

The Concept of Resilience in Climate Change Policy Design In North America

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The discussion about global environmental change and the problems associated with it have been central to political, economic, social, and academic agendas in every country in the world. These problems have been catalogued as the greatest challenges facing humanity. When combined with other socio-political and economic processes, like dependence on hydrocarbons, the economic and energy crises, environmental deterioration, etc., their effects are intensified and they pose new challenges.

In their endeavors to deal with them, political and social agents worldwide have coined and used a series of concepts as the basis for designing public policies and strategies to reduce the associated risks. This means that mitigation, adaptation, and resilience have become important in the discussions about managing risks and vulnerability.

By “mitigation policies,” we understand those that aim to absorb the intensity of the effects of climate change. Efforts to reduce or prevent greenhouse gas emissions have been central in designing these mitigation policies. They also imply, among other things, using new technologies and renewable energy sources; designing and creating equipment that uses energy more efficiently; changing resource management practices; and even modifying consumers’ behavior. These mitigation practices have brought forth public policies, like paying for environmental services and introducing low carbon-emission technologies.

Very important, high-impact public policies have also been designed to address adaptation to climate change. While mitigation deals with the causes, adaptation focuses on the consequences or processes derived from that change. Policies aimed at increasing adaptation are linked to a society’s capability to respond to risks, thus reducing its vulnerability. Some examples include changing infrastructure and technology to absorb

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the effects of extreme conditions, like heat, flooding due to rains, or drought. Climate change increases uncertainty about seasons and the intensity of atmospheric events. That is, contrary to the general idea, this change does not exclusively imply increased global temperatures, but the intensification of normal climate processes or changes in their timing and seasonality. This is where resilience plays an important part.

RESILIENCE IN CLIMATE CHANGE PUBLIC POLICIES IN NORTH AMERICA

By “resilience,” we understand a system’s capacity to absorb the effects of a disturbance and reorganize as the change takes place, maintaining essential characteristics like its structure and identity. This includes the ability to learn, innovate, and change society’s responses to the effects of climate change. For this reason, it is a key element for adapting to what a new global climate regime implies. The term is now being adopted in public and private spheres as the central idea behind public policies and adaptation and mitigation strategies.

Generally speaking, in North America, economic policies have ignored environmental issues. Global environmental change and the problems it brings with it have generated the need for the private and political spheres to design or include—as I already mentioned—precepts of mitigation, adaptation, and resilience in their normative frameworks. Nevertheless, despite the growing need for policies that take into account environmental change, their impact continues to be tangential in international treaties like the General Agreement on Tariffs and Trade (GATT) or the North American Free Trade Agreement (NAFTA), according to which economic growth and liberalizing trade are somehow beneficial to the environment.

Despite the growing importance of these terms in political discourse, today’s public policies tend to leave to one side issues that would make it possible to improve local communities’ resilience. For example, the emergence of new forms

of cooperation and trade among the United States, Canada, and Mexico revolve mainly around the design of clean, renewable energy technologies that reduce regional dependence on hydrocarbons (adaptation measures), and, to a lesser extent, around the possibilities of increasing regional capacity to absorb the effects of climate change (measures to create resilience). Thus, sectors like fuel producers, transport, and electricity are highly integrated into the North American regional economy, while some local, decentralized efforts involving resource management remain isolated.

Climate change adaptation and risk mitigation policies in North America have used approaches, usually developed by the United Nations, that deal with resilience from a short-term perspective, and sometimes without taking into account local communities’ adaptation processes. In addition, some adaptation policies have injured long-term resilience. One example that allows us to illustrate the problem is the production of biofuel using agricultural products.

BIOFUEL PRODUCTION AND ITS EFFECT ON RESILIENCE

The production of biofuels has become of special interest due to the growing need to reduce dependence on fossil fuels. The development of clean, renewable energy sources has become one of the prime objectives of multinational agencies’ policy efforts. The growing demand for energy and the high cost of fossil fuels have spiked interest in producing biofuels, at the same time that a debate is on-going about the benefits and possible impacts their production implies for development and environmental conditions.

One of the public policies that most affects long-term resilience in local communities in North America is the production of biofuels. Replacing agricultural species previously used for human consumption with others that can be used for producing biofuels has changed agri-food systems in local communities. Biofuels produced from agricultural production partially solve the problem of local energy demand, and this change in agriculture has profound repercussions on regional food demand.

The idea of partially replacing fossil fuels with biofuels has generated intense debate among academics, activists, politicians, and producers about their potential and risks. It puts on the table three fundamental dilemmas: first, whether biofuel production implies choosing between the demand for food and

the production of fuel; second, whether it really improves environmental conditions, specifically the effects of climate change; and third, whether it will translate into socio-economic development or the creation and distribution of wealth.

A vast body of literature focuses on these dilemmas and some countries' potential for producing biofuels. North America has become the object of innumerable research projects that indicate that, due to its agricultural capacity, it has enormous potential for generating biofuels. Favorable climatic conditions, the availability of good cultivable land, and the low labor costs have increased interest in developing biofuel production projects in some Latin American countries.

Biofuel production markets have been established today in Brazil, Colombia, and Argentina, while in other countries this is still very limited. In the case of Mexico, debate on the issue has intensified, mainly due to pressure from the world's two main bio-ethanol producers: the United States and Brazil, who represent 52 and 37 percent of production, respectively. However, these countries have become the main example of intensified competition between agriculture for human consumption and agriculture for producing biofuels, or agri-energy.

The demand for biofuels and their production illustrates the clash between the need to adapt to climate change (producing alternative forms of energy like biofuel) and increasing local communities' resilience in the face of the effects of

climate change (by protecting local agri-food systems). We can see in this discussion that North American public policies waver between these two positions that at times become polarized.

On the one hand, the international trend of producing biofuels is based on crops with the potential to solve food problems in the countries producing them (particularly maize and sugar cane); and on the other hand, we know that public policies and the strategies for protecting the local agri-food system require including climate change mitigation and adaptation measures.

In the case of biofuel production, given the enormous social and territorial diversity in North America, where the spatial structure of natural resources is complex and population distribution is highly polarized, it is necessary to take into account local conditions for designing appropriate research strategies and technologies.

A successful adaptation to the effects of climate change must include a willingness to learn how to develop coherent principles that can provide new focuses for public policy for handling its effects. Generally speaking, climate change policy and economic policy are closely linked, but if public policy only focuses on the parameters for adaptation and mitigation, leaving to one side the notion of resilience, climate change policy will be skewed. A position that takes into account the three aspects will result in more effective action. ■■

Territorial Risks and Climate Change

Daniel Rodríguez Velázquez*

INTRODUCTION

Territorial risks can be defined as processes that pose foreseeable threats to society and the environment due to a combination of political decisions, unregulated economic processes, and an absence of strategies to strengthen the resilience of

local communities to cope with structural vulnerability. Thus the occurrence and persistence of climate-change-related disasters cannot be explained through a technocratic ideology that assigns an active role to climate processes and hydro-meteorological events.

This article sets out to reflect on the social and human implications of climate change. Such a complex subject cannot be understood solely through the prism of technology and science; analyzing it is difficult when using the time-based,

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