

# The impact of climate change on tribal communities in the US: displacement, relocation, and human rights

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**Abstract** Tribal communities in the United States, particularly in coastal areas, are being forced to relocate due to accelerated rates of sea level rise, land erosion, and/or permafrost thaw brought on by climate change. Forced relocation and inadequate governance mechanisms and budgets to address climate change and support adaptation strategies may cause loss of community and culture, health impacts, and economic decline, further exacerbating tribal impoverishment and injustice. Sovereign tribal communities around the US, however, are using creative strategies to counter these losses. Taking a human rights approach, this article looks at communities' advocacy efforts and strategies in dealing with climate change, displacement, and relocation. Case studies of Coastal Alaska and Louisiana are included to consider how communities are shaping their own relocation efforts in line

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with their cultural practices and values. The article concludes with recommendations on steps for moving forward toward community-led and government-supported resettlement programs.

We are historically fishermen and trappers. We have maintained this life well for hundreds of years, probably longer. Now our waters are contaminated by the industries that increase Global Warming and the layer of pollution in the atmosphere, which brings with it an increase in storms that has led to salt water intrusion of our lands. This is also destroying the vegetation that has been plentiful and abundant for generations, destroying the opportunity for us to be a self-supporting people and to share our bounty with the rest of the planet.  
—Member of Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw Indians (Louisiana Workshop 2012)

## 1 Introduction

Climate change impacts, such as sea level rise, are predicted to displace millions of people around the world, as places become either temporarily or permanently uninhabitable. In particular, people living in coastal and low-lying areas increasingly face the reality of displacement (IPCC 2007; UNDP 2007/2008). In confronting this reality, indigenous peoples have many successful and creative adaptation and mitigation strategies to share (e.g., Cochran et al. 2013; Hardison and Williams submitted this issue; Nakashima et al. 2012; Wildcat 2009). This article highlights some of these strategies in the case studies below, while also discussing how policy changes, past US government efforts with relocation, and international human rights law could assist tribal relocations due to climate-induced changes.

Entire tribal communities in Alaska, Louisiana, and the Pacific Islands, among others, are being forced to relocate due to accelerated sea level rise, erosion, extreme weather events, and/or permafrost thaw, as well as a lack of resources to cope with these impacts in-situ (Callaway et al. 1999; McLean et al. 2009; Louisiana Workshop 2012). In the United States, as well as globally, communities facing the likelihood of relocation are also often those that have experienced systemic impoverishment and injustice, such as coastal tribes of Alaska and Louisiana. This holds significant human rights implications, as tribal communities are among those that are least responsible for causing climate change, are often subject to harm by powerful forces such as oil companies that are responsible for proliferating climate change, and their lands, resources, and culture stand in direct threat or being lost or severely diminished due to climate change impacts (Oliver-Smith 2011:162; UN 2007). Climate-induced displacement does not only sever the physical ties and rights indigenous peoples have to their land and resources, but also the spiritual relationship they have with their traditionally-occupied places (UN 2007). Climate change and its impacts reflect Farmer's discussion of human rights violations as "symptoms of deeper pathologies of power" (2003:7).

Today's capitalist-based social and economic processes have severe consequences for communities' adaptive capacities, shaping their social vulnerability, which is defined as "a combination of factors that determine the degree to which someone's life and livelihood is put at risk by a discrete and identifiable event in nature or in society" (Blaikie et al. 1994:9; also Oliver-Smith 2004:24). Understanding vulnerability as a long-term process means understanding the conditions, such as poverty, political disempowerment, and economic oppression that create barriers to adapting to environmental changes (Hilhorst and Bankoff 2004; Wisner 2004). As Pigué et al. point out, climate change does not take place in a vacuum, but is embroiled within issues of inequality and human rights (2011:25).

For indigenous communities, climate-induced relocation cannot be separated from the sensitive history of government-mandated tribal relocations that occurred throughout the United States from the late 1700s well into the 20th century. The 1830 Indian Removal Act forcibly relocated Native peoples living east of the Mississippi River to a designated place to the west. Along the “Trail of Tears”, tens of thousands of Natives lost their lives (Bartrop 2007:185). Indian Removal went beyond physical loss of life; the US policies of dispossession, removal, and reservation boundaries led to loss of cultural identity (Bartrop 2007:184). For example, the lands the Choctaw were moved to in the West became known as “the Land of Death” (Akers 1999:73).

Forced relocations have continued into recent times. For example, in Alaska, Aleut communities were compulsorily moved during World War II (Hesse 2005). These relocations, as well as the consolidation and settlement of Alaska Native tribes during the 20th century because of the government mandate to attend school (Shearer 2011), has limited the ability of tribes to draw upon their traditional knowledge in adapting to a rapidly changing environment.

In the contiguous 48 states, tribes experience increased vulnerability to changing weather patterns and climate impacts due to loss of traditional subsistence practices resulting from the history of reservations and western land expansion. As opposed to how Natives once moved from place to place as needed for food and safety, those on reservations have limited options because of restrictive reservation boundaries (Lynn et al. 2013), similar to the populations of low-lying island countries that are constrained by geographic and political boundaries (Lazrus 2012). Federal laws obstruct expanding or transferring tribal jurisdiction and few tribes have the economic means to buy new land. Therefore, tribes’ traditional cultures are directly threatened by current and future climate change impacts (Houser et al. 2001:357). For coastal communities, there is now the added complication that many coastlines are destabilizing from erosion, sea level rise, and/or permafrost thaw, further limiting their relocation options and complicating their dependence on living near water to meet subsistence needs.

Forced relocation is compounded by the current lack of governance mechanisms or budgets to support the communities, which intensifies community impoverishment, negative economic and health impacts, and loss of place, social networks, and culture (Bronen 2011:360). Kivalina and Newtok in Alaska and Isle de Jean Charles in Louisiana are three of the communities facing similar issues and leading their own relocation efforts, and in doing so are trying to forge needed policies for relocation.

## 2 Case studies

Kivalina and Newtok, Alaska, and Isle de Jean Charles, Louisiana, are examples of tribal communities in the US that share a common fight to save their culture, ancestral land, and communities in the face of both the causes and effects of climate change. All face permanent displacement from climate-related stressors, and although their situations differ, they face many of the same challenges in achieving their safe relocation.

### 2.1 Kivalina

The Native Village of Kivalina lies approximately eighty miles north of the Arctic Circle, on the tip of a thin, six-mile long barrier reef island of 27 acres (11 ha). Its population of about 400 is primarily Inupiat, tracing their ancestry in and to the area for thousands of years. Their experience offers an example of a tribal community attempting to pro-actively adapt to climate change while being constrained by existing policies—policies that, by their design, have largely channeled assistance and funding toward remaining on the existing settlement rather than relocating.

Kivalina was originally used as a seasonal hunting ground but, in 1905, tribal parents were ordered by the US Bureau of Indian Affairs to enroll their kids in school or face imprisonment, thus beginning the stationary settlement on the island (Shearer 2011). This settlement depended on the formation of sea ice in early fall, hardening the island and buffering it against storms. With warming Arctic temperatures, the ice now forms as late as November or even December, leaving the shoreline exposed and vulnerable to erosion (GAO 2003).

Kivalina residents first noted coastal erosion in the 1950s and formally voted to begin a relocation process in 1992 (Mitchell 2007). This was later supported by a 2003 Government Accountability Office report stating that most of Alaska's more than 200 Native villages were affected to some degree by flooding and erosion, in part due to rising temperatures, with 31 facing imminent threats and four requiring relocation, including Kivalina (GAO 2003). A 2006 Army Corps assessment estimated that the village of Kivalina, as well as Newtok and Shishmaref, would be lost to erosion in 10 to 15 years, with an estimated relocation cost of US\$80 million to US\$200 million for each village (USACE 2006).



Rock revetment project under construction, Kivalina 2008. Source: Christine Shearer

As Kivalina residents tried to relocate, however, they found that there was no designated government body to assist communities with the process, and that many disaster programs and funds are available only after a disaster occurs, limiting the ability of both the relevant US government agencies and Kivalina residents to begin relocation (Shearer 2012a).

Kivalina's at-risk coastal situation became dangerous in 2004 and 2005 when big storms hit the tiny island, eroding the coastline and putting several homes in danger (Shearer 2011).

Government reports later estimated the village had experienced between 70 to 80 ft of erosion from the storms, in some areas exposing the permafrost (USACE 2007).

Kivalina was declared a disaster area and the Federal Emergency Management Agency (FEMA) provided sandbags to help prevent further erosion. In 2005, Congress passed Section 117 in the 2005 Consolidated Appropriations Act, which allowed the Army Corps to carry out storm damage protection projects for Alaska Native Villages at full federal expense (GAO 2009). A sea barrier was constructed for Kivalina by a private Department of Homeland Security contractor; the barrier failed the day before its inauguration, leaving the village temporarily unprotected (Shearer 2011).

After an evacuation from another storm in 2007, the Army Corps approved construction of a large rock revetment project for Kivalina. Despite the revetment, community relocation remains necessary. Yet no agency has complete responsibility for relocation, and there are few policies and protocols in existence to legally move the process forward. Instead, there are multiple agencies with different authorities, norms, and responsibilities, which Kivalina residents must try to bring together through their own efforts (Shearer 2012a). In addition, there have been disagreements over the new relocation site and tribal knowledge between Kivalina residents and government agencies and contractors, which has further slowed the relocation (Shearer 2011).

## 2.2 Isle de Jean Charles

The Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw Indians was historically a fishing, trapping, and hunting community in Terrebonne Parish, Louisiana. Forcibly displaced from their original lands by European settlers, the Isle served as a refuge for Natives to escape to the end of the bayous in dense forested swamps to avoid being forcibly relocated or killed. Today, the communities' culture and water-based settlements and livelihoods are threatened by both the causes and consequences of climate change.



Flooding on Isle de Jean Charles, Hurricane Isaac 2012. People raise their homes to adapt to land loss and rising waters. Source: Julie Maldonado

In the 1950s, the Isle was about 5 miles by 12 miles; today it is approximately 1/4 mile by 2 miles, due to intense coastal erosion and saltwater intrusion. The diminution was initially influenced by oil and gas companies such as Texaco dredging canals and cutting thousands of miles of pipelines along Louisiana's coast. In addition, the construction of dikes and levees, damming of the Mississippi River, other flood control measures, and large-scale agricultural development prevent sediment and silt from reaching the delta, leading to subsidence (Button and Peterson 2009; Freudenberg et al. 2009; Laska et al. 2005).

Climate-induced sea level rise now threatens the community. Coastal Louisiana has experienced one of the highest rates of relative sea level rise in the world, with an over 8-in. rise in the last 50 years (Karl et al. 2009). Relative sea level rise could be the tipping point beyond which restoration is impossible.

With severe loss of wetlands and barrier islands to the south, the Isle no longer has natural protection against hurricanes and storms; it is now the storm buffer for communities to the north. Since 2005, the Isle has survived six major storms. While the Isle rarely experienced flooding from hurricanes before, the Isle now floods during high tide. Many of the Isle's trees, traditional and medicinal plants, gardens, and trapping grounds are gone (Louisiana Workshop 2012). There were 78 homes in 2002, but only about 25 remain by 2012. The community also continues to experience health and livelihood impacts from decades-long industrial contamination and encroaching toxic industries, chemicals from dispersants, oil spills, including the 2010 BP oil disaster, and post-storm debris contaminating the air, soil, and water.

Additionally, the community continues their efforts to receive tribal federal recognition, which they have thus far been denied based on historical injustices, such as being pushed to the end of the bayous by European settlers and forcing them into isolation, which makes it difficult to prove a sustained political authority and descent from an historical tribe (Miller 2004). This struggle is significant to their vulnerability because federal recognition would give them specific benefits and protections, such as "the necessary bargaining power when confronting the Corps of Engineers in their struggle for inclusion [in the Morganza-to-Gulf project]" (Katz 2003:3–4).

State reports have concluded that, if nothing is done, the Isle will be gone before 2050 (Coastal Protection and Restoration Authority of Louisiana 2012). Despite this, the community is omitted from coastal restoration efforts, including the Army Corps' Morganza-to-the-Gulf-of-Mexico Hurricane Protection Project and is given minimal attention in Louisiana's 50-year Master Plan for Coastal Restoration because the authorities claim that extending protection to the community does not meet required cost-benefit analyses (Coastal Protection and Restoration Authority of Louisiana 2012). The political decisions that determine who gains and loses from such cost-benefit analyses, legitimized by government and project authorities, need to be critically considered to understand the underlying implications of who is being sacrificed for the greater common good (Roy 1999). Attempting to explain the harm caused to individuals and communities by claiming the greater benefit to all, cost-benefit analysis is entirely insufficient because it does not include the distribution of costs and benefits and completely ignores important social and cultural factors, instead only considering economic impacts (Cernea 2000:3671; Mayo 2010).

As a result of these various stressors, the Traditional Chief and others are working to relocate together those who have scattered and those who would like a communal safe haven, while still working to save their ancestral land. As he explained, "[p]eople want to come back to the community. We have to come together to make sure the land belongs to us while we move to a safe location" (Louisiana Workshop 2012). Community leaders pushed for relocation in 2002 through the Army Corps of Engineers, and again in 2009, but ran into regulatory challenges of relocating an entire community without internal and little external funding. They are looking not just for community and cultural restoration but also for traditional livelihood development to once again be a self-sustaining community.

Without government support, the Isle community, as others have, is taking the initiative to determine their future and lead their relocation. In 2010, following the BP disaster, representatives of Newtok, Isle de Jean Charles, and other Louisiana and Alaska at-risk coastal communities came together through the work of an academic center and a religious congregation to develop people-to-people learning exchanges, as well as advocacy through local and national social and political structures and systems. Through these partnerships, they have traveled to each others' lands and communities to learn what each is experiencing and take the knowledge back as advocates on the others' behalf. The communities continue the knowledge exchanges and co-learning based on local, citizen science and traditional ecological knowledge.

### 2.3 Newtok

Newtok is a Yup'ik Eskimo village located along the Ninglick River near the Bering Sea in western Alaska (Cox 2007). Approximately 400 people reside in 60 homes in the village. No roads leads to or from the village, which is surrounded by one of the largest river deltas in the world. Wave action and thermal degradation of the permafrost-rich riverbank are causing accelerated rates of erosion (Cox 2007).

Six extreme weather events between 1989 and 2006 exacerbated the rate of erosion. FEMA declared a disaster in five of these events (ASCG 2008). These storms repeatedly “flooded the village water supply, caused raw sewage to be spread throughout the community, displaced residents from homes, destroyed subsistence food storage, and shut down essential utilities” (USACE 2008a). Public infrastructure that has been significantly damaged or destroyed due to the combination of extreme weather events and on-going erosion (USACE 2008b), and the 2005 storm also destroyed the Ninglick River barge landing, making it difficult to deliver essential supplies such as fuel.



Newtok permafrost thaw along Ninglick River. Source: Robin Bronen

A new dump site located across the Newtok River from the village, built as a short-term emergency response in 1996, is still in use in 2012 (ASCG 2008). Garbage gathers on the village side of the Newtok River and can only be transported by boat across the river at high tide (ASCG 2008). The lack of a sanitary village landfill and sewage treatment facility is creating a public health crisis for the community. Between 1994 and 2004, 29 % of Newtok infants were hospitalized with Lower Respiratory Tract Infections because of high levels of community contamination and the lack of potable water for drinking and hygiene/sanitation practices (ASCG 2008). Salt water intrusion affects the potable water (Cox 2007).

The State of Alaska spent about \$1.5 million to control the erosion between 1983 and 1989 (USACE 2008b). Despite these efforts, severe damage to the community is expected by 2016 (USACE 2006). Erosion of the Ninglick River is projected to reach the school, the largest structure in the community, by about 2017 (USACE 2008a).

Newtok inhabitants voted three times, most recently in August 2003, to relocate to Nelson Island, nine miles from Newtok (Cox 2007). Newtok obtained title to their preferred relocation site, which they named Mertarvik, through a land-exchange agreement negotiated with the US Fish and Wildlife Service (Cox 2007). In 2006, the Newtok Planning Group, an ad hoc intergovernmental and multidisciplinary working group dedicated to Newtok's relocation and lead by the Newtok Traditional Council, began a strategic relocation planning process. Through their efforts, pioneer infrastructure including a barge landing, six homes and the foundation for an emergency evacuation center have been built. No electric, sewage or water system currently exists at the new site. Due to enormous local, state, and federal legislative and institutional barriers, the relocation is occurring very slowly, but it is moving forward (Bronen 2011).

### 3 Legal aspects and policy implications

The case studies raise policy and legal implications in the US and internationally, for both the agencies involved in disaster management and the affected communities. No US federal government agency is mandated to manage communities' adaptation efforts in general or relocation efforts specifically, and there are few funds to pro-actively move an entire community. Such an agency could be designated and funded, arguably as part of a stronger emphasis of US disaster policy on risk mitigation, which could serve as a bridge toward climate change adaptation and relocation policies (Shearer 2012b). Indeed, US disaster management and coastal armament was largely structured around a more stable climate that can no longer be assumed.

Many of the problems that Kivalina, Isle de Jean Charles, and Newtok face in relocating are rooted in the lack of a lead federal, state, or local government agency. In the absence of a lead entity, agencies often individually prioritize assistance to villages on the basis of their own agency's protocols and criteria, without an overarching or centralized structure. If there are problems with just one agency, the entire relocation process can be put on hold. A designated federal agency and relocation policy would help coordinate these now dispersed efforts (GAO 2009).

Additionally, federal programs to help threatened communities prepare for disasters are limited and unavailable to many tribal communities. While FEMA administers flood insurance, disaster recovery programs, and grants for disaster mitigation and preparedness, Alaska and American Indian villages often fail to qualify because of their small populations and remote locations, making government-required technical data sparse and cost-benefit analyses prohibitively expensive (GAO 2009). Further, most funding for disasters are



triggered after disaster occurs (GAO 2009). Disasters are specifically defined by statute and do not include slow, ongoing climate-induced environmental changes, such as increasing sea level rise, steady erosion, and permafrost thaw (Bronen 2011). In order to respond to these changes, the Stafford Act—the primary disaster relief and response legislation in the United States—needs to be amended so that FEMA can deal with the problems facing affected communities (Bronen 2011).

Most importantly, communities should be empowered to make decisions regarding the most appropriate adaptation strategy to these climate-induced environmental changes (Hugo 2011), particularly given the long history of indigenous experiences with forced relocation (Marino 2012). Whyte (2013) points to the need for institution building to allow for the creation of respectful relationships between tribal communities and government authorities in justly taking actions that include the communities' voice and input.

While agencies and communities are facing new challenges with climate change, community-driven and government-assisted relocation in the US is not without precedent. We now consider the precedent set with the Resettlement Administration in the US, experienced in a time of economic depression, and the lessons learned from development-forced displacement and resettlement worldwide.

#### 4 Lessons learned from past relocations

Following the great Dust Bowl, the epic flood of 1927, and the Great Depression, cities and states made laws against those who migrated to other regions for subsistence (Gast 1934). When squalor conditions in cities became a health and human rights issue (Meck and Retzlaff 2009), in response, President Roosevelt instituted policies regarding relocation and subsistence farms, resulting in a complex network of 100 federally funded multi-dimensional relocation projects across the US (Conklin 1991; Harrison 1952; Holley 1975; Melville 1985; Melvin 1936), bolstered by federal resources, such as land, staff, tools, and education (Roosevelt 1934).

With the Resettlement Administration, multiple government agencies dedicated resources toward successful community relocations, which could help inform the framework needed for climate-induced relocations today. Although the program was not directed to tribal governments, it was directed to populations that were indigent and marginalized, needing to be resettled due to a complexity of circumstances shaping their vulnerability, as is the case with communities in the US facing climate change and displacement today. The resettlements were most successful when community input and participation was integrated and supported, rather than relying upon a top-down bureaucratic structure, as is often the case with resettlement schemes around the world (Hugo 2011). While the people who relocated together did not shape the initial development of the new community, they did have their own council and could make decisions on the community's future direction. For those that still exist, such as Arthurdale and Reidsville in West Virginia, culture and heritage have been preserved where attention and resources were dedicated to the people (Ward 1995). Lessons can be learned from the Resettlement Administration's ability to pull together resources from across federal agencies during the Depression and the positive outcomes brought about by direct community involvement and bringing people together from the local community to government to anthropologists to engineers.

In conjunction with the historical model of resettlement, it is important to learn from past experiences that have demonstrated the disastrous consequences of displacement and resettlement. Negative consequences for the individuals, families, and communities affected

by development-forced displacement and resettlement in the 20th century include community fragmentation, health risks, and loss of traditional skills (Cernea 1997; Cernea and Mathur 2008; De Wet 2006; Oliver-Smith 2009a). Development-forced displacement and resettlement schemes have “relevance to climate change displacement, due to destruction of the landscape and which populations are typically impacted, among other reasons” (Hugo 2011:261, 274). Climate change impacts can drastically alter the place people are attached to and these effects cannot just be economically compensated. For tribal communities, “it is more than being connected or attached to the land, we are part of the land, it is part of us and we are part of it... the water, the air, all of it runs through our veins and souls. To be here is to live, to be elsewhere is to die to who we are” (Philippe 2008).

Patterns found in development-forced displacement and resettlement, such as “bureaucratic inconsistencies, agency contradiction, and planning and procedural rigidities... seem to be part of future scenarios for people facing displacement by sea level rise, unless significant progress in the field is achieved” (Oliver-Smith 2009b:36). Relocation therefore necessitates management and planning through participatory processes and according to communities’ needs and priorities, including the relocation site (Farbotko and Lazrus 2012). Addressing responses to climate change impacts in Pacific Island communities, including migration due to rising seas, Farbotko and Lazrus (2012:388) present alternative framings for migration practices that are relevant for communities globally; “[a]s island populations table various alternative visions of future migration, it becomes apparent that equitable climate change governance requires greater openness to islander emotions, values, mobilities and spaces.”

Protocols to guide community relocation should arguably be rooted in a human rights framework that asserts and protects communities’ rights to self-determination, and helps prevent communities from being forced to disband or move from one at-risk location to another (Bronen 2011).

## 5 A human rights approach to relocation

No human rights document exists within the US or internationally that protects communities forced to relocate because of climate change (Bronen 2011; Lazrus 2012). Several international human rights documents, such as refugee law and the Guiding Principles on Internal Displacement, provide a theoretical basis for creating these principles. However, none address the complex and unique situation of people forcibly displaced because of climate-induced environmental change (Bronen 2011).

Refugee doctrine is inapplicable because these laws are based on the fundamental principle that a person needs legal protection because they are outside their country of origin due to persecution by a government actor or an actor the government cannot control (Bronen 2011). Yet climate-induced displacement is expected to occur primarily within national borders, as demonstrated in the three case studies given above (Warner et al. 2009). Clear exceptions are populations of low-lying coastal and island countries, such as Tuvalu, Kiribati, and the Maldives (Lazrus 2012). The Guiding Principles on Internal Displacement outline a framework of human rights protections for people who are internally displaced within their country of origin (United Nations 2004). These principles, however, are based primarily on population displacement caused by ethnic and political violence.

Guiding Principles on Climigration have been proposed (Bronen 2011). Climigration is permanent community displacement caused by gradual climate-induced biophysical changes, combined with repeated extreme weather events, which severely impact

infrastructure, such as health clinics and schools, and threaten the livelihoods and well-being of the people residing in the community (Bronen 2011). Guiding Principles of Climigration will specifically protect the collective rights of peoples forced to relocate. The right to self-determination is the fundamental principle, which comprises the Guiding Principles of Climigration. The collective right to self-determination ensures that indigenous communities can determine their own identity, belong to “an indigenous community or nation, in accordance with the traditions and customs of the community or nation concerned” and make decisions about internal and local affairs (UN Declaration on the Rights of Indigenous Peoples 2007, articles 9, 33). Affected communities must make the decision that relocation is the only adaptation strategy that will protect them from climate-induced environmental changes and communities must be designated as a key leader in the relocation process. Relocation must be community-based and community-guided.

The Guiding Principles on Climigration will protect the social, economic and cultural human rights, defined in the UN International Covenant on Economic, Social and Cultural Rights (1976), of individuals and communities forced to relocate because of climate change, whether internally or across national borders. These rights must be protected during displacement as well as relocation. For indigenous communities, tribal relationships are essential to cultural identity. Tribes must decide how the community will relocate to ensure that socio-cultural institutions remain intact. Subsistence rights and the customary communal rights to resources must also be affirmed (Bronen 2011).

Relocation must not diminish the living standards of the affected communities. The Guiding Principles on Climigration will affirm the right to safe and sanitary housing, potable water, education and other basic amenities. Embedding these principles in the relocation policy framework will enhance the resilience capacity of communities by addressing socio-economic issues, such as lack of economic development and poverty, which can contribute to communities’ vulnerability.

While this article deals primarily with tribes in the US, we acknowledge that communities around the world face similar challenges. As is being experienced in Alaska and along the coast of Louisiana, communities around the world are finding that there are few, if any, channels available to them to carry out risk mitigation, in-situ adaptation, and to begin the conversation about international migration. There are also significant differences between relocation within the US and in the international context, primarily questions about sovereignty (although somewhat parallel to negotiations between tribes and the US government), citizenship, and human rights that arise from crossing national borders. New formulations of nationality and nationhood are required to deal with unprecedented conditions (Burkett 2011). In places like the Pacific Island country of Tuvalu, migration is a way of life and should be “allowed” to be an adaptation to climate change in the future, as it has been historically (Farbotko and Lazrus 2012; Lazrus 2012). We need to expand understandings of migration and adaptation to include managed migration that is carried out according to cultural needs and priorities, as well as broaden shared notions of the nation state, sovereignty, and citizenship.

## 6 Concluding statement

Climate-induced displacement is bringing new challenges that are particularly affecting tribal populations, as these three case studies illustrate. Yet while anthropogenic climate change may be a relatively new problem, many of the issues it is raising around displacement and relocation are not without precedent. That is why we have used the case studies to examine the implications for policymakers, while also drawing upon lessons learned from development-forced displacement

and resettlement and past US efforts toward relocation. Further, tribal communities have a long history of adapting to environmental changes that should be recognized and protected. We therefore argue these efforts should be rooted in a human rights framework that asserts and protects tribal rights to determination and preservation, which could serve as both a national and international model for future displacements. Indeed, traditional tribal methods for adaptation could be used as a basis for informing and enacting future policies as we face increasing challenges from global environmental change.

One thing that we gain from pioneering is continuing and honoring our values.  
 If we rely on the western society's way of life, that's forgetting who I am.  
 We need to go back to our way of life. We have to start somewhere.  
 —Newtok Traditional Council Member (Agnew-Beck Consulting 2011)

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