnam counter climate change. *United Press International – UPI.*https://www.upi.com/Top_News/World-News/2013/12/15/US-pledges-aid-to-help-Vietnam-counter-climate-change/UPI-18331387124041/ (available on 02.13.2019)

U.S. Army Corps of Engineers. 2004. **Alaska Baseline Erosion Assessment**. AVETA Report Summary – Shishmaref, Alaska.

United States Government Accountability Office (GAO). 2009. **Alaska Native Villages: Limited Progress Has Been Made on Relocating Villages Threatened by Flooding and Erosion.** http://www.gao.gov/products/GAO-09-551 (acessado em 23/05/2017)

WARNER, K., EHRHART, C., DE SHERBININ, A., ADAMO, S., CHAI-ONN, T., 2009. In Search of Shelter: Mapping the Effects of Climate Change on Human Migration and Displacement. *Care International*, CIESIN Columbia University, UNHCR, UNU-EHS, World Bank.

WATT-CLOUTIER, S. 2015. *The Right to Be Cold – One Woman's Fight to Protect the Arctic and Save the Planet from Climate Change*. Minnesota: University of Minnesota Press.

WESTING, A. 1992. Environmental refugees – a growing category of displaced persons. *Environmental Conservation*. Ed. 3, vol. 19.

WOLSKO, C.; MARINO, E. 2016. Disasters, migrations, and the unintended consequences of urbanization: What's the harm in getting out of harm's way? *Population and Environment* 37:411–428 DOI 10.1007/s11111-015-0248-1

WOODRUFF, D. 2010. Biogeography and conservation in Southeast Asia: how 2.7 million years of repeated environmental fluctuations affect today's patterns and the future of the remaining refugial-phase biodiversity. *Biodiversity And Conservation* , ed. 4, vol. 19.

WOOLF, N. 2016. Alaskan village votes on whether to relocate because of climate change. *The Guardian.* https://www.theguardian.com/environment/2016/aug/16/alaska-town-shishmaref-vote-climate-change-relocation (available on 02.13.2019)

WROUGHTON, L. 2016. Com mudanças no Ártico, EUA temem catástrofe climática. *Reuters Exame.* https://exame.abril.com.br/mundo/com-mudancas-no-artico-eua-temem-catastrofe-climatica/ (available on 02.13.2019)

WYNNE, B. 2008. Elephants in the Rooms Where Publics Encounter 'Science'?: A Response to Darrin Duran. Accounting for Expertise: Wynne and the Autonomy of the lay public. *Public Understanding of Science 17,* n. 1: 21-33-

Annex

Data public.	Fonte/ Link	Autor	Título	Principais pontos	Atores chave	Data acesso
21/07/2002	Peninsula Clarion	Peninsula Clarion	Shishmaref residents vote to move village	Residents of the island village of Shishmaref have voted overwhelmingly to relocate their community to escape the violent storms that have eroded huge chunks of shoreline. It was 161-20 in favor of moving. But it's not known where the millions of dollars needed for such a move would come from.	Percy Nayokpuk, president of Shishmaref Native Corp. Tony Weyiouanna, village transportation planner The U.S. Army Corps of Engineers	25/05/2017
Dez 2004	Columbia Law School	U.S. Army Corps of Engineers, prepared by Tetra Tech, INC.	SHISHMAREF PARTNERSHIP: Shishmaref Relocation and Collocation Study - Preliminary Costs of Alternatives	This document is an Army Corps of Engineers study made in 2004 which estimated that relocating Shishmaref to the Alaska mainland would cost $179 million. The Army Corps of Engineers, too, has played a key role in conducting early evaluations of relocation options, as well as funding and support for sea wall construction. Based on a comparison of aerial photos, the Army Corps of Engineers estimates that the island is losing between 2.7 and 8.9 feet a year, on average. But measurements in years with big storms have documented land loss of up to 22.6 feet. But the Corps' work is limited to what Congress has authorized and funded, and that work also requires some level of cost-sharing from a local partner. Bruce Sexauer, chief of planning for the Army Corps' Alaska district office, said the corps is currently considering funding for additional relocation or reinforcement studies for Shishmaref as part of its budget request for next year — but it's unclear whether they will get it.		06/09/2016
21/10/2010	United States for Alaska – Lisa Murkowski	Senator Lisa Murkowski	Murkowski Address to Alaska Federation of Natives (AFN) Convention ** As Prepared for Delivery **	This is a speech addressed to AFN Convention, and the senator argues that even as they made giant leaps forward, Alaska's Native peoples are still fighting for the respect that is rightfully theirs as descendants of those who first inhabited this great land. Even now, 50 years after statehood, things have not been made completely right, according to her. "I am saddened by the downsizing of villages and the closure of village schools as Native people have relocated into hubs and urban areas. Relocations forced by the high cost of living and limited employment opportunities. I am troubled – very troubled – to know that villages like Shishmaref, Kivalina and others in Western Alaska may be one storm away from relocating due to coastal	Lisa Murkowski, senator	06/09/2016

				erosion.” She also talked about the safety feeling of native communities, and told a story: On July 28, 2009 two young people harassed and assaulted a homeless Native man in Anchorage. This was a powerful reminder that many are not safe in our communities.”		
2013	The Guardian	Suzanne Goldenberg	America's first climate refugees - Newtok, Alaska is losing ground to the sea at a dangerous rate and for its residents, exile is inevitable.	This is a series of articles/videos/depositions about the America’s first refugees facing the climate change impacts: the Alaska native communities and their necessity of thinking about relocating because of the sea level rising.		29/09/2016
02/08/2013	The Guardian	Suzanne Goldenberg	Relocation of Alaska's sinking Newtok village halted	The village's relocation effort broke down this summer because of an internal political conflict and a freeze on government funds. "The continuation of a leadership vacuum would be detrimental to the best interests of the tribe, particularly in the present circumstances, where the community is in the midst of trying to physically relocate to a new village site due to serious erosion occurring at the present site."	Bureau of Indian Affairs (BIA)	25/05/2017
24/09/2013	Youtube, Vídeo publicado por Yale University	Fran Ulmer, chair US Arctic Research Council	What happens in the Arctic doesn’t stay in the Arctic	Fran Ulmer argumenta sobre a importância de se agir rápido em direção à adaptação no ártico. Lembra também que nada é estático no ártico, mas o mais importante de se considerar é a rapidez das mudanças que estão acontecendo lá: mudanças no clima, na cultura, na economia, nos ecossistemas. Como se adaptar dadas as condições de mudanças que acontecem no ártico? Além disso, fala sobre o impacto no “nosso quintal” das mudanças ocorridas no ártico, seja onde estivermos, pois essa região funciona como o “refrigerador do planeta”. As alterações nessa área ocasionam aumento de tempestades, do nível do mar, alteração das vidas animais. Por isso, por atingir o quintal de todo mundo, ela ressalta a necessidade de se tomar uma decisão, governamental e individual.	Fran Ulmer, chair of US Artic Research Council	01/09/2016
01/11/2013	Huffington Post	Kate Sheppard	Obama Orders Federal Agencies To Take Proactive Approach To Climate Change	a new executive order from Obama administration laying out plans to deal with the impacts of climate change and directing federal agencies to revise programs and policies that might serve as barriers to climate adaptation. The order also calls on federal		06/09/2016

				agencies to identify ways to remove barriers in laws or programs that might make it difficult to address climate-related issues, and to "reform policies and Federal funding programs that may, perhaps unintentionally, increase the vulnerability of natural or built systems, economic sectors, natural resources, or communities to climate change related risks." The order builds out the Task Force on Climate Preparedness and Resilience that President Obama. The task force will bring together local, state and tribal officials to collaborate on approaches for dealing with climate impacts and advise the federal government. Those impacts include heat waves, extreme storm events, droughts, ocean acidification, sea-level rise and the melting of the permafrost.		
15/12/2013	UPI – United Press International	UPI	U.S. pledges aid to help Vietnam counter climate change	The United States was chipping in $17 million to help Vietnam brace for the impact of climate change, because this country is considered one of the most vulnerable in the world when it comes to climate change and a vital food-producing area. The funding through the USAID program would be used by communities in the low-lying areas of Vietnam to reverse environmental degradation and prepare for an anticipated rise in the water level.	John Kerry, Secretary of State	06/09/2016
16/01/2014	United States for Alaska – Lisa Murkowski	Senator Lisa Murkowski	Murkowski to White House: "Put America First" for Coastal Erosion Concerns Senator: Why is Shishmaref Lacking Aid as U.S. Sends Millions to Vietnam?	This letter tries to call out Obama's administration for its contradictory messages on rising sea levels. She writes: "At the same time your Administration has been unwilling to commit the resources to help a community such as Shishmaref, it is prioritizing funding to assist Vietnam with climate adaptation… In short, I ask that you put America first, especially the Alaskans who deal with this reality on a daily basis. As the United States prepares to assume the Chairmanship of the Arctic Council, it is essential we are prepared to address adaption issues in our own Arctic communities."	Lisa Murkowski, Senator in 2014	06/09/2016
9/05/2014	Executive office of the President Council on	Michael J. Boots, acting Chair	Resposta à carta de Lisa Murkowski	The letter says that the office is "looking into how we can best address" the requests from Shishmaref. Boots noted that many of the programs that could provide assistance "may be challenging to access" for the	Michael J. Boots, acting Chair of the Council on Environmental Quality	05/09/2016

	Environmental Quality			community because of requirements for cost-sharing, but said that the administration is "committed to identifying available options" within existing executive authority.	Elizabeth Klein, Associate Deputy Secretary, Department of Interior Kevin K. Washburn, assistant secretary, Indian Affairs, Department of Interior State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience	
14/12/2014	Huffington Post	Kate Sheppard	Climate Change Takes A Village - as the planet warms, a remote Alaskan town shows just how unprepared we are	This article mentions the town history (since 1600) and the relocation decision-making process facing the impacts of warmer temperatures and changing conditions as an immediate threat. What triggered an election to relocate. But while Shishmaref and several other villages have tried to move, they've found that the reality of doing so is much more complicated. Native communities along Alaska's coast have been trying to tell us for more than a decade that climate change's effects are already here. Shishmaref is just the beginning. 16.4 million Americans live in the coastal flood plain. Climate change makes the prospect of a big storm and emergency evacuation more a matter of when, not if. They would become refugees, in Nome, or Fairbanks or Anchorage. That's the one thing many in Shishmaref would like to avoid. The whole point of kicking off a relocation plan, after all, was to ensure that Shishmaref could still be a village — just somewhere else. By moving together, they hoped, they could safeguard the things that make them unique, like their subsistence lifestyle and customs.	Bering Land Bridge National Preserve, a National Park Nora and Richard Kuzuguk, community members Alaska State Library Historical Collections Luci Eningowuk, 65, served as chair of the Shishmaref Erosion and Relocation Coalition Tony Weyiouanna Sr., 55, the president of the board of the Shishmaref Native Corporation Ted Stevens, Alaska's powerful Republican senator Percy Nayokpuk, owner of the island's general store Stanley Tocktoo, 53, the town's former mayor	25/05/2017

					and another advocate for relocation Robin Bronen, executive director of the Alaska Immigration Justice Project and perhaps the region's leading researcher of climate-related migration Reggie Joule, the mayor of the Northwest Arctic Borough The Department of Interior The Bureau of Indian Affairs Jessica Kershaw, press secretary for the Department of Interior The Army Corps of Engineers The Federal Emergency Management Agency Lisa Murkowski, Alaska's senior Republican senator Howard Weyiouanna Sr., Shishmaref's 2014 mayor	
2015	DOI	Esau Sinnok	My World Interrupted	This is a very emotional testimonial from a young resident from Shishmaref about their situation. He starts asking: "Close your eyes and picture your best memory with your family and friends. If you're like me, that memory is filled with the warmth and comfort of a familiar home. I hope that, unlike me, you are never asked to put a price on that home because of the effects of climate change." And the last part he said: "I hope that world leaders will hear my message and rise to the	Interior and State Departments in partnership with Alaska Geographic Arctic Youth	25/05/2017

				challenge because it is not just a political issue to me. It's my future."		
26/05/2015	Huffington Post	Kåre Aas , Geir H. Haarde , Ritva Koukku-Ronde , Björn Lyrvall , Peter Taksøe-Jensen	What Happens in the Arctic Does Not Stay in the Arctic	It is important not only to address Arctic issues locally, but to aim more broadly. The effects of the changing climate and diminishing sea ice, the economic opportunities present in the form of minerals and energy resources (1/3 of the world's remaining oil and gas natural reserves are there), new and more efficient shipping routes, and increased tourism to the region will only increase its importance in the years to come. International cooperation and partnership is needed in most, if not all, of these areas. It is essential that the international community stands together to secure economic growth, stability and peace.	The five Nordic ambassadors to the United States: Kåre Aas , Geir H. Haarde , Ritva Koukku-Ronde , Björn Lyrvall , Peter Taksøe-Jensen Arctic Council powerful intergovernmental platform for managing and shaping the challenges and opportunities related to Arctic region	25/05/2017
26/05/2015 Updated in 26/05/16	Huffington Post	Kåre R. Aas of Norway, Geir H. Haarde of Iceland, Ritva Koukku-Ronde of Finland, Björn Lyrvall of Sweden, Peter Taksøe-Jensen of Denmark	What Happens in the Arctic Does Not Stay in the Arctic	The five ambassadors of Arctic Council were talking about "One Arctic: Shared Opportunities, Challenges and Responsibilities," the overarching theme for the United States Chairmanship of the Arctic Council in that period, which would focus attention on addressing climate change, stewardship of the Arctic Ocean, and improving economic and living conditions in the Arctic. For the five ambassadors, it is important not only to address Arctic issues locally, but to aim more broadly, because what happens in the Arctic does not stay in the Arctic. Due to this is the strategic importance of the Arctic: the effects of the changing climate and diminishing sea ice, the economic opportunities present in the form of minerals and energy resources (1/3 of world's remaining oil and natural gas), new and more efficient shipping routes, and increased tourism to the region will only increase its importance in the years to come. There needs to be a joint responsible balance between protecting the Arctic environment and the need for resource development and management.	The Arctic Council is a powerful intergovernmental platform for managing and shaping the challenges and opportunities related to the Arctic region.	06/09/2016
02/12/2015	Globo	Da France Presse	Câmara dos EUA anula leis de Obama contra emissões de carbono	A Câmara de Representantes dos Estados Unidos, dominada pelos republicanos, aprovou a anulação das leis contra emissões de carbono adotadas pelo governo do presidente Barack Obama (CPP), uma decisão	Mike Bost, representante republicano Jim McGovern, representante democrata	01/09/2016

				simbólica que será vetada pelo chefe do Executivo. Estas normas foram consideradas uma facada no coração da indústria do carvão, disse o representante republicano Mike Bost. O representante democrata Jim McGovern reagiu afirmando que os republicanos "não têm soluções, não querem negociar, seu programa consiste em dizer 'não' a todos, o que é uma garantia de catástrofe".		
02/12/2015	Globo	Rafael Garcia	Congresso dos EUA não deterá acordo global do clima, diz Fabius	Após notícia sobre o veto ao CPP proposto por Obama, a repercussão na COP21 não foi de muita surpresa, e o ministro francês, Laurent Fabius, que presidia a COP disse que isso não afetaria os acordos ali firmados, por se tratar de uma questão global.		01/09/2016
15/12/2015	Época	Bruno Calixto	Ártico está esquentando duas vezes mais rápido que o resto do planeta	O Ártico está aquecendo duas vezes mais rapidamente do que outras partes do planeta, com ramificações para o ecossistema e também para a segurança global, clima, política e comércio. Perder gelo no verão é normal, mas a quantidade e a velocidade dessa perda não é normal.	Rick Spinrad, NOAA, a agência de oceanos dos EUA	01/09/2016
28/12/2015	The Atlantic	Rebecca J. Rosen, Adrienne Green, Li Zhou, Alana Semuels, And Bourree Lam	Can the Planet Be Saved? Experts on ecology, conservation, and climate change offer their reasons for optimism and pessimism going into 2016.	This is an article that brings together some important researchers to talk about the climate crisis, and their despair and hopes. Robin Bronen talked and used Shishmaref case to demonstrate that the gross injustice of their experience adds to my despair because those who have done the least to cause our climate crisis are bearing enormous losses. Their experience also shows that we are completely unprepared to respond to the humanitarian crisis which will be caused by rising seas forcing millions of people from their homes, their heritage, and the places they love. Reason for hope: Solidarity—the recognition that all of humanity is connected to each other and to the Earth—gives me hope. This understanding that we are one people living on a shared homeland is embedded in the climate-justice movement. The Arctic, the harbinger of dramatic environmental changes, reminds us of this connection.	Robin Bronen	25/05/2017
09/02/2016	Boomberg	Greg Stohr Jennifer A Dlouhy	Obama's Clean-Power Plan Put on Hold by U.S. Supreme Court	A divided U.S. Supreme Court blocked President Barack Obama’s sweeping plan to cut emissions from	EPA – Environmental Protection Agency	01/09/2016

				power plants, putting on hold his most ambitious effort to combat climate change. The delay is a blow to Obama's environmental agenda, highlighting the prospect that his signature program for combating climate change could be in legal jeopardy. It also risks undermining the U.S. commitment to pare greenhouse gas emissions as part of an international accord reached in Paris last December.		
16/02/2016	**Open Migration**	Sáskia Sassen	Why "migrant" and "refugee" fail to grasp new diasporas	The language of immigration and refugees is insufficient to capture an emergent history». Water shortages, pollution, climate change, produce millions of new victims. We need new tools to understand and protect new massive displacements. The traditional concepts and policies concerning the immigrant and the refugee, are not enough today to address the current migration phase. Existing policy is not prepared to address new types of conditions producing massive displacements and neither is it prepared to deal with the consequences of such displacements. At the heart of my argument here is an emphasis on the need for the governance of a range of very different types of actors generating displacement than those addressed by the humanitarian system.		04/05/2017
17/02/2016	Bloomberg	Jennifer A Dlouhy Andrew M Harris	Scalia Vacancy Boosts Prospects for Obama's Carbon-Cutting Pla	Aumentam as esperanças para aceitação do Clean Power Plan, proposto por Obama, ser aceito no Supremo Tribunal após a morte de Scalia. O CPP elaborado pela EPA propõe redução das emissões de CO2 de usinas de energia de 32% abaixo dos níveis de 2005 até 2030, incentivando os estados e utilitários para usar menos carvão e mais energia eólica, energia solar ou gás natural, dando metas gerais para cada estado atender - em vez de se concentrar em usinas individuais.	James Salzman, Professor de Environmental Law na UCLA (California) salzman@law.ucla.edu	01/09/2016
27/03/2016	ADN	David James	More than global warming afflicts endangered Shishmaref	This article mentions Marino's book: Fierce Climate Sacred Ground . Marino explains that Shishmaref is a small village of people living a deeply traditional lifestyle who are in danger of losing everything to forces far away and beyond their control. This understanding is true to an extent, but it overlooks the	Elizabeth Marino, anthropology researcher	25/05/2017

				history of the community. She makes the question: "Is the risk posed to Shishmaref the product of climate change or the product of a history of development that ignored local knowledge and removed local adaptation strategies?" and she argues that: "the simple equation that anthropogenic climate change = erosion = relocation is not an accurate analysis of this complex sociological system." This differs from climate crises in developing nations, where a combination of political ineptitude, economic failures and environmental challenges created vulnerable populations and where rising temperatures are simply the final blow to fragile communities.		
18/06/2016	Exame	Lesley Wroughton, da REUTERS	Com mudanças no Ártico, EUA temem catástrofe climática	O secretário de Estado dos EUA, John Kerry, faz visita ao ártico e se assusta com a velocidade das mudanças causadas pelo aquecimento global. Ele classificou as mudanças climáticas como "a arma de destruição em massa mais temível do mundo."	John Kerry, secretário de Estado dos EUA	
25/06/2016	The Guardian	Suzanne Goldenberg	Climate scientists urge Obama to rule out more Arctic oil and gas exploration	Nearly 400 international scientists called on Barack Obama to rule out further expansion of oil and gas exploration in Arctic waters under US control. The scientists called for further protections to areas important to native Alaskan fishing and hunting – including migration routes for whales and seabirds, said in a statement. According to Jane Lubchenco, conserving important marine areas is an essential step in sustaining the region's resilience.	Jane Lubchenco, who headed Noaa during Obama's first term	29/09/2016
16/08/2016	The Guardian	Nicky Woolf	Alaskan village votes on whether to relocate because of climate change	Now that the ice is melting, the village is in peril from encroaching waves, especially as the permafrost on which it is built is thawing, and crumbling beneath the mostly prefabricated houses. "Over the past 35 years, we've lost 2,500 to 3,000 feet of land to coastal erosion," wrote Esau Sinnok.	Esau Sinnok, Arctic Youth Ambassador Department of the Interior (DOI)	25/05/2017
18/08/2016	UPI	Shawn Price	Alaskan town votes to relocate as climate change submerges island	"We don't see the move happening in our lifetime because of the funding" According to the U.S. Department of Housing and Urban Development. Another 200 to 300 villages face similar risks in the next few decades	The Army Corps of Engineers U.S. Department of Housing and Urban Development	25/05/2017

19/08/2016	NY Times	Christopher Melee e Daniel Victor	Reeling From Effects of Climate Change, Alaskan Village Votes to Relocate	This article shows the second phases of the decision-making process of relocation in Shishmaref. This time the difference on votes was not so large: 89 to 78 to leave. It reflected a division among residents. And who voted against relocating were not opposed to moving but were unhappy with two potential sites for future home. Efforts to move the town in 1973 and 2002 were derailed by several issues, including attachment to a school built in 1977 and concerns about the long-term viability of alternate sites. Officials spent more than $27 million from 2005 to 2009 on coastal protection measures that had a life expectancy of 15 years, according to the relocation study. The question of moving remained an emotional topic, Mr. Sinnok added. “It’s been really hard for me and my family to really discuss this because Shishmaref is our home; it’s where our heart is,” he said. “It’s where I want to be buried.”	Arctic Institute, a nonprofit group in Washington that studies issues affecting the Arctic. Alaska Public Media Mr. Sinnok, resident	25/05/2017
01/09/2016	Huffington Post	Kate Sheppard	Obama To Announce New Climate Change Help For Island Nations	Obama announced $40 million in programs to help island nations and other communities vulnerable to climate change, signing a changing tone on the need to deal with climate impacts already underway. The White House said the Obama administration is prioritizing helping countries adapt to climate shifts already underway, rather than just focusing on efforts to cut emissions driving the problem. The article was about the “Symposium on Climate Displacement, Migration, and Relocation” in Dec. 2016 in Hawaii, which will deal with climate relocation and adaptation needs in the U.S. (Alaskan native and coastal Louisiana are already working on relocation due to erosion and sea level rise.	White House Symposium on Climate Displacement, Migration, and Relocation	02/09/2016
13/09/2016	TED	Sheila Watt-Cloutier	Human Trauma and Climate Trauma As One | Sheila Watt-Cloutier | TEDxYYC	Sheila Watt-Cloutier urges us to recognize the intimate connection between the suffering of Aboriginal peoples and the degradation of the global climate. Trauma at the human level and trauma on the planetary level are one and the same. Both the consequences of the historical suppression of Aboriginal cultures and the trauma we now inflict on our planet as a result of misguided human interventions are normal reactions to abnormal circumstances.	Sheila Watt-Cloutier, Inuit activist	25/05/2017

				She tries to show us that the Ice as identity and mobility symbols for Inuit and Arctic people is also “the air conditioning” for the rest of the world, highlighting the idea of “what happens in the Arctic doesn’t stay in the Arctic”. She shows the common ground, the connection between them and the planet.		
9/11/2016	Business Insider	Dina Spector	Donald Trump doesn't believe in climate change — here are 16 irrefutable signs it's real	This is an article that brings several graphics and pictures related to the overwhelming scientific evidence that our planet is warming, contradicting the Trump’s position about climate change.	Nasa NOAA EPA IPCC	29/05/2017
11/11/2016	Business Insider	Lindsay Dodgson	The biggest threat to Earth has been dismissed by Trump as a Chinese hoax	This article argues that Trump's history of opinions about global warming is concerning. In November 2012, US President-Elect Donald Trump tweeted that global warming is a Chinese hoax designed to bring down US business and manufacturing. Besides that, Trump wants to backtrack on a lot of the progress that has been made recently, such as: to dismantle the USA's involvement in the Paris Climate Agreementt, to point a climate change denier as EPA administrator, and, undervalues wind farms as "disgusting looking" and "bad for people's health". Trump has also expressed the desire to ramp up the fossil-fuel production and re-start the Keystone pipeline process; both decisions that would be detrimental to the environment. The fact that the new president of the US has repeatedly disagreed with the science is concerning, not just for the future of climate science, but for everyone that lives on earth. The USA is the second largest emitter of carbon dioxide, so if Trump makes decisions to make the situation even worse, we could all suffer.	EPA	29/06/2017
17/11/2016	The Guardian	Tom Phillips	Climate change a Chinese hoax? Beijing gives Donald Trump a lesson in history	China points out to global warming denier and president-elected that Republicans under Reagan and Bush actually put global warming on international agenda.		29/05/2017
17/01/2017	DOI	OFFICE OF THE SECRETARY	Lifting Their Voices for Change	This is an article about the power of youth for changing the situation in Arctic, with some of the Arctic Youth Ambassadors testimonials. They added their voices and solutions to a global conversation about how to sustain communities, cultures and the environment in a changing Arctic. And	Arctic Youth Ambassador program is a partnership among: U.S. Fish and Wildlife Service-Alaska	25/05/2017

				they used a lot the argument that what happens in the arctic doesn't stay there. They also attended key policy sessions with trained scientific and policy experts to familiarize themselves with issues like climate change, biodiversity, the sensitive Arctic ecosystem and the dependence Arctic residents have on these resources. Taking lessons learned back to the peers in their own communities.	Region, U.S. Department of the Interior, and U.S. Department of State and Alaska Geographic Arctic Council Secretary Sally Jewell and Secretary of State John Kerry	
19/03/2017	CNN	John Sutter	Tragedy of a village built on ice	Esau Sinnok, a 19-year-old born. The one, among many, who's trying to imagine another future for this village. A future away from this island. Esau started to wonder: Could Shishmaref actually survive the melting of the Arctic? Was his village's life nearing its end? Or the start of a new beginning? Here, and across the Arctic, sea ice is forming later and thawing earlier. That ice protects Shishmaref's coast from erosion. Without it, punishing storms grab hunks of the land and pull it out to sea, shrinking and destabilizing the island. "My future generation of kids will be the last ones that will actually be on the island of Shishmaref before it completely erodes away," Esau tells Rae in the Paris interview. Experts say there are no programs -- in the United States or internationally -- designed specifically to plan and fund climate-driven relocations. Only a few moves have been funded with money designated for climate adaptation projects, said Elizabeth Ferris, research professor at Georgetown University's Institute for the Study of International Migration. "There's no federal or state law -- no institution in the United States -- with a mandate for how are we going to manage relocation internally," said Alice Thomas, the climate displacement program manager at Refugees International, a non-profit group. "It's going to be enormously expensive. It's going to be very vulnerable people ... people who aren't going to be able to cut their	Shelton, Clara Kokeok, Hazel Fernandez, residents Esau Sinnok, Youth Leader and his aunt Bessi Sinnok. The Obama White House named Esau a Champion of Change for Climate Equity Esau Weyiouanna, an antecessor leader that tried to keep the culture values US National Snow & Ice Data Center Ken Stenek, science teacher at Shishmaref school Percy Nayokpuk owns one of two stores in town Elizabeth Ferris, research professor at Georgetown University's Institute for the Study of International Migration Alice Thomas, the climate displacement program manager at Refugees	29/05/2017

				losses on their home when they can't get flood insurance. Where will they go?" In Shishmaref, the answer remains unclear. Responsibility for Shishmaref's plight falls on those in the industrialized world who continue to pollute the atmosphere with carbon, knowing it will warm the climate, melt the ice and make it less likely Shishmaref will survive. It falls on the Trump administration, which has moved to defund and upend climate change initiatives instead of planning for a transition to cleaner power sources, like wind and solar. It falls on politicians who know the scope of the impending climate relocation crisis but have done little to make adequate plans or secure appropriate funding. The question now is whether villages, like people, can be reincarnated. Can Shishmaref be reborn? Sadly, it's a question the village cannot answer on its own.	International, a non-profit group Annie Weyiouanna, local coordinator for the Native Village of Shishmaref Robin Bronen, executive director of the Alaska Institute for Justice and a senior research scientist at the University of Alaska Fairbank	