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Uneven socio-ecologies of Hispaniola: Asymmetric capabilities for climate adaptation in Haiti and the Dominican Republic

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ABSTRACT

This article adopts a “capabilities” approach to climate justice to examine a globally unique phenomenon: a decade of unprecedented surface area growth in Lake Azuéi (the largest lake in Haiti) and Lake Enriquillo in the Dominican Republic (the largest lake in the Caribbean region). The objective was to explore how two neighbouring communities and their governments respond to large-scale environmental change within connected but uneven political ecological contexts. Current climate change impacts in this bi-national island present an opportunity to better understand not only local climate justice but also how fragmented sovereignty, territoriality, and citizenship regimes may affect processes of climate adaptation. The researchers conducted 27 semi-structured interviews in the Dominican Republic and 11 in Haiti, with open ended questions. The data analysis explores impacts of the lakes’ growth; perceived causes and solutions; access to assistance; views on responsibility; and capacities for mobilization, bi-national cooperation, and international partnerships. The article argues that different capabilities for climate adaptation are shaped by historical path dependencies, local institutional contexts, and international linkages; and that attaining climate justice requires attention to these factors within a collective normative framework. The conclusion examines how climate science, research partnerships, and citizen participation might be leveraged to help build binational adaptation strategies grounded in a capabilities approach to climate justice.

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1. Introduction

This article seeks to join aspects of a capabilities approach to justice with recent understandings of political ecology in order to analyze the impact of climate-induced variations in lake levels that have led to extensive flooding in a border area linking Haiti and the Dominican Republic. Capabilities for climate adaptation and resilience are embedded in asymmetric power relations within regional, national, and international settings. Different groups not only experience the impacts of climate change differently, but also may have highly uneven capacities to adapt to the same ecological disruption or distress. Divided between the Republic of Haiti and the Dominican Republic, the Caribbean island of Hispaniola (also called by Haitians *Ayiti*) offers a crucial case in the theorization of uneven socio-ecologies of Caribbean climate adaptation. Due to their divergent environmental histories and political institutional contexts, these neighboring countries exemplify the ways

in which asymmetric capabilities for adaptation to a changing climate may be not only globally uneven, but also locally unjust. Because the Dominican Republic and Haiti share a cross-border tropical lakes region, a comparison of their socio-political divergences in responding to climate change is especially revealing of regional asymmetries in climate adaptation, with significant implications for international approaches to climate justice. There is an urgent need to understand how both countries are adapting individually and together to a slowly unfolding hydro-climatic crisis caused by the extensive flooding of two major lakes that seep across an increasingly contentious national border.¹

¹ In September 2013 the Dominican Constitutional Court’s Ruling 168-13 stripped nationality to all children born from undocumented foreign citizens in the Republic since 1929, affecting an estimated 210,000 Dominican-born children, women, and men of Haitian descent. This led to a huge outcry of human rights defense groups nationally and abroad who protested the racist basis of this induced “statelessness”. This ruling was overturned in 2014 by the DR’s Naturalization Law 69-14, but relations between the two countries and the DR’s international reputation remain damaged. The situation has been further complicated by the recent (2015) implementation of strict regularization norms and deadlines for foreign workers in the Dominican Republic, which also disproportionately affect Haitian nationals. The details of this controversy cannot be fully addressed here, but informs the content of this analysis. See Charles, 2013; Danticat, 2013; Miller, 2013; Fieser, 2014; Howard, 2015; Keating, 2015.

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Haiti and the Dominican Republic (D.R.) share an entangled history² and today face common ecological crises such as ocean warming, deforestation, soil loss, depleted coral reefs and mangrove forests, growing intensity of hurricanes due to sea surface warming, and threats to biodiversity. These issues are likely only to worsen as climate change continues to affect the entire Caribbean region (Bender et al., 2010; IPCC AR5 WG II Report, 2014, Ch. 29). Yet the two countries also differ sharply in their histories of colonization and environmental management, subsequent land use and land cover, state capacities for governance of the environment, the organization of their civil societies around environmental concerns, and their relationships with international organizations and funding agencies.³ This article seeks to examine how current responses to parallel experiences of climate change in Haiti and the D.R. are shaped by social and economic processes that “confer capacity to resist change or resilience to reorganize in the aftermath of a disturbance” (Wrathall et al., 2014: 294). Building on the work of Adger and others on the political economy of climate adaptation, Wrathall et al. argue that climate adaptation “traps” are not simply environmentally determined, but are “limited by institutional rigidity, governance inefficiencies, or pathway dependence” (2014: 293; Adger et al., 2009; Eakin et al., 2009). Hispaniola presents an opportunity to better understand not only path dependencies within two neighboring countries, but also how fragmented sovereignty, multi-scalar territoriality, and contested citizenship regimes rooted in colonial histories and racial formations (Howard, 2015) might affect climate adaptation and create socio-ecological traps, with implications for regional climate justice.

The research reported here focuses on an unusual hydrological phenomenon: a decade of unprecedented surface area growth in two large lakes that sit on either side of the Haitian-Dominican border, Lake Azuéli, the largest lake in Haiti and Lake Enriquillo in the Dominican Republic, the largest lake in the Caribbean region (Fig. 1). While islands like Jamaica are experiencing drought, and other parts of the region such as Honduras have experienced coastal flooding (Wrathall et al., 2014), the phenomenon of inland flooding due to changes in the hydrological cycle is less well researched. Key climatic concerns in the region have mainly focused on increased drought with impacts on fresh-water resources (Cashman et al., 2010; Mycoo, 2007) and increased hurricane intensity and frequency (Mycoo, 2011). According to the Intergovernmental Panel on Climate Change, “Rainfall records averaged over the Caribbean region for 100 years (1900–2000) show a consistent 0.18 mm yr⁻¹ reduction in rainfall, a trend that is projected to continue (Jury and Winter, 2010)” (IPCC, 2014, Ch. 29: 9). According to the IPCC climate change predictions for 2050 and beyond, it is likely that more than 50% of the total area of Haiti will be in danger of desertification due to climate variability and change, including projected increases in temperature, decrease in precipitation, and more intense and frequent extreme weather events. The D.R. was ranked 12 out of 150 countries in the world’s top 40 “climate hot spots” in the Germanwatch Global Climate Change 2009 Risk Index (CRI), based on weather events between 1998 and 2007 (GFDRR, 2008: 129).

² On Haitian-Dominican relations in relation to race, ethnicity and nation, see Howard, 2001, 2007, 2015; Torres-Saillant, 1998, 2010. After the Haitian revolution the entire island was unified in 1822 under Haitian President Jean-Pierre Boyer; the Dominican Republic became independent from Haiti in 1844. On early Haitian-Dominican relations see Moreno Fraginals et al., 1985; Moya Pons, 1995; Sheller, 2000.

³ The U.S. occupation of Haiti (1915–1934) and the D.R. (1916–1924) contributed to dispossession of peasant landholders, concentration of power in the capital cities, orientation of the economies toward export and American monopolies, and empowerment of oligarchic elites backed by armed repression, thereby repressing the development of civil society. See Logan (1961), Castor and Garafola (1974), Trouillot (1990) and Nicholls (1996).

This research was part of a multidisciplinary project jointly funded by the National Science Foundation of the United States and the Ministry of Higher Education, Science and Technology of the Dominican Republic to study the Lakes’ growth, to improve infrastructure for down-scaled climate modeling (such as weather stations and local data sets), and to help identify socio-economic scenarios and sustainable solutions.⁴ Although it remains contested whether anthropogenic climate change is causing the specific environmental changes noted in Lake Azuéli and Lake Enriquillo, findings by our scientific team support a hydro-climatological hypothesis (Comarazamy, D. E., Gonzalez, J. E., et al., 2015). Climate change in conjunction with anthropogenic activities is subjecting the lakes to wide reaching alterations in their environmental setting with substantial consequences on flora, fauna and human populations, with forced and planned evacuations being one of the first instances of environmental refugees not caused by an extreme event (e.g., a hurricane or tsunami).⁵ The extensive flooding by the twin lakes of agricultural land, roads, border posts, and several settlements is an unexpected climate shift, allowing for comparison of bi-national, cross-border adaptation capabilities.

2. Climate justice: a capabilities approach

Our comparative approach to the side-by-side yet differing situations of Haitians and Dominicans affected by the flooding presents an opportunity to test specific and local vulnerabilities and differential capabilities for responding to climate change under different socio-economic and political conditions. Drawing on aspects of political ecology that highlight the interaction between economic inequality, environmental governance, and local conflicts, we can trace how social-ecological structures restrict access to physical and organizational resources in various ways and hence limit capabilities to adapt (Heynen et al., 2006; Pelling, 2010). In line with recent overviews of this diverse field, we understand political ecology as involving first, a critical theoretical approach to the ways in which “nature” and social relations of power are entwined; second, a methodological commitment to direct observation drawing on qualitative and quantitative methods within a place-based, historical context; and third, a normative commitment to social justice (Bridge et al., 2015: 7–8). The case considered here concerns both climate justice within the two respective countries (in terms of treatment of affected groups), between the two countries (in terms of potential environmental refugees and disrupted cross-border markets), as well as between the Caribbean and the Global North (in terms of responsibility for climate impacts on the region, as well as involvement in colonialism, military occupation, and transnational governance in Hispaniola).

Secondly, we draw on a capabilities approach to climate justice, grounded in normative and collective theories of justice. Climate justice frameworks call for broad-based stakeholder participation and a transformative approach to socio-ecological relations writ large (Dryzek et al., 2013). Building on the theories of justice of Nussbaum (2011) and Sen (2009), as well as political theories of recognition (Fraser, 1997; Young, 1990), Schlosberg argues that a capabilities approach to collective normative frameworks can “bring social and political recognition of specific and local vulnerabilities and the effects of climate change on the basic needs of

⁴ NSF-RAPID: Understanding Sudden Hydro-Climatic Changes and Exploring Sustainable Solutions in the Enriquillo Closed Water Basin (Southwest Hispaniola) (PI Jorge Gonzalez, CCNY, Co-PIs, Daniel E. Comarazamy, Fred Moshary, Michael Piasecki, Sheller) ENG-CBET Award No. 1264466.

⁵ Other outcomes of the research are that the story has been picked up by major media, bringing renewed international attention. See, e.g., *New York Times* (Archibald, 2014) and BBC Mundo (Arroyo, 2014).

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