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CLIMATE AND SECURITY IN LATIN AMERICA AND THE CARIBBEAN

Adriana Erthal Abdenur,
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CLIMATE CHANGE AND SECURITY IN THE AMAZON: VULNERABILITY AND RISKS FOR INDIGENOUS PEOPLES ON THE ACRE-UCAYALI BORDER

Marco Cepik
Hannah Machado Cepik

ABSTRACT

This article analyzes the mechanisms causally linking climate change and human security. A common trajectory is found to be aggravation of pre-existing social vulnerabilities, occurrence of extreme weather events, institutional failures and / or predatory policy enforcement, and increased insecurity of specific population groups. In the Amazonian context, two similar cases are compared, in which floods on the Jordan River (Acre) and the Ucayali River (in the Peruvian department of the same name) impacted indigenous communities of the Pano language group. Case-specific dynamics have allowed us to identify how public mitigation policies can distinctly affect the resulting insecurity depending on the point in the chain of events at which they are implemented. It was also possible to see how, in the face of institutional failures and even in the presence of powerful coalitions of interests against environmental protection and indigenous peoples, affected populations are able to formulate consistent responses that result in improved human security through demands and proposals for transversal public policies.

Keywords: **climate change, Amazon, Huni Kuin, Shipibo-Conibo, security.**

INTRODUCTION

The insecurity of indigenous peoples in the Amazon is compounded by climate change and the actions and omissions of various actors in the region. The perceptions and struggles of indigenous groups about the nexus between climate change and security, as well as the speeches and silences of local, national and international governmental actors, constitute the empirical referent of the work.

This article seeks to answer two questions. What are the mechanisms that causally link climate change and the insecurity of specific population groups? What public policy demands related to insecurity can be identified in the case of the Huni Kuin (Kaxinawá) indigenous people in Acre and Shipibo-Conibo in the Ucayali, on the Brazil-Peru border? To answer them, the article was organized into three sections, followed by a conclusion in which we sought to include recommendations based on the research conducted.

CLIMATE CHANGE AND INTERNATIONAL SECURITY: MECHANISMS

It is important to start with some basic definitions because the connection between climate change, global warming and international security is controversial (Mach et al. 2019).

In the World Bank's Climate Change Knowledge Portal glossary of terms, the phenomenon is defined as an observable transformation in the average and / or variability of climate properties over a prolonged period of time caused by natural and human factors (World Bank Group 2019). In turn, global warming is defined by the estimated increase in the average surface temperature of the planet (GMST) over a 30-year period, considered from a reference year or decade, in relation to pre-industrial temperature levels. (IPCC 2018).

Security can be defined as "a relative condition of protection in which one can counteract discernible threats against the existence of someone or something" (Cepik 2001). When it comes to living beings, anything that threatens life is a security problem. However, to avoid excessive expansion of the concept, it is necessary to link human insecurity to the existence of violence. According to a definition adopted by the United Nations,

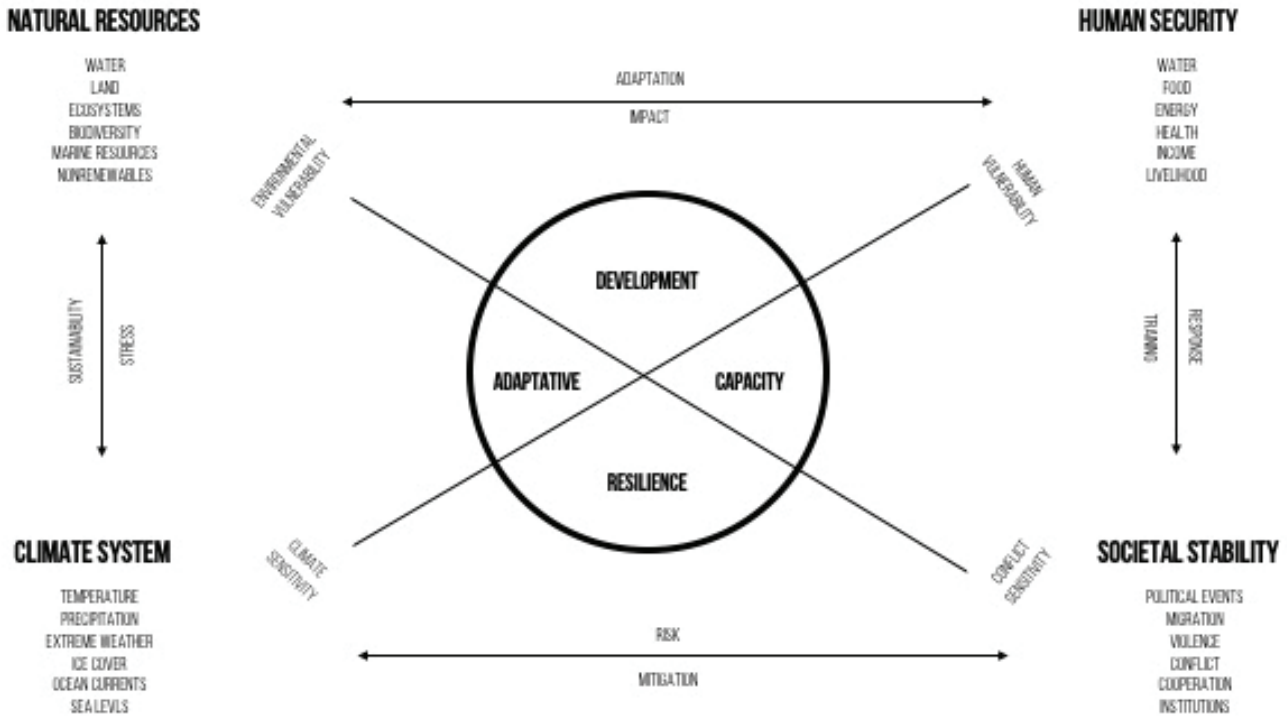
violence is the intentional use of physical force or power, threatened or performed, against oneself, another person or against a group or community, which results or is highly likely to result in injury, death, psychological damage, poor development or deprivation. (United Nations 2014: 84)

The intensity and scale (local, national, regional and global) of the causal link between climate change and international security vary significantly across different models and theories. For example, Thomas F. Homer-Dixon (1991) characterized the degradation of the environment as a result of human action as a direct (resource scarcity) or indirect (relative deprivation and identity) cause capable of increasing the likelihood of violent conflict involving affected social groups. Intervening variables such as social network institutions, technology and topology were also considered relevant to explain specific outcomes as well as adaptation and mitigation potentials (Zhang et al. 2007). There is no consensus

I expert opinions on future scenarios with nonlinear emerging properties. Still, in a study using a panel of 11 of the world's most cited experts on climate and conflict (expert elicitation), Katherine J. Mach et al (2019) identified climate change as a causal factor cited by experts at 3-20% of intra-state conflicts in the last century. In addition, experts' average estimate is that the risk of violent conflict will increase by 13% in 2° C global warming scenarios and 26% in scenarios approaching 4° C.

Recognizing that more research is needed, we provisionally adopt the model developed by Jürgen Scheffran et al (2012), summarized in Figure 1, for monitoring and evaluating the relationships between climate change, natural resources, social stability and human security at different space-time scales. The model's premise is that security risks are causally linked to the unequal effects of climate change for different social groups and ecosystems. Vulnerability would be, even when there are no direct armed conflicts over scarce resources, the most important variable in contexts of uncertainty about future impacts. The degree of vulnerability would therefore depend on 1) the degree of exposure to climate change; 2) sensitivity to climate change; 3) adaptation and mitigation capabilities. Reducing vulnerabilities would therefore be the main focus of public risk prevention policies and mitigation of negative effects.

Figure 1 - Diagram of Relations between Climate Change and Security



Source: Scheffran et al. 2012: 870

It is also worth adding one last argument about the dialectical relationship between vulnerability and threat. Extreme weather events, such as droughts, fires, storms, and floods, for example, do not constitute "threats" in the literal sense of the hostile intention to harm others. However, as the scientific and political consensus on the specific human causes of global warming advances, actions and omissions of the rulers and the powerful that cause harm (often irreversible) become malicious.

That is, environmental conflicts are not restricted to distributive and redistributive economic and cultural aspects involving natural resources. They are, ultimately, issues of life and death and, therefore, must also be analysed from the point of view of international security. After all, since the United Nations Conference on Environment and Development (Rio de Janeiro, 1992) until the last Conferences of UNFCCC signatories (Bonn and Santiago, 2019), the international recognition of the collective right to development and the responsibilities differentiated in preserving the environment. That is why the Trump administration's decision to remove the United States from the Paris Agreement is indeed a threat to global collective security (Zhang et al. 2017). Similarly, the disastrous actions and statements of the Bolsonaro government in the area of environmental governance directly threaten the security of the most vulnerable populations (Trigueiro 2019).

AMAZON: ENVIRONMENTAL MISMANAGEMENT AND HUMAN INSECURITY

According to the World Bank's Climate Change Knowledge Portal, the average annual temperature in Brazil has increased by about 0.7° C over the past fifty years (World Bank Group 2019). Moreover, all variables on drought and rainfall in Brazil are strongly sensitive to what happens to the Amazon in the coming decades.

The Amazon rainforest covers most of the South American Amazon Basin, but important ecosystems and the headwaters of major rivers are found in neighbouring countries. Overall, the Amazon plays an important role in the planetary carbon cycle, while being a vulnerable and sensitive region to climate change and global warming. The climatic, ecological and environmental stability of the Amazon rainforest is threatened by natural (including specific hydrological cycles of the western Amazon basins) and anthropogenic events, both global and local. Despite research carried out with different modelling, "science still cannot pinpoint how close we are to a possible breaking point of ecosystem equilibrium and even much of the Amazon biome" (Nobre et al. 2007: 25). In the context of global climate change, it is estimated that the average temperature in the Amazon could rise to 4ºC according to the models analyzed by Ambrizzi et al. (2007). According to Brandão (2019), currently the main changes reported in the rainforest are related to the amount and patterns of rainfall and deforestation.

In Brazil, the administrative region called the Legal Amazon (formed by the states of Acre, Amapá, Amazonas, Maranhão, Mato Grosso, Pará, Rondônia, Roraima and Tocantins) covers 59% of the Brazilian territory, and about 23 million inhabitants live there according to the 2010 Census. The largest biome in the Legal Amazon is the equatorial forest. In addition to having more than 11,300 km of borders with seven countries and more than 25,000 km of navigable

rivers, the equatorial climate and the rain cycle (34% of annual precipitation comes from evaporation) positively affect other biomes such as the Pantanal, the savannah and even the Atlantic Forest.

As the largest of Brazil's six major biomes, with the largest biodiversity on the planet, large hydroelectric potential, mineral riches and cultural diversity (much of Brazil's indigenous population), the Amazon faces important challenges from the standpoint of sustainable development and human security. In recent decades there have been important institutional advances. As a result, there was a marked reduction in the deforested area of the Legal Amazon (from 27,800 km2 in 2004 to a historic low of 4,600 km2 in 2012), according to data from the National Institute for Space Research (INPE in Portuguese). Since then, and more intensely since the fall of president Dilma Rousseff in 2016, the pace and deforested area has increased. If preliminary INPE figures are confirmed, between August 2018 and July 2019 about 6,200 km2 were cleared in the Legal Amazon.

Along with deforestation, other forms of natural resource degradation have increased over the past three years through burning, illegal mining, land grabbing and biopiracy of fauna and flora. Such criminal acts, perpetrated by different groups and companies, pose direct threats to the security of the most vulnerable populations, such as slave-like workers, women, indigenous people, and *quilombolas*. For example, according to data from the Pastoral Land Commission (CPT in Portuguese), in the Brazilian Legal Amazon there were 48 of 61 murders in field conflicts (79%), 50 of 74 assassination attempts (68%), 391 of 571 physical assaults, 192 out of 228 arrests and 171 out of 200 registered death threats (86%) in 2016. Since the 2018 elections, Bolsonaro has adopted increasingly destructive stances and policies against environmental governance institutions, vulnerable populations and funding mechanisms including the Amazon Fund. In August 2019, when 74,000 outbreaks of Amazon fires were detected, the Bolsonaro government reiterated a hostile course of action and the crisis took on an international dimension (Phillips, 2019).

Environmental degradation affects the most vulnerable social groups the most. In the Amazon, traditional communities and indigenous peoples are among the most vulnerable groups (Rocha et al. 2012). In general, the security of the region and its inhabitants would therefore depend on an increasingly integrated and democratic role of the Brazilian state, neighbouring countries and affected populations, especially indigenous peoples (Abdenur et al. 2019). However, the Bolsonaro government's foreign policy is also moving toward dismantling regional cooperation structures in South America.

CLIMATE AND INDIGENOUS INSECURITY IN ACRE AND UCAYALI

In the Amazon region, therefore, if climate change is not necessarily a cataclysm, it usually operates as an aggravation of previous problems experienced in a region or group. This is the case of indigenous peoples in the border region between Brazil and Peru, corresponding to the state of Acre and the department of Ucayali.

In the case of Acre, according to the Instituto Socioambiental (ISA in Portuguese), many of the state's 26 approved indigenous lands (LIs) (2.39 million hectares, or 14.56% of Acre's area) are near rivers where there were significant hydrological variations in the last years. As one of the largest indigenous groups in the region, the Huni Kuin are divided between Brazil and Peru, having been separated in the twentieth century as a result of violent conflicts with rubber tappers ("seringalistas" in Portuguese) (Aquino 1993). Groups that focused on a "seringal" on the Envira River, for example, moved to the headwaters of the Purus River in Peru. The relationship between different groups in the two countries is reproduced through marriages, but there are striking differences. For decades, the migratory movement has not ceased, and free movement across borders is done across rivers (Aquino and Iglesias 1994; 1999). There were about 10,818 Huni Kuin living in Acre in 2014.

Ever more vulnerable and struggling for their rights, the increased risk of insecurity for the Huni Kuin can be seen in the floods that have occurred in Acre in recent years. In 2015, in the face of floods in various places in the state of Acre, a state of calamity was decreed. In the Acre River, about 20 villages were affected in the municipalities of Assis Brasil, Seine Madureira, Feijó and Tarauacá. Heavy rains that started in January of that year and caused the river to rise 24 centimetres in one day affected the Huni Kuin, Yawanawá, Jaminawa and Manchineri peoples. It was the largest flood recorded (17.92 meters), surpassing the record of 1997, when the river rose 17.66 meters. Although February is the state with the highest rainfall in the state (Duarte 2006), the river's ebb was affected by heavy rainfall over a 24-hour period. In 2017, a sudden flood on the Jordan River made Huni Kuin families homeless (Nascimento 2017). At the time, the Acre Fire Department reported that a non-working telemetric station of the National Water Agency (ANA) should have made the reading of the river, which has no ruler. The flooding of the river left uninhabited people unattended until the river could flow. In the face of the 2017 floods, the only official pronouncement was made by the mayor of the city of Jordan (AC), in an interview with journalists: "this is how it is, by the river being located at the headwaters, it fills and leaks fast. It doesn't stay long. It seems that there was no flood" (sic). The city council, which made cars and boats available for families to evacuate in a palliative measure in a place hard to reach for emergency relief, interpreted the event, although sudden, as something to be expected and about what there would not be much to do. Through this kind of mechanism, the vulnerability of indigenous people becomes insecurity.

Conscious of the risk they are taking, in the open letter to governments and society released in Boa Vista in May 2019, representatives of Ashaninka, Huni Kuin, Shawadawa, Yawanawa, Nukini, Noke Koe (Katukina), Shanenawa, Puyanawa, Manxineru, Kuntanawa, Jaminawa and Madija included in their claims the recognition that the impacts of climate change as an issue that aggravates risks to life and the forest.

The same indigenous protagonism in the face of increased vulnerability and insecurity is found in the case of Shipibo-Conibo living in the Ucayali department of the Peruvian Amazon. The name Shipibo-Conibo results from alliances of various populations in the face of demographic losses, as a result of the shock with the European presence. "Since then, Shipibo-Conibo lands have been dotted with other ethnic groups (Piro, Campa, Ashaninka, Cocama) and mixed villages (Caseríos), with which relations are sometimes courteous, often tense" (Colpron 2005). On the streams of the Ucayali River live more than 11,000 Shipibo-Conibo in over 140 communities.

Due to flooding that occurred on the Ucayali River in 2010-2011, Shipibo-Conibo communities experienced an unexpected increase in food insecurity. Drawing on structured fieldwork and using participatory research methods across multiple seasons, the research by Sherman et al. (2016) documented how flooding initially created opportunities for increased fishery and agricultural production in the locality of Panaillo. However, indigenous families lacked the resources to exploit the opportunities presented by extreme conditions and increasingly turned to migration as a mechanism to address vulnerability. International aid organizations have set up in the region in response to the floods, introducing programs and providing training sessions for local institutions. However, weakened local institutions have continued to disregard the growing magnitude and frequency of climate extremes, well documented in the region in recent decades.

That is, even when climate events create opportunities, depending on previously existing vulnerability and institutional and community responses, the result may be increased insecurity. The Shipibo-Conibo case highlights the importance of considering both slow and fast impulses in assessing the vulnerability of the food system to an extreme hydrological event. For example, according to Sherman et al. (2016), many of Panaillo's residents were forced to migrate to urban centers. Shipibo-Conibo women continued their production and sale of handicrafts, but the profits did not cover the full cost of living in the city. In turn, migrant men began to work as labourers in plantations, logging and even construction. Food insecurity reproduced both inside and outside Panaillo. As local institutions and social participation were already relatively weak, even external mobilization was insufficient to prevent increased food insecurity. During the interviews, Sherman et al. also identified a low perception in Peruvian institutions about the importance of climate change. About 25% of respondents denied that Ucayali droughts and floods had any connection with global climate change. One respondent said that for him, climate change was just a word, but extreme floods and droughts had worsened over time.

As in the case of the indigenous people of Acre, it was up to Peruvian indigenous leaders to link climate change and increasing insecurity in vulnerable communities. During COP 24 in Katowice, Poland, women leaders of indigenous associations and organizations took a firm stand in favour of mitigation and adaptation actions. At the event, the leaders emphasized the participation and empowerment of women in the theme, as well as the allocation of joint activities for the entire indigenous population. In Peru, it is common for indigenous women to be responsible for family food sustenance, to be knowledgeable of medicinal plants, and to carry ancestral wisdom through shamanism (Colpron 2005).

According to leaders, many of the problems of adaptation within indigenous communities have been solved by women seeking to ensure family food sustenance (Servindi 2018). In addition to the problems posed by climate change, Peruvian indigenous leaders also denounced environmental degradation and negative social impacts caused by large timber, oil, natural gas and other mineral resources projects. According to the report *The Human Rights Situation of Indigenous Peoples on the Acre-Peru Border*,

> projects for oil and natural gas exploration by the Brazilian and Peruvian governments are being defined and implemented without any free, prior and informed consultation with the local communities and their organizations (Servindi 2018).

Beyond the local level and the strengthening of vulnerable groups themselves seeking to improve their security and experience a more sustainable type of development, the systemic characteristics of the climate transition and the enormity of the Amazon region also depend on institutional, political, national, regional and global responses.

For example, already in 2015, the National Indian Foundation (FUNAI in Portuguese), in its territory protection training program 'Environmental services: the role of indigenous lands', stated:

> In recent times, indigenous peoples have verified and reported different facts that prove the impacts of climate change on their daily lives and on their traditional ways of life. Stories about longer periods of drought or rain, as well as changes in tree fruiting and fish reproduction. (FUNAI 2015: 98)

Indigenous Lands (ILs), through their leadership and indigenous agroforestry agents, must know and mitigate the unknown effects of the climate transition, as well as to reduce deforestation and environmental degradation in the Amazon. The ILs comprise 25% of the Brazilian Legal Amazon territory, and the historical rate of deforestation in its interior corresponds to 2% of its extension. Thus,

> The National Policy for Environmental and Territorial Management in Indigenous Lands (PNGATI [in Portuguese]), established by Decree 7,747 of June 5, 2012, aims to promote the protection, restoration, conservation and sustainable use of natural resources of indigenous lands and territories. The policy also ensures the integrity of the indigenous heritage, the improvement of the quality of life and full conditions of physical and cultural reproduction of the present and future generations of indigenous peoples, respecting their sociocultural autonomy. That is, PNGATI aims to maintain the environmental services provided by indigenous peoples. Therefore, it is the main instrument for thinking and discussing PES strategies in Brazilian indigenous lands. These instruments need to be used with skill by indigenous peoples, so that their rights are guaranteed, new alternatives for environmental and territorial management and future projects are designed with protagonism and autonomy. (FUNAI, 2015)

As the Huni-Kuin and Shipibo-Conibo cases demonstrate, indigenous peoples perceive the link between social vulnerability, environmental degradation and increased risks to their security (forced displacement, food insecurity, violence, etc.). And indigenous leaders demand public policies for prevention and mitigation. As institutions fail or aggravate stressors, they contribute to increased insecurity.

In this sense, the "disastrous scenario" of the current policies of the Brazilian federal government for the environment constitutes a threat to the security of the most vulnerable social groups. In addition to openly flirting with the crudest denialism about climate change, the Bolsonaro government systematically acts in favour of predatory interests (Trigueiro 2019). Suffice it to mention the deliberate weakening of the oversight and punishment capacity of the Ministry of Environment's bodies in 2019, the untying of the National Water Agency (ANA), the suspicion cast by the minister on all 334 Conservation Units in the country, the attempt changes in the way Indigenous Lands are instituted in Brazil, the denial of the criminal character of burning and the open defence of the end of legal reserves.

Even at the state level, the current government of Acre threatens to dismantle or divert the purpose of previously created structures such as the Institute for Climate Change and Environmental Services Regulation (IMC), created by Decree 1,471 / 2011. Bodies such as the BMI and institutions such as the Acre Indian Commission (CPI Acre, in Portuguese) interacted with civil society entities such as the Acre Indigenous Agroforestry Movement Association (AMAAIAC, in Portuguese), the Acre Indigenous Teachers Organization (OPIAC, in Portuguese) or the Huni Kuin Artists Movement (MAHKU, in Portuguese), for the development of projects and actions.

To exemplify the connection between local and international, it is worth highlighting an initiative of S.O.S. Amazon together with the Acre Pro-Indian Commission, supported by Amazon Cooperation Treaty Organization (ACTO, or OTCA, in Portuguese) and the Acre government between 2004 and 2012. Under that partnership, the project Strengthening Acre-Ucayali Border Integration was able to actively incorporate indigenous and agro-extractive community leaders (OTCA 2011). It also recognized the chain of causal links linking threats to human security from organized crime (loggers and drug traffickers), environmental degradation and lack of sustainable development. In Acre, eight Indigenous Lands and residents of four communities on the banks of the Juruá River received support from that project. In Peru, the Pronaturaleza Foundation and the Universidad Nacional de Ucayali supported communities in the Abujão River Valley (SOS Amazonia 2012).

Such an initiative would hardly be supported by the current framework of institutional dismantling and threats to forest peoples. Suffice it to recall the failure of the ACTO, the difficulties in implementing the Paris Agreement and the crisis triggered by the burning of the Amazon region in 2019. Hence the importance of the leading role of indigenous people, social movements and citizenship.

CONCLUSION

Climate change projections indicate an increase in the frequency and intensity of environmental hazards such as droughts and floods (Sherman et al. 2016). However, it is not yet possible to accurately predict the intensity and consequences of such risks (Nobre et al. 2007). Thus, the importance of understanding the vulnerability of indigenous and traditional communities in the Amazon rainforest in the face of extreme weather events grows (Bursztyn et al. 2012).

Based on an explicit model of the mechanisms causally linking environmental degradation, social vulnerability and insecurity, two cases of flooding affecting Huni Kuin communities in Acre and Shipibo-Conibo communities in Ucayali were analysed. Although it is the same type of weather event (flood) the lessons and implications of both events are distinct and complementary.

The Huni Kuin case demonstrates an event considered isolated by the municipal and state government. The individual consequences of people affected by the floods of the Jordan River are large for personal life, but it is not even considered as a problem by local and federal authorities. It thus represents the early phase of a chain of nonlinear events that tends to result in insecurity. Bolsonaro government statements and actions amplified the chances of increasing risks being taken as fatalities or isolated cases. In the case of Shipibo-Conibo, research-reported food insecurity indicates a more advanced stage in the causal chain. Flooding, combined with weak local institutions, has enhanced the transformation of vulnerabilities into insecurity.

In common, both cases indicate how institutional neglect and failure to deliver consistent public policies over time can aggravate the links between social vulnerability and insecurity. On the other hand, it is extremely important that the proposals made by the indigenous leaders themselves in Acre and Peru are incorporated and prioritized as a way to reduce vulnerability and increase resilience. For example, in the Acre Indigenous Leadership Letter there is a demand for the restoration of indigenous health policies dismantled by the Bolsonaro government in 2019. In practice, indigenous health public policies are configured to mitigate environmental degradation because many of the problems of indigenous health are aggravated by climatic and environmental events on indigenous lands. The letter also mentions “disregard for the evidence

and impacts of climate change" on Amazonian lives. From the state government is required, among others, that programs, policies and actions for indigenous lands follow the National Policy for Territorial and Environmental Management (PNGATI). International cooperation is also requested that, in view of the political conjuncture described in the letter, consideration should be given to opening direct financing lines for indigenous associations as a way of contributing to the defence of rights and protection of the Amazon Forest and its biodiversity.

Events such as the 'Meeting of Indigenous Peoples of the Border' between Brazil and Peru, which promote cooperation between indigenous leaders of the region, residents of extractive reserves and institutions such as FUNAI, much to the contrary as "threatening Brazilian sovereignty and national security", contribute to make effective the regional integration advocated in the Brazilian Constitution. For over ten years, the meetings have contributed to highlighting social and environmental issues, the situation of indigenous peoples and threats to territories (CPIAcre 2019). Similarly, the Working Group on Cross-Border Protection advocated that all border development actions be carried out with the full participation of the indigenous and traditional peoples of the region, based on the principles of sustainable development and forest conservation, respecting the territories and modes of life.

As is well known, the Intergovernmental Panel on Climate Change (IPCC) scenarios range from 0.3 to 1.7 ° C (lowest), or between 2.6 and 4.8 ° C (highest) for the planet as a whole. Even in the most optimistic scenario, rising sea levels and acidification, degradation of biomes, expanding deserts in tropical regions, recurrence of extreme weather events such as (droughts, floods, heat waves, storms), and biodiversity reduction are stressors that can create or sharpen violent conflict. In the case of indigenous peoples of the Amazon, particularly in the recent experience of the Huni Kuin of Acre and the Ucayali Shipibo-Conibo, it was possible to verify the mechanisms through which prior social vulnerability, combined with extreme weather events, institutional failures and predatory behaviour of dominant social groups, tend to turn into insecurity. In documents and testimonies prepared by indigenous leaders, it was also clear that the social groups most affected by climate change themselves are able, when supported, to build consistent and sustainable responses to mitigate risks and mitigate negative effects. The fight against global warming and the improvement of human security stand together for the indigenous people of the Amazon.

REFERENCES

Abdenur, Adriana; Muggah, Robert and Szabó, Ilona (2019) 'Fighting Climate Change Means Fighting Organized Crime', *Project Syndicate* Mar 12. Accessed 30 May 2019 <https://www.project-syndicate.org/commentary/amazon-illegal-mining-climate-change-by-robert-muggah-et-al-2019-03>.

Acre (2011) 'Decreto Número 1.471', *Diário Oficial do Estado do Acre* 25 Mar. Accessed 11 June 2019 <http://acre.gov.br/wp-content/uploads/2019/02/imc-decreto1.471-2011.pdf>.

Ambrizzi, Tércio; Rocha, Rosméri Porfírio da; Marengo, José A; Pisnitchenco, Igor; Nunes, Lincoln Alves and Fernandez, Júlio P. R. (2007) *Cenários Regionalizados de Clima no Brasil para o Século XXI: Projeções de Clima Usando Três Modelos Regionais*. Brasilia: Ministério do Meio Ambiente.

Aquino, Terri Valle de (1993) 'História das Relações Indígenas e Não Indígenas no Acre' (mimeo).

Aquino, Terri Valle de and Iglesias, Marcelo Manuel Piedrafita (1994) *Kaxinawa do Rio Jordão: História, Território, Economia e Desenvolvimento Sustentado*. Rio Branco: CPI-AC.

Aquino, Terri Valle de and Iglesias, Marcelo Manuel Piedrafita (1999) 'Zoneamento Ecológico-Econômico do Acre: Terras e Populações Indígenas' (mimeo).

Brandão, Luciana (2019) 'Vidas Ribeirinhas e Mudanças Climáticas na Amazônia: Ativando Híbridos, Friccionando Conhecimentos e Tecendo Redes no Contexto do Antropoceno'. Dissertation. Porto Alegre: Universidade Federal do Rio Grande do Sul.

Cepik, Marco (2001) 'Segurança Nacional e Segurança Humana: Problemas Conceituais e Consequências Políticas', *Security and Defense Studies Review* 1 (1): 1-19.

Colpron, Anne-Marie (2005) 'Monopólio Masculino do Xamanismo Amazônico: o Contra-Exemplo das Mulheres Xamã Shipibo-Conibo', *Mana* 11(1).

CPIAcre (2019) 'Carta das Lideranças Indígenas do Acre para os Governos e a Sociedade'. CPIAcre. 21 May 2019. Accessed 11 June 2019 <http://cpiacre.org.br/conteudo/2019/05/21/carta-das-liderancas-e-organizacoes-indigenas-do-acre-para-os-governos-e-a-sociedade/>.

Duarte, Alejandro F. (2006) 'Aspectos da Climatologia do Acre, Brasil, com Intervalo 1971 – 2000', *Revista Brasileira de Meteorologia* 21(3b): 308-317.

FUNAI (2015) 'Programa de Capacitação em Proteção Territorial Serviços Ambientais: o Papel das Terras Indígenas'. Brasilia, Fundação Nacional do Índio (http://www.funai.gov.br).

Gartze, Erik (2012) 'Could Climate Change Precipitate Peace?', *Journal of Peace Research* 49 (1) 177-192. DOI: 10.1177/0022343311427342.

Homer-Dixon, Thomas F. (1991) 'On the Threshold: Environmental Changes as Causes of Acute Conflict', *International Security*16 (2) (Autumn, 1991): 76-116.

IPPC (2018) 'Global warming of 1.5°C: Summary for Policymakers'. World Meteorological Organization, Geneva, Switzerland.

Mach, Katharine J.; Kraan, Caroline M., Adger, W. Neil; Buhaug, Halvard; Burke, Marshall; Fearon, James D.; Field, Christopher B.; Hendrix, Cullen S.; Maystadt, Jean-Francois; O'Loughlin, John; Roessler, Philip; Scheffran, Jürgen; Schultz, Kenneth A. and Uexkull, Nina von. (2019) 'Climate as a Risk Factor for Armed Conflict', *Nature* 571: 193–197. DOI: 10.1038/S41586-019-1300-6.

Nascimento, Alice (2017) 'Após Enchente Repentina, Famílias Retornam para Casa no Jordão (AC) Ainda na Quarta-Feira (22), após Vazante', *G1 Acre* 23 February.

Nobre, Carlos A; Sampaio, Gilvan and Salazar, Luis (2007) 'Mudanças Climáticas e Amazônia', *Ciência e Cultura* (SBPC) 3 (59): 22-27.

OTCA (Organização do Tratado de Cooperação Amazônica) (2011) *Agenda Estratégica de Cooperación Amazónica*. Brasilia: OTCA. Available at: http://www.otca-oficial.info/assets/documents/20160629/bfa5dfe5a1ca92b4efdb102ee8e54634.pdf

Phillips, Tom (2019). "Chaos, chaos, chaos': a journey through Bolsonaro's Amazon inferno'. The Guardian 09 September. https://www.theguardian.com/environment/2019/sep/09/amazon-fires-brazil-rainforest

Rádio Yandê (2015) 'Comunidades Indígenas Sofrem com Enchentes no Acre e Dificuldades em Encontrar Socorro'. *Rádio Yandê* 6 Mar de 2015. Accessed 11 June 2019 <https://acervo.socioambiental.org/acervo/noticias/comunidades-indigenas-sofrem-com-enchentes-no-acre-e-dificuldades-em-encontrar>.

Rocha, Juliana Dalboni; Lindoso, Diego; Eiró, Flávio; Debortoli, Nathan; Araújo, Joana; Ibiapina, Izabel; Bursztyn, Marcel (2012) 'Mudanças Climáticas, Vulnerabilidade e Capacidade Adaptativa em Territórios da Amazônia: o Caso dos Municípios de Xapuri, Brasiléia, Epitaciolândia e Rio Branco – Acre', paper presented at VI Encontro Nacional da ANPPAS, Belém-PA.

Scheffran, Jürgen; Brzoska, Michael; Kominek, Jasmin; Link, P. Michael and Schilling, Janpeter Schilling. (2012) 'Climate Change and Violent Conflict', *Science* 336: 869-71). DOI: 10.1126/Science.1221339.

Servindi, (2018). 'Mujeres indígenas peruanas lideran la adaptación al cambio climático'. www.servindi.org.

Sherman, Mya; Ford, James; Llanos-Cuentas, Alejandro and Valdivia, María José (2016) 'Food System Vulnerability Amidst the Extreme 2010–2011 Flooding in the Peruvian Amazon: a Case Study from the Ucayali Region', *Food Security: The Science, Sociology and Economics of Food Production and Access to Food* 8(3): 551-570. The International Society for Plant Pathology.

Sobrinho, Wanderley (2019) 'Bolsonaro descumpre ordem judicial e não se explica'. *UOL* 30 August 2019. Accessed 31 August 2019 <https://noticias.uol.com.br/meio-ambiente/ultimas-noticias/redacao/2019/08/30/bolsonaro-descumpre-ordem-judicial-e-nao-se-explica-sobre-queimadas.htm>.

SOS Amazônia/Comissão Pró-Índio Acre (2012) *Fortalecendo a Integração Fronteiriça Acre – Ucayali*. Available at: https://www.sosamazonia.org.br/conteudo/wp-content/uploads/2012/03/folder-acre-ucayali.pdf.

Trigueiro, André (2019) '15 Pontos para Entender os Rumos da Desastrosa Política Ambiental no Governo Bolsonaro', *G1* 3 June. Accessed 13 June 2019 <https://g1.globo.com/natureza/blog/andre-trigueiro/post/2019/06/03/15-pontos-para-entender-os-rumos-da-desastrosa-politica-ambiental-no-governo-bolsonaro.ghtml>.

United Nations (2014) *Global Status Report on Violence Prevention*. Geneva: WHO; UNODC; UNDP.

United Nations (2018) *The Sustainable Development Goals Report*. New York: United Nations Publications.

World Bank Group (2019). *Climate Knowledge Portal*. Accessed 26 June 2019 <https://climateknowledgeportal.worldbank.org>

Zhang, David D.; Brecke, Peter; Lee, Harry F.; He, Yuan-Qing and Zhang, Jane. (2007) 'Global Climate Change, War, and Population Decline in Recent Human History', *PNAS - Proceedings of The National Academy of Sciences of the United States of America* 104 (49): 19214-19219. Available at: <www.pnas.org/cgi/doi/10.1073/pnas.0703073104>.

Zhang, Yong-Xiang; Chao, Qing-Chena; Zheng, Qiu-Hong and Huang, Lei. (2017) 'The Withdrawal of the U.S. from the Paris Agreement and its Impact on Global Climate Change Governance', *Advances in Climate Change Research* 8: 213-219. DOI: 10.1016/J.Accre.2017.08.005.