

Intersections

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Over the past three decades, scientists have observed unprecedented warming of the earth's surface as a result of human-caused greenhouse gas emissions. The impacts of climate change, including changes in weather patterns, more frequent or severe natural hazards and altered water systems, are devastating vulnerable communities in which MCC works by exacerbating food insecurity and population displacement and increasing risk of disaster. Climate change is challenging MCC's efforts to build healthy communities, respond to disasters, provide clean water, create sustainable livelihoods and promote peace.

The articles in this issue of *Intersections* span the globe, representing voices from Myanmar, Ethiopia, Latin America and North America. Contributors grapple with how to respond to climate change within their contexts while exploring innovative strategies that both benefit the environment and enable vulnerable communities to adapt. Sandra Reisinger and Van Lizar discuss how an MCC partner in Myanmar is addressing this challenge by empowering women to serve as disaster managers. Frew Beriso discusses how climate-smart agriculture practices improved food security and contributed to building resilience to drought in rural Ethiopia. Finally, Darrin Yoder examines how MCC partners in Latin America and the Caribbean are sharing their climate-change related challenges with one another while calling upon MCC to support their efforts not only in strengthening climate-resilient agricultural livelihoods, but also in using MCC's voice and influence to advocate on policies that affect communities' natural resources and ability to adapt to climate change.

What is the responsibility of relief, development and peacebuilding agencies in the global North like MCC to mobilize their supporters in responding to the threats posed by climate change through public policy advocacy and efforts to mitigate climate change by reducing greenhouse gas emissions? Public policy advocacy around climate change is rarely straightforward, as Tammy Alexander explains in her article about the complexities of advocacy related to the Green Climate Fund. Meanwhile, Jennifer Halteman Schrock argues that Christians in Canada and the United States can play a key role in reducing the greenhouse gas emissions that drive climate change. Schrock explores the common traits of congregations engaged in creation care and offers suggestions for what is

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Kolbert, Elizabeth. *Field Notes from a Catastrophe: Man, Nature, and Climate Change*. New York: Bloomsbury, 2015.

Parenti, Christian. *Tropic of Chaos: Climate Change and the New Geography of Violence*. New York: Nation Books, 2012.

needed to mobilize other churches. While diverse and varied, the voices in this issue emphasize that by caring for the environment, we are caring for people.

Meara Dietrick Kwee is MCC learning and evaluation coordinator. Amy Martens is research associate in MCC's Planning, Learning and Disaster Response department.

Climate change adaptation and mitigation: what is MCC's role?

Climate change has already wrought significant adverse impacts on people and the environment, including increasing the risk of climate-related disasters. Communities, governments and non-governmental organizations employ adaptation and mitigation strategies to respond to climate change risks, seeking to limit future negative impacts and to enable communities to cope with adverse effects. What is the responsibility of relief, development and peacebuilding agencies like MCC that work in climate change-affected communities to respond to climate change through adaptation and mitigation?

The intersecting concepts of disaster risk, hazards and vulnerability are key in understanding the broader approaches of climate change adaptation and mitigation. *Hazards* in this case refer to natural adverse events such as droughts, extreme temperatures, landslides or hurricanes. *Vulnerability* is a term used to describe the characteristics or circumstances of a community that make it susceptible to the damaging effects of a hazard, including exposure to the hazard and ability to cope or adapt to its effects. Vulnerability is influenced by a variety of factors, including gender, age, inequalities in the distribution of resources, access to technology and information, employment patterns and governance structures. *Disaster risk* is based on the occurrence of hazards and vulnerability to those hazards. Not only is climate change increasing the frequency and severity of many natural hazards, but climate change impacts are increasing vulnerability by diminishing the capacity of communities to cope with these adverse events because of greater unpredictability of climatic events, increased displacement, land degradation and other impacts.

Climate change mitigation and adaptation are two complementary strategies to reduce and manage the risk associated with climate change. *Mitigation* involves reducing human-caused greenhouse gas emissions in an effort to limit future climate change. Mitigation strategies include switching from fossil fuels to renewable energy sources, improving energy and transportation efficiency and increasing carbon "sinks" through reforestation. *Adaptation* is the process of adjusting to actual or expected climate change and its effects. Within communities, adaptation means avoiding or diminishing harm from climate impacts or exploiting beneficial opportunities associated with climate change. Adaptation includes a variety of activities to reduce vulnerability, including income and livelihood diversification, soil and water conservation, natural resource management and the provision of social safety nets. In addition, *disaster risk reduction* is a key strategy for reducing risk through efforts to analyze and manage the factors causing disaster situations, including reducing the exposure to hazards, lessening vulnerability of people and property and improving preparedness for disaster events.

MCC is primarily involved in climate change adaptation activities by supporting communities currently affected by climate change. Adaptation activities aim to reduce disaster risk by addressing different aspects of vulnerability within communities and building resilience to resist, absorb, accommodate and recover from the effects of climate-related hazards. MCC's adaptation work includes training for farmers in conservation agriculture, construction of shelter resistant to hazards and providing improved access to safe water.

MCC is also involved in mitigation work, including advocating for government policies that address climate change, encouraging supporters to live simply, expanding efforts to implement sustainability initiatives within MCC operations in Canada and the U.S. and partnering with Eastern Mennonite University and Goshen College in the founding of the Center for Sustainable Climate Solutions to advance thinking and action within faith communities on mitigation. Internationally, some of MCC's programming includes mitigation efforts such as reforestation and education on climate change and environmental sustainability.

Climate change is undermining the efforts of non-governmental organizations (NGOs) in the development sector as they work towards poverty reduction, food security, improved access to clean water and other development goals. Development NGOs are recognizing the importance of adaptation strategies in programming as they experience the impact of climate change on vulnerability and disaster risk. While adaptation is key in reducing risk associated with climate change impacts, it does not address the root cause of climate change. Both mitigation and adaptation are essential to a comprehensive climate risk reduction strategy.

Considering the importance of limiting future climate change impacts to support sustainable development, what role should NGOs play in mitigation efforts? As a ministry of churches in Canada and the United States, MCC represents congregations in countries that contribute significantly to climate change and is itself a contributor of greenhouse gas emissions. To what extent is MCC responsible for mitigation, both with regards to its internal operations and its constituents located in Canada and the U.S.?

While MCC's responsibility for climate change adaptation is inherent within its priorities of disaster relief and sustainable community development, MCC continues to explore its role in mitigation and opportunities for greater engagement on climate change matters. Even as MCC undertakes a number of initiatives to green its operations, MCC must discern how to balance an emphasis on internal mitigation efforts with a desire to implement program effectively and allocate resources efficiently. MCC asks itself how it can best partner with other like-minded organizations to engage and mobilize congregations to reduce their greenhouse gas emissions. As recent conversations convened by the Center for Sustainable Climate Solutions suggest, MCC has the opportunity to join other organizations to advocate on policies that address climate change, to mobilize its supporters to reduce greenhouse gas emissions and to use its international adaptation work as a platform to propel climate action by connecting North American supporters with climate change-affected communities.

MCC's work is increasingly connected to the impact of climate change on hazards and vulnerability within communities around the world. To be faithful in its mission of relief, development and peacebuilding in the name

“ While adaptation is key in reducing risk associated with climate change impacts, it does not address the root cause of climate change. Both mitigation and adaptation are essential to a comprehensive climate risk reduction strategy.”



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Fay, Marianne, et al. *Decarbonizing Development: Three Steps to a Zero-Carbon Future*. Climate Change and Development Series. Washington, D.C.: World Bank, 2015.

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Martens, Amy. *MCC and Climate Change: Responding to Climate Change Risks*. MCC, 2016.

of Christ, MCC must carefully consider how best to respond to climate change risks, while also assessing its role in adaptation and mitigation efforts.

Amy Martens is research associate in MCC's Planning, Learning and Disaster Response department.

Climate change and food security in Latin America and the Caribbean

MCC partners and their communities in Latin America and the Caribbean increasingly feel the effects of climate change on food security. In February 2017, MCC hosted partner representatives from eleven countries across Latin America and the Caribbean for an encounter to share experiences and knowledge around the themes of climate change and food security and to learn how MCC can best support them in climate change adaptation. While the challenges they face are many, MCC partners and their communities are responding by strengthening collective efforts for disaster mitigation and increased food security, including employing innovative agriculture and natural resource management practices and advocating to influence policies that affect their natural resources.

Although participants in this consultation represented organizations from a variety of contexts, common themes emerged in their conversations related to climate change and its effect on food security in their communities. Climate change impacts observed by partners included drought conditions, unpredictable rainfall patterns and elevated temperatures. Dates when rains have typically arrived, signaling the start of planting time, have become unreliable, while rains later in the season have become sporadic. Scientific research confirms the anecdotal evidence presented by these organizations that climate change is occurring. The Intergovernmental Panel on Climate Change reports temperature increases in Central and South America, as well as decreased rainfall in Central America. Already vulnerable regions are expected to see continued changes in water availability due to decreased rainfall overall. In addition, unusual extreme weather events have severely affected the Latin America region, increasing the vulnerability of communities to disaster. While studies suggest that, thanks to climate change, it may in the future be possible to grow maize, cassava, rice and sorghum in areas where such cultivation is not currently possible, almost half of municipalities will lose some climatic suitability to sustain current crops, especially coffee, beans and plantains. Climate change has had a significant negative impact on food security in the region due to droughts, unpredictable seasonal patterns and new insect infestations affecting agricultural production. Increasing numbers of people, especially youth, are migrating to cities or other countries because they no longer view rural livelihoods as viable options.

The effects of climate change on food security have led to common challenges for development organizations in Latin America and the Caribbean as they implement food security programming. First, while MCC's partners desire to build awareness of climate change so that local communities do not contribute to the problem, a lack of scientific understanding within communities about the causes of climate change presents challenges. Some communities have cultural or non-scientific explanations for climate change, attributing climate change to "the rain

being tied up” due to lack of faith or to the work of spirits or curses. These misguided assumptions about climate change exacerbate the difficulty of raising awareness and changing current practices in communities, as community members do not easily discern what they can change and when they need to focus on adaptation.

Second, MCC’s partners and their communities struggle to know how to balance immediate hunger needs arising from crop losses with the implementation of strategies for long-term development and care for the environment. A number of organizations have provided short-term food assistance to help their communities bridge the gap in food needs during periods of hunger. This strategy, however, raises questions about long-term vision, with partners asking how long food assistance can or should be carried out and how seasonal food assistance might be better integrated into long-term food security efforts.

In response to these challenges, MCC’s partners deploy common strategies to protect and strengthen food security in the face of climate change. These organizations emphasize the importance of developing structures that link small-scale farmers and their communities with one another. By working together in an organized fashion, farmers can be more effective in adapting to climate change and improving food security by increasing small-scale farmer marketing opportunities as well as through collective efforts to seek support from local and national government. Partners also highlight agro-forestry as a strategy that, through the planting of fruit trees, provides food and income, while also mitigating the risk of landslides by reforesting degraded and landslide-prone areas. MCC partners seek increased training on crop diversification and improved agricultural techniques, the use of drought-resistant crops or seed varieties, improving value chains through the processing or transformation of agriculture products and strategies for water and soil conservation. Improved training and learning will allow farmers to strengthen their potential for food production and adapt to climate change impacts. Finally, these partners recognize the importance of advocating to different levels of government to influence policies and practices that will be key to the protection of local water and soil resources and thus to climate change adaptation.

One of MCC’s partners in Bolivia, OBADES (Baptist Organization of Social Development), is using some of these strategies to improve agriculture production in the highland region of Copacabana in order to increase income and food security for families impacted by drought. OBADES supports communities in constructing water infiltration ditches in order to collect water runoff from steep slopes. This water is in turn used to irrigate potato and other vegetable crops, as well as to feed aquifers in lower-lying areas. Staff provide trainings to farmers on organic crop production, natural resource management, soil conservation and the efficient use of water runoff. The project also promotes the production of maca (a root high in nutritional value) as a cash crop and strengthens community-producer associations to provide increased opportunities to process and sell maca products. These strategies provide additional income for farming families and help them cope with drought, thus reducing poverty, decreasing migration rates and improving food security in the community.

In Haiti, agro-forestry efforts have helped mitigate disaster. MCC currently works with 22 vulnerable communities in the Artibonite Valley to improve

“ Partners call on MCC to come alongside them as they face challenges and develop strategies to respond to climate change.”

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World Bank; CIAT. *Climate-Smart Agriculture in Nicaragua. CSA Country Profiles for Africa, Asia, and Latin America and the Caribbean Series*. Washington D.C.: The World Bank Group, 2015.

food security by working with local small-holder farmers and tree nursery committees to grow and distribute fruit and non-fruit tree seedlings, establish family agro-forestry gardens and reforest degraded mountainous areas. As part of its agro-forestry program, MCC has established kids' clubs to provide experimental, hands-on gardens to get children involved in learning about food security, nutrition and environmental protection. Children in turn influence their parents, who make household choices around food. In addition, farmers improve their farmland by using intercropping methods and planting a diversity of crops to increase and diversify production. Agricultural production is supported through grain banks that enable farmers to store seeds for the upcoming season and that can serve as food storage in case of future droughts. The long-term reforestation work MCC has supported over the last 30 years in Haiti likely mitigated impacts of Hurricane Matthew in 2016. Post-hurricane, MCC staff noted that communities with significant reforestation work had fewer destroyed gardens and houses, along with fewer landslides. The additional tree cover from reforestation efforts likely slowed down winds at ground level and secured the soil to prevent landslides. Lower-lying areas that had reforested land above them also experienced less flooding, likely resulting from the additional trees upslope helping water absorb into the ground more quickly, leading to less runoff rushing down to lower areas.

Partners call on MCC to come alongside them as they develop strategies to respond to climate change and support food security in their communities. During the Haiti encounter this past winter, partners emphasized the need for MCC to support collaboration and strengthen alliances, networks and connections among local partners, communities and countries to help encourage people in their work and promote sharing of knowledge. Partners asked MCC to focus more on disaster prevention and mitigation work and to produce educational materials related to the causes of climate change and key strategies for food security. They encouraged MCC to use its position as an international organization to support local, regional, national and international advocacy efforts with and on behalf of its partners. While climate change and its impact on food security present a myriad of challenges for partners in Latin America and the Caribbean, their daily efforts in climate-affected communities encourage and challenge MCC to support partners as they carry out this work.

Darrin Yoder is regional disaster coordinator for Central America and Haiti with MCC. He lives in Managua, Nicaragua.

Empowering women for disaster risk reduction in Myanmar

Rakhine, the second poorest state in Myanmar, is frequently exposed to natural hazards, including cyclones, flooding, landslides, earthquakes, droughts, tsunamis and fires in forested and rural areas. Climate change models predict that Myanmar over the coming years and decades will experience increased temperatures, more frequent and intense drought periods, changing rainfall patterns and an increased risk of flooding, as well as more frequent and intense extreme weather events resulting in storm and flood surges and sea-level rise that will affect almost all communities across the country. Communities in Rakhine are already facing a variety of these impacts. Rakhine is also at risk of complex

disasters exacerbated by natural hazards: a combination of food shortages, fragile or failing economic, political, and social institutions and internal conflict that leads to displacement of people. Rakhine suffers from a long-standing political and military conflict between the central government, the Myanmar Army and Buddhist nationalists, on the one hand, and the Arakan Army and the Rohingya Muslim community, on the other. Additionally, the Rakhine/Arakan Army has conflicts with other indigenous groups in Rakhine (the national government recognizes 135 ethnic groups in Myanmar): fighting has repeatedly displaced people from their homes and villages, thereby increasing their vulnerability. A lack of resources and education, coupled with these complex social relationships in a multi-layered, multi-religious and ethnic group state, add to the vulnerability of the people in Rakhine.

Women in Rakhine are disproportionately vulnerable to complex disasters, natural hazards and climate change impacts due to cultural beliefs, traditional practices and socio-economic conditions. Women are more likely than men to experience increased loss of livelihoods and gender-based violence. In some situations, they have experienced greater loss of life during and after a disaster. Women for the World (WFW), a Yangon-based Myanmar non-governmental organization (NGO), partners with the Indigenous Women's Coalition for Peace (IWCP) in Rakhine to reduce risk and increase resilience. They believe that gender and indigenous identity are critical elements for addressing climate change impacts and disaster risk. The integration of Rakhine indigenous women's local knowledge and their practices in disaster mitigation, preparation and response efforts are essential for reducing risk and increasing resilience.

WFW and IWCP work with diverse women's savings groups to increase understanding of the impacts of climate change, assess their local knowledge and increase their capacity to prepare for and respond to disaster events. WFW's primary belief is that while women are the most vulnerable members of the community, they are also the agents for change. In Rakhine, a lack of employment opportunities has resulted in the migration of men and young women to find work outside of their villages, leaving women, the elderly and children to deal with the aftermath of natural hazards. Women are the caregivers for children, the sick and the elderly; they are often the sole breadwinners, as men, older boys and girls leave to seek job opportunities in urban centers or across borders; they are responsible for securing food; they are informal healthcare providers; they are responsible for the safekeeping of livestock; and they are responsible for finding and maintaining fresh drinking water supplies. Women are more restricted in travel and are more likely to be restricted from owning land, from borrowing or investing money, and from diversifying livelihoods through starting a new business.

Conversely, women are also holders of essential cultural, historical and economic knowledge within their communities, making them vital participants in efforts to decrease disaster risk. Women manage environmental resources to sustain their households and act as informal healthcare providers. They have survival and coping skills to respond to disasters, have local community networks and possess local knowledge of the community, including the location and needs of the most vulnerable (the elderly, children, persons with disabilities) during a crisis, making them critical players in disaster risk reduction (DRR).

“ Gender and indigenous identity and knowledge are critical characteristics of vulnerability to climate change impacts and disaster risk.”

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Mitchel, T., Tanner, T., and Lussier, K. *We Know What We Need: South Asian Women Speak Out on Climate Change Adaptation*. Action Aid. (November 2007).

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UN World Conference on Disaster Risk Reduction. *Mobilizing Women's Leadership in Disaster Risk Reduction: High Level Multi-Stakeholder Partnership Dialogue*. (March 2015).

WFW and the IWCP gather women to build peace and resilience together through a women's savings group model. In addition to training on group formation and savings management, group members also receive training about women's rights, conflict transformation, domestic violence and DRR. They are taught to conduct village mapping to assess the vulnerabilities in their villages, from infrastructure mapping to household and community population mapping. Representatives from each group, representing different ethnicities, meet together to receive in-depth conflict transformation and disaster management trainings which they take back to their groups. Members of the IWCP continue working with the savings groups, supporting them as they learn and plan.

WFW operates from the assumption that women cannot begin adapting to climate change if they do not believe they can. To strengthen self-reliance, WFW employs a participatory learning process. WFW trainers first raise awareness among women's groups in an atmosphere of openness to women's stories and experiences in disasters as a method of learning and naming what the women already know. For example, women already know that shelter for women and children is vulnerable to natural hazards and that the safest cyclone resistant shelter does not provide privacy to women and children. They know that rains are increasing and temperatures are rising, leading to greater malaria incidences and the need for more mosquito nets. After WFW staff have introduced the process of village mapping, they step back (to their Yangon office) while the savings groups create village maps that identify geographic strengths and weaknesses, households (including the number of family members in each household) and the most vulnerable persons and where they live (the elderly, young children, persons with disabilities). The women also mark the location of their livestock, schools, fishing boats and other community and household assets.

In WFW trainings, group members learn skills for assessing risks and vulnerability and for identifying sustainable adaptation solutions for their communities. Savings group members report that the support they receive through the group makes them less vulnerable. Through the savings group, women can access loans to start small businesses, diversifying their bases of income. One group trained by WFW is building a safe and hygienic latrine to decrease the risk of disease. Other groups are advocating for improved early warning systems in indigenous languages, especially related to weather forecast news, and for more detailed information regarding the nature of hazards so communities can be better prepared to respond. WFW-trained groups have publicly identified cyclone resistant buildings in every village that can adequately serve as secure shelters. In the event of a natural hazard, the women are prepared to secure livestock in a safe place where they can be maintained until the risk has abated and to store food and water in a secure space. After flooding, women rebuild their homes to be more flood resistant, drawing upon loans through their savings group. Recognizing the need to improve rice growing practices to decrease vulnerability to climate change, groups have strengthened their relationships with the government's agricultural department to secure technical assistance. One group has already seen increased yields after using a savings group loan to lease a training plot and accessing technical support from the government agricultural department. Empowered by the social and organizational support from savings groups, women have formed DRR management teams in their villages tasked with providing accessible information about potential risks and developing record-keeping

practices to help assess potential disaster situations and track changes to facilitate ongoing adaptability.

The role of vulnerable people in risk reduction measures should not be underestimated. When women become involved in addressing their vulnerabilities, they are encouraged and empowered to continue making improvements in their communities. If women's roles and local knowledge are not included in disaster planning and response, disaster risk reduction interventions will be ineffective in reducing risk. Women are vital and powerful agents of change: it is imperative that they are participants in disaster planning, preparation and response. When WFW, the IWCP and diverse women's savings groups in Rakhine join together to assess local knowledge and integrate this knowledge into DRR planning and action, they reduce the risks posed by natural and complex disasters and empower women to create a more peaceful, resilient and adaptive society.

Sandra Reisinger is MCC representative for Myanmar, based in Phnom Penh, Cambodia. Van Lizar is director of Women for the World (WFW), an MCC partner organization in Myanmar.

“ While women are the most vulnerable members of the community, they are also the agents for change.”

Building resilience in a drought-prone district of Ethiopia

Boricha *woreda* (district) is located in the Sidama zone of the Southern Nations, Nationalities and Peoples' Region of Ethiopia. One of the most drought-prone districts of Ethiopia, Boricha is almost completely dependent on rain-fed agriculture. Boricha has been heavily affected by climate change, experiencing recurrent drought and rainfall variability. Land degradation has caused the formation of gullies that are invading farmlands and creating significant soil erosion, washing away seeds, fertilizer and seedlings from farmlands, reducing production capacity, damaging soil health and productivity and impacting household income. Climate change impacts and land degradation, along with high population growth, small land holdings and illiteracy, are the major causes of food insecurity in the area and have resulted in a low community capacity to adapt to climate change impacts. This article discusses the efforts of Meserete Kristos Church Relief and Development Association (MKC-RDA) to build climate change resilience in Boricha and analyzes key findings that indicate that MKC-RDA's efforts in Boricha have contributed to soil and water conservation, improved livelihoods and increased food security, in turn reducing vulnerability to climate change impacts.

For over a decade up through 2014, MKC-RDA carried out a community- and environmentally-oriented disaster risk reduction and food security program in Boricha with the aims of addressing short- and long-term causes of food insecurity and of building resilience to climate change. The program adopted the strategy of “developmental relief,” in which relief and development interventions are implemented simultaneously to provide vulnerable communities with efficient safety nets during hunger periods together with strategies for long-term food security to help communities meet their food needs in the future and have the capacity to cope with hazards such as drought. This approach emphasized disaster preparedness and building community resilience to future disasters by reducing vulnerability, rather than focusing only on immediate support to disaster victims.

One component of the Boricha program was the provision of predictable food and cash transfers through food for work (FFW) and cash for work (CFW) initiatives designed to contribute to achieving the overall objective of climate change adaptation and resilience. This safety net programming provided cash payments or edible maize and food oil to vulnerable households, fulfilling their food needs during months when the majority of the population was food insecure. These FFW and CCW schemes also ensured that households possessed the means to successfully rebuild and sustain their livelihoods after chronic drought. Participants received food or cash for work that included the rehabilitation of roads and bridges to allow community members to transport their commodities to market and the implementation of soil and water conservation strategies, such as the construction of terraces and water harvesting ponds. Other initiatives included producing seedlings for agroforestry in nurseries and on communal and private land and constructing seed banks to ensure farmers' easy access to crop varieties adapted to local conditions.

Another focus of the Boricha program was the implementation of climate-smart agriculture (CSA), including conservation agriculture technologies. CSA is defined as “agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces/removes greenhouse gases (mitigation) where possible” (FAO). Project activities under CSA included optimizing the use of land resources, the introduction of anti-erosion measures and water harvesting and saving technologies, the promotion of forage and agroforestry development and training in conservation agriculture techniques such as mulching, minimum soil disturbance, crop rotation and the adoption of appropriate cropping patterns such as intercropping. In addition, the Boricha project established and strengthened farmer's groups, savings groups, self-help groups and other community organizations to support promotion of sustainable agricultural practices, increase capacity in soil and water conservation, support income generation initiatives and increase literacy.



The Boricha initiative

emphasized disaster preparedness and building resilience of communities to future disasters by reducing vulnerability, rather than focusing only on immediate support to disaster victims.”

An independent team evaluated the Boricha program two years after it ended to determine program impacts. The evaluation found that, given the environmental degradation in Boricha, sustainable management of natural resources was critical to the pursuit of food security and economic development within the community. Soil and water conservation activities resulted in the rehabilitation of land and natural resources: more than seven hundred hectares were protected, contributing to improved vegetative cover. Benefits included a greater availability of organic manure through foliage from reforested or maintained plants, improved availability of firewood, minimization of wind erosion and the availability of trees for traditional medicines. Project activities also assisted in soil restoration and prevention of salinization and the loss of arable land, including through the reforestation of previously unusable lands. Terraces, soil bunds, check dams and other flood and erosion control and water harvesting activities improved soil fertility and restored ground and surface water sources. Conservation agriculture techniques, including soil cover, mulch and the addition of compost, also contributed to reduced soil erosion, improved water holding capacity of farmlands and increased soil productivity. Even in years with delayed, sporadic or poor rainfall, farmers practicing conservation agriculture benefited from higher residual moisture levels, which enabled seeds to germinate and sustained crop maturity. As a result of project activities, communities have reduced risk of disaster from flooding, increased

agricultural productivity and improved access to water for irrigation and household use, contributing to resilience to climate change impacts.

The Boricha project resulted in poverty reduction and improved food security for the majority of participating households, increasing their ability to cope with and manage the effects of hazards. Seventy-three percent of all participating households stated that they successfully transitioned out of extreme poverty during the program's duration; only six percent of households participating in the project reported still being in extreme poverty. Reforestation of watershed land and the resulting biodiversity contributed to the expansion of animal fattening, cattle rearing and beekeeping activities for income generation. Tree plantations, as well as vegetation which emerged because of soil and water conservation activities, created employment and improved incomes through forest harvesting and sales of by-products. Because of the supplementary income obtained through the sale of surplus produce from the project gardens, honey products and fruit harvested from agroforestry, women experienced improved livelihoods and incomes. These women reported greater self-esteem and increased financial independence. Additionally, the overall food security situation of the target community improved over the program period. For example, the frequency of daily food intake of three meals a day increased from 12.9 percent at the start of the project to 77 percent by the end, while those consuming two or fewer meals a day decreased from 87.1 percent to 21 percent. Overall, the evaluation found that the project provided households with opportunities for more successful and diverse livelihoods, contributing to increased incomes and food security. As a result of diverse income sources, increased ability to save money and improved food security, households in Boricha are more resilient, able to adapt to changing condition and to with cope with the effects of hazards.

Results from the MKC-RDA program in Boricha demonstrate that food and cash transfer programming to address seasonal food insecurity, climate-smart agriculture interventions and sustainable natural resource management all play important roles in protecting the assets and income of poor families, mitigating disaster risk and building resilience to climate change impacts in drought-affected communities.

Frew Beriso is conservation agriculture technical specialist with the Canadian Foodgrains Bank in Ethiopia. He previously worked for MKC-RDA as the Boricha Program Manager.

The Green Climate Fund

The greatest suffering from climate change impacts is being felt by those who already feel the most need—and who are the least equipped to respond effectively. These vulnerable communities are also the least responsible for causing climate change. Wealthy nations, including the United States, bear the greatest responsibility for climate change and therefore have a moral obligation to repair the damage and help communities adapt to new realities. In recognition of this moral obligation, MCC and other faith-based organizations have advocated strongly for increased U.S. government funding for international programs to help low-income communities adapt to the impact of climate change.

Unfortunately, the current U.S. administration has not only promised to halt funding for international adaptation efforts, but recently announced



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Nyasimi, M., Amwata, D., Hove, L., Kinyangi, J., and Wamukoya, G. "Evidence of Impact: Climate-Smart Agriculture in Africa." 2014.

it would pull the U.S. out of the Paris accord, an international agreement on climate change mitigation and adaptation formulated within the United Nations Framework Convention on Climate Change (UNFCCC) and signed by all but two of the world's countries.

Working with faith-based partners in Washington, D.C., MCC staff advocate directly to U.S. government officials and also work to educate constituents on the need for adaptation assistance, encouraging them to advocate to their members of Congress. In recent years, much of this advocacy has focused on the Green Climate Fund (GCF). In 2014, the U.S. pledged \$3 billion to the GCF, but, in every year since, it has been an uphill struggle to secure congressional approval for these funds. Meanwhile, although the faith community has continued to support the GCF, a growing tension has emerged within faith-based climate change advocacy efforts between advocating for continued funding and at the same time criticizing the fund's shortcomings.

The Green Climate Fund was created in 2010 by the UNFCCC. Currently one of several existing mechanisms for multilateral financing for climate-related projects, the GCF is expected to become the main mechanism for such financing in future years. The GCF is not an agency of the United Nations, but is a legally independent institution accountable to the UNFCCC. The fund is intended to be part of a paradigm-shifting, transformative response to climate change, implementing a country-driven, gender-sensitive approach to mitigation and adaptation.

The GCF board consists of 24 members with equal representation from “developed and developing countries.” Two civil society and two private sector representatives serve as non-voting observers to board meetings. The GCF funds projects for mitigation and adaptation efforts as well as for technology transfer and capacity building. Projects are funded through grants and concessional loans from the GCF, often in combination with local public or private sector funding. The World Bank is the interim trustee for the GCF until a permanent trustee is selected through an open, competitive process.

An initial fundraising campaign collected pledges for the GCF from 37 countries totaling \$10.2 billion. Funds allocated for the GCF are intended to be new financing rather than the repurposing of funds from existing development assistance programs. By 2015, the GCF had received signed contributions for more than 50 percent of pledges, reaching a benchmark to enable the fund to begin approving projects.

GCF projects focus on a variety of mitigation and adaptation efforts, including efforts to develop renewable energy, improve energy efficiency, strengthen resilience to climate change impacts and protect sustainable livelihoods. All developing country members of the UNFCCC are eligible to receive GCF funds. Funding comes through accredited entities which can include national or regional development banks, government ministries, nongovernmental organizations and other national or regional organizations that meet accreditation standards.

At the end of 2015, the GCF approved its first eight projects totaling \$169 million, including an energy efficiency green bond in Latin America and an early warning system for climate-linked disasters in Malawi. In 2016, the board approved an additional \$1.3 billion worth of funding, including a \$166 million food security and resilience project in India for solar micro-

“ Wealthy nations, including the United States, bear the greatest responsibility for climate change and therefore have a moral obligation to repair the damage and help communities adapt to new realities.”

irrigation in the vulnerable tribal areas of Odisha and a \$232 million hydropower project in the Solomon Islands.

In many ways, the stated goals of the GCF align well, at least in theory, with MCC goals in areas such as stakeholder engagement, gender sensitivity, local capacity building and reaching the most vulnerable. In reality, however, GCF board members and advocates have raised concerns about safeguards, consultation and transparency.

In 2015, the GCF came under intense pressure to start funding projects but, at the same time, the board was still in the process of developing policies and procedures. One board member commented: “We are building the plane as we fly the plane.” The continued rush to keep funds flowing means that even board members complain that they do not have adequate information to assess individual projects. Civil society representatives have raised objections about some accredited funding entities (most of which are multilateral and bilateral development agencies), noting links to the fossil fuel industry, financial mismanagement and human rights abuses.

The GCF is currently using the International Finance Corporation’s social and environmental safeguards until it develops its own. These standards incorporate some good elements, but lack a strong standard for local consultation and consent and contain insufficient protections for the rights of indigenous peoples as well as for national habitats and biodiversity. In 2015, a wetlands restoration project in Peru came under criticism due to concerns over whether indigenous communities had been properly consulted. Doubts persist about the adequacy of consultation with local communities and the transparency of the project approval process.

Other concerns have involved the need for more capacity building for local institutions, the process for considering high-risk projects, the benefits of large versus smaller-scale projects, the level and types of co-funding with the private sector, definitions of adaptation and mitigation and the use of grants versus loans.

The GCF continues to work to address concerns. Internal capacity issues plagued the fund early on, but it has since significantly increased staff capacity. This expanded staffing has allowed the fund to make initial improvements in communications and transparency. The GCF is currently developing its own environmental and social safeguards and has committed to the development of an indigenous peoples policy.

The board continues to discuss how to provide more funding for building capacity at the local level. Additionally, national development agencies, such as the U.S. Agency for International Development (USAID), have begun to reorient some funding to reinforce GCF capacity building efforts.

Going forward, U.S. government participation in funding and shaping the GCF is in doubt, particularly in light of the impending U.S. withdrawal from the Paris Agreement. Total U.S. contributions to the fund thus far total \$1 billion. The current administration, however, has stated it will not fulfill the remaining \$2 billion of the U.S. pledge. Until now, advocates for U.S. funding of the GCF have maintained good dialogue with the U.S. representative on the GCF board, but it is unclear whether this access will continue. MCC and its partners will continue to push for positive changes using any avenues available, including dialogue with the non-voting civil society representatives to the board.



Amerasinghe, Niranjali, Joe Thwaites, Gaia Larsen, and Athena Ballesteros. *The Future of the Funds: Exploring the Architecture of Multilateral Climate Finance*. Washington, D.C.: World Resources Institute, 2017.

GCF 101: A Comprehensive Guide on How to Access the Green Climate Fund.

Green Climate Fund: Projects.

Schalatek, L., Nakhoda, S. and Watson, C. Overseas Development Institute. *The Green Climate Fund*. In *Climate Finance Fundamentals* 11 (December 2015).

Additional resources on U.S. environmental policy available at <https://washingtonmemo.org/environment/>

National Congress of American Indians on the impact of climate change on indigenous communities. Available at <http://www.ncai.org/policy-issues/land-natural-resources/climate-change>.

Though the GCF very much remains a work in progress, there is space for advocacy to call the Green Climate Fund into being what it was envisioned to be—a much-needed tool for helping vulnerable communities adapt to our changing climate.

Tammy Alexander is senior legislative associate for domestic affairs in the MCC U.S. Washington Office.

Churches working against climate change: four case studies

Since its inception a decade ago, Mennonite Creation Care Network has called congregations in Mennonite Church USA (MC USA) and Mennonite Church Canada to respond to environmental crises with reflection, repentance and action. While the Network has not focused its efforts specifically on climate change, some of its congregations have embraced the issue. Over the past ten years, Mennonite congregations have installed solar panels, challenged their members to reduce personal carbon consumption, made local ecosystems more resilient and engaged in political action. This article investigates the factors that motivate some congregations to act while many in Canada and the U.S. still ignore the carbon counts that tick steadily upward. I interviewed representatives (including pastors, lay leaders and other congregational members) from four congregations actively responding to climate change to find out what common actions they undertook and what motivated and sustained those initiatives.

“ The most effective question for a congregation to ask may not be, ‘How can we fight climate change?’ but rather, ‘What environmental concerns threaten us?’”

All of the churches in this study were majority white and college-educated, located in towns or cities with a university. Apart from those similarities, their contexts were quite different. Tucson’s Shalom Mennonite Fellowship bakes in the Sonoran Desert, while at First Mennonite Church in Edmonton, Alberta, people joke that global warming is a good thing. Huntington Mennonite Church is located in Newport News, Virginia—one of the communities in the U.S. most vulnerable to sea level rise. Park View Mennonite Church in Harrisonburg, Virginia, nestles in the Shenandoah Valley and draws strength from ideas and activities at Eastern Mennonite University (EMU).

The Park View and Huntington congregations have focused their environmental efforts specifically on climate change. Both churches aim to become completely independent of fossil fuels in the future and are approaching the issue systematically. At First Mennonite and Shalom, efforts have included climate change discussions, but have been focused more broadly. Most notable climate-related activities included an eco-footprint group at First Mennonite and water conservation measures at Shalom in response to increasing drought.

Each of the congregations interviewed share three characteristics that supported climate change action. First, each church has benefited from the leadership of a pastor with a long-term interest in creation care paired with one or more lay leaders with relevant professional expertise. At First Mennonite, the pairing involved a pastor with extensive experience in camp settings and an environmental sociologist. At Huntington, a NASA scientist whose job includes climate modeling teamed up with a pastor who “understood climate change from a theological perspective.” At Harrisonburg, a pastor who shared that “Creation care has been

an interest of mine as long as I can remember” worked with a business professor who researches sustainability. Shalom’s pastor brought ten years of experience as the director of Christian Peacemaker Teams to her role. “It was work that CPT does in partnering with First Nations that made me understand how care of the earth and care of human rights are really the same thing,” she reported. Lay leaders at this church include a specialist in watershed management and several scientists who contributed to the congregation’s level of comfort with climate change science. While respondents were quick to state that their accomplishments were congregation-wide efforts, these teams were blessed with skilled pastoral and lay leadership.

Second, each of the congregations displayed an ability to integrate deeply held faith concepts with contemporary issues. A lay leader at First Mennonite told about the significance of God as Creator to his own conversion to Christianity and his ongoing work with climate change. A Shalom congregation member applied the language of stewardship to the congregation’s stormwater project, reflecting, “I believe God calls us to use science as a tool, to use religion as a tool and to put them together in some way that reflects reality, not what’s convenient for me.” Park View’s climate change reparations policy, meanwhile, reflects the congregation’s “commitment to mirror God’s love and care for creation and God’s love and care for the vulnerable and poor of the world.” The Huntington survey respondent highlighted Jesus’ relationship with creation as a model for the church’s action today. Respondents expressed these convictions in a faith language accessible to other churches.

Third, respondents from each of the congregations recognized climate change as a threat to themselves or to people to whom they felt a connection. For Huntington residents living near the coast, rising sea levels are local issues. Shalom members described the drought they lived with and the ways climate change played into the plight of immigrants supported by the congregation. International students from EMU and the overseas experiences of Park View members connected the church to areas vulnerable to climate change. For First Mennonite, the issue was prominent in a different way. One respondent explained:

In Alberta, there’s lots of talk about the oil and gas basis for the economy. That raises the question of what we’re going to do about our carbon emissions. But people both inside and outside of our church rely on resource extraction. It frames the conversation and impacts how we look at things. We realize people’s livelihoods are part of this.

One way or another, climate change touched each of these congregations directly, propelling them towards climate action.

Findings from this study offer encouragement for people of faith hoping the church will put its moral weight behind climate change efforts. First, many people are ready to confront climate change. A survey created by the Center for Sustainable Climate Solutions, a program recently launched at EMU in collaboration with MCC and Goshen College, gauged responses to climate change within the Mennonite community. Almost two-thirds of MC USA respondents said they were alarmed by or concerned about climate change. This finding suggests that the majority of MC USA members are ready to engage climate change issues if provided with good leadership.



Mennonite Creation Care Network. Available at <http://www.mennocreationcare.org/>

Park View Mennonite Church. “Creation Care Council.” Available at <http://www.pvmchurch.org/about-the-creation-care-council.html>.

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Stella, Rachel. “Virginians Put a Charge into Creation Care.” *Mennonite World Review* (August 2016).

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Center for Sustainable Climate Solutions. Available at <https://www.sustainableclimatesolutions.org/>.

Second, effective communication goes a long way in enhancing support for climate change action. None of the four congregations reported conflict related to their climate change initiatives, possibly because their leaders were good communicators. Leaders used a variety of ways to communicate about initiatives and keep them on the front burner. These included announcements, children's time, sermons and projects requiring hands-on labor from many volunteers. Furthermore, despite advanced levels of education, leaders explained the theological rationales for their climate change work in accessible language.

Finally, the study underscores the importance of leadership development. Both future pastors and potential environmental professionals now have opportunities to learn in faith-based settings where creation care is a priority. Anabaptist Mennonite Biblical Seminary (AMBS) expresses its desire to work at climate change through membership in the Seminary Stewardship Alliance, through curricular initiatives and by drawing energy from a large solar installation. Undergraduate opportunities abound, such as the three sustainability majors that Goshen College launched this year: these courses of study have the potential to develop more creation care leaders like the ones represented in this study.

For the Mennonite Creation Care Network, the most noteworthy finding from this congregational study is the conclusion that efforts to mobilize congregations to climate change action should focus more deliberately on pastors and their role as moral leaders and eco-theologians, as well as on environmental professionals within congregations. Secondly, the above research confirms the Network's big-tent approach that encourages congregations to work at creation care in ways relevant to their own contexts. If people are motivated by threats they take personally, the most effective question for a congregation to ask may not be, "How can we fight climate change?" but rather, "What environmental concerns threaten us?" A zealous attack on air pollution will bring with it climate change benefits even if the motivator was childhood asthma, not a more abstract desire for carbon reduction. Healthy farms can sequester carbon no matter if the farmer fears climate change or soil erosion. By focusing on engaging pastors in creation care and encouraging congregations to find personal motivation for working on environmental issues, Mennonite Creation Care Network and other faith-based organizations can help to develop the characteristics within church congregations that lead to climate change action.

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