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Vulnerability, Adaptation and Climate Change

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Each new IPCC report sheds additional light on the dimension of climate change, and how it relates to human activities. Gases generated by human activities further intensify the greenhouse effect, with the ensuing increase in extreme climate events that scourge our planet (draughts, floods, heat and cold waves, hurricanes and storms). In just over twenty years, climate change moved from a being topic discussed by just a few to becoming a public policy issue. In order to minimize its impact, communities need to immediately engage in a discussion on how to prepare themselves to face its consequences.

Despite the high level of uncertainty associated to climate change, documents such as the Stern Report (2007) prove that anticipating any potential negative impact is less expensive than paying for any subsequent damage. It is possible to conclude, however, that low income populations, social segments subject to discrimination, the marginalized, and vulnerable groups of society are the ones carrying the largest burden of the damage caused by climate change.

The concept of common but differentiated responsibilities enshrined in United Nations conventions – i.e. that all countries are responsible for global warming, but those that contribute the most to it have the duty to reduce their emissions - does not exempt emerging countries from immediate liability, though it is important to exert pressure on those countries that have historically been more accountable for them. Social/political mechanisms are at play in the global climate crisis that further perpetuate injustices. In this regard, it therefore is essential to underscore the concept of climate justice, which contributes to fighting the inequalities between countries and regions throughout the world, as well as within each country and region, and also among social groups, as a result of a growth model which ultimately led to the current climate crisis.

According to the International Energy Agency, global energy consumption will grow by 56% by the year 2040, with countries experiencing fast economic growth (like Brazil, India, China, and South Africa) accounting for the largest share. Compared to 2010, GHG emissions will grow by 46% in 30 years and, despite the growth of alternative energies such as wind, solar, hydroelectric or tidal power, fossil fuels will still supply 80% of global demand over the next 30 years.

Food and nutrition security is an important aspect related to climate change. According to the Food and Drug Administration, by the year 2050 there will not be sufficient food to feed the global population (9 billion people by then), which circumstance will exert a dramatic pressure to increase food production. In a moment of significant climate variations globally, this pressure may rapidly deplete biodiversity. Close to 75% of the genetic diversity of agricultural crops has been lost over the past century.¹ One of the two factors accountable for this was the turn towards genetically uniform, high-yield varieties, to the detriment of local varieties. As far as cattle are concerned, 22% of the world's bovine breeds are facing extinction. Although these species are adapted to drought, extreme heat and tropical diseases, and despite the fact that they are a source of livelihood for many families, they do not respond to cattle farmers' current needs.

¹ Please see IPBES and Zakri Abdul Hamid (2013).

In addition to jeopardizing certain crops that are characteristic of some populations, climate change may completely or partly destroy harvests or render food transport unviable in the short term. Additionally, the climate crisis may be used as an argument to further increase food prices (just like in 2010), with the ensuing price volatility.

Every year, the inhalation of fumes generated by the burning of fossil fuels (pollution) takes the lives of 2.1 million people who die prematurely of lung cancer and cardiovascular disease. In turn, dengue, malaria and other water-borne diseases are also expected to increase.

The impact of climate events has become a part of poor peoples' daily lives. Thus, for example, the number of individuals affected by natural disasters doubled during the 1990s. Since 2000, slightly above 250 million people has lost their properties, crops and sources of livelihood as a result of natural disasters. A large portion of these losses are caused by the increase in floods and cyclones.² Events such as draughts, flooding and storms are terrible experiences for those affected by them; they threaten their lives, and leave them with a feeling of insecurity. However, climate disasters also affect long-term opportunities for human development, undermining productivity and affecting human capabilities.

The differing impacts that climate change will have on the lives of men and women needs also be taken into consideration. In addition to facing more unfavourable economic conditions, women (especially those who are poor or African descendants) are faced with different vulnerabilities from those affecting men: They are the ones who bear responsibility for raising their children and caring for the elderly, so their ability to move during natural disasters is limited; they are family heads and have to face the consequences of these impacts themselves; in many places, their access to information is not the same as that enjoyed by men, so they cannot take precautions to face the consequences of disasters as easily, all of which further evidences how vulnerable they are to the impacts of global warming.

Despite the commonplace belief among skeptics, climate change is here to stay. The effects of GHG concentration accumulate over time, so they would stay in the atmosphere for many years even if emissions were to cease overnight. The formulation and enforcement of public policies to address the impact of climate change on people's lives, with an emphasis on adaptation, is therefore a widespread and pressing need. In this regard, adaptation should be understood as the adaptation of social, economic and environmental systems to the consequences of global warming, both now and in future, foreseeing its impacts in an attempt to reduce vulnerability to climate change, especially among the poorest regions and communities.

The development of maps with indicators of social, economic and environmental vulnerabilities, as well as civil society involvement in policymaking and social monitoring efforts over such policies, becomes of the essence.

Examples of human adaptation to the impacts of climate change need be considered to further support public policy development.³ Several projects and actions have been developed throughout the world, and also in Brazil, with significant results. We need to recognize and value community knowledge, the solutions they have developed, as well as their centuries-old knowledge of well-rooted techniques, all of which offer the potential to be widely replicated and disseminated.

² Please see: Oxfam International (2009) and Pettengell (2010).

³ Please see: <http://www.coebrasil.org.br/projetosdeadaptacao/publico/default.aspx>.

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