

International Adaptation Assistance Summary & Policy Principles

*Created to guide MCC Washington Office staff in their
Evaluation and Advocacy of U.S. Government Policies*



The MCC Washington Office is a Mennonite and Brethren in Christ presence on Capitol Hill providing and encouraging prophetic witness to the way of Christ on matters of U.S. public policy. To fulfill this mission, the office monitors and analyzes U.S. public policy, facilitates MCC's peace and justice advocacy, informs, listens to and encourages the church in its witness to the government, and is guided by the biblical vision of being restored to right relationship with God, each other and the whole of creation.

The following summary and policy principles will be used to guide Washington Office staff as they evaluate and advocate on U.S. government policies related to climate change and, specifically, international adaptation assistance.

Table of Contents

Summary	3
<i>Problem.....</i>	<i>3</i>
<i>Proposed Solutions.....</i>	<i>3</i>
<i>Role of the United States</i>	<i>4</i>
<i>MCC Perspective</i>	<i>5</i>
<i>Additional Resources</i>	<i>6</i>
Policy Principles	7
Appendix 1: MCC Stories	8
<i>India</i>	<i>8</i>
<i>Kenya</i>	<i>8</i>
<i>Burundi.....</i>	<i>9</i>
Appendix 2: Regional and Sectoral Impacts.....	11
<i>Agriculture and Food Security.....</i>	<i>11</i>
<i>Water Supplies.....</i>	<i>11</i>
<i>Human Health.....</i>	<i>11</i>
<i>Natural Disasters</i>	<i>12</i>
<i>Africa</i>	<i>12</i>
<i>Asia</i>	<i>12</i>
<i>Island Nations</i>	<i>13</i>
<i>Latin America.....</i>	<i>13</i>

International Adaptation Assistance Policy Summary



Problem

As a result of global climate change, many developing nations are facing the current or future threat of severe humanitarian crises. Although these nations are the most vulnerable to climate change, they are the least responsible for its origin – it is developed nations that bear the greatest responsibility for the greenhouse gas emissions that cause climate change.¹

The resulting changes in our climate are already leading to an increase in the incidence of floods, droughts, water shortages from disappearing glaciers, famine, and other natural disasters.² Average global temperatures are projected to rise several degrees over the next century, which will severely exacerbate situations in countries that already suffer from extreme poverty.³ Climate change is also contributing to the spread of diseases. Tropical diseases such as typhoid and malaria are expected to expand in range and infection rates. Between 75 and 250 million people across Africa are likely to suffer more severe water shortages because of shifts in rainfall and temperature, and yields from rain-fed agriculture could drop 50% in some countries.⁴

Countries already burdened with heavy national debt and lacking financial resources are the least able to effectively address these problems. Unfortunately, women and children are likely to be the worst affected, since women are typically providers of food and water, and they generally have less financial resources.⁵ The new challenges of climate change are likely to create deeper debt, cause extreme humanitarian crises, impede development efforts, and trap nations in worsening cycles of poverty.⁶

Proposed Solutions

Impacted populations are working locally and nationally on creative adaptation efforts, but they lack the resources to fully accomplish the necessary goals. Various international treaties, including the Kyoto Protocol and the United Nations Framework Convention on Climate Change (UNFCCC), have established funding mechanisms to help developing nations adapt to the effects of climate change.⁷ Adaptation assistance would fund various projects, including food security, disaster risk management, protection of local eco-systems, water access, and health care, as well as technology transfers and capacity building. Adaptation assistance is an effort to aid those impacted by climate change; not a replacement for critical emission reduction standards which exist to reduce climate change.⁸

Since climate change impacts various regions differently, there are many forms of adaptation assistance that are needed, including the following priorities. Disaster risk prevention programs are important in areas that are threatened by flooding or severe weather, so that damage can be minimized.⁹ Adaptation efforts would assist small-scale farmers and promote forms of agriculture that are drought-resistant and ecologically sustainable, so that food security and biodiversity can be protected for future generations. It is also critical to protect local eco-systems and water access through conservation efforts and efficient water systems, so that communities have the material and ecological resources to cope with changes in local climate patterns.¹⁰

Developed nations would also repay the “climate debt” they owe to developing nations by helping them develop renewable and efficient sources of energy through technology transfers and funding, so that these nations can have equal opportunity to economic development without worsening climate change.¹¹

Adaptation efforts would include both short term relief projects and long term efforts to prevent and address future crises. The established adaptation funds are intended to be in addition to ongoing development programs and will be implemented with the oversight of international and multilateral bodies. The focus of these efforts should depend upon local conditions and needs, as determined by international and local experts.¹² One model, Community-Based Adaptation, targets assistance to vulnerable communities, while empowering them to use their own resources and knowledge in localized adaptation projects. This model would focus on identifying and supporting capacities for adaptation within the community, but provide outside support and materials as needed.¹³

The United Nations and World Bank currently oversee six multilateral adaptation funds, including the Least Developed Countries Fund and the Adaptation Fund (AF).¹⁴ However, only \$300 million was pledged toward the UN programs as of 2008,¹⁵ with projected additional revenue of \$300 million per year for the AF by 2012.¹⁶

Since adaptation assistance is only part of the broad campaign that is needed to deal with climate change, developed nations must also commit reducing carbon emissions, creating clean technologies, and mitigating damage to the natural environment.

Role of the United States

The United States is the world’s second largest emitter of greenhouse gases, producing about 22 % of global carbon emissions.¹⁷ As such, the US has a moral responsibility to correct the harm that it has caused. From a purely pragmatic perspective, the instability caused by climate change also endangers US economic security, national security, and diplomatic interests abroad.¹⁸

As a world political leader and a wealthy nation, the US can be a significant force for reform through its spending and through the example it sets. Reducing carbon emissions is vital, but it is not enough. It is also necessary to support those who already impacted by climate change. The UN Development Program estimates that global adaptation assistance needs could reach \$86 billion annually by 2015, although some estimates are lower.¹⁹ Some NGOs have urged the US to contribute 25% of these funds,²⁰ but Oxfam has recommended that the US should contribute about 44%, based on its economic capacity and historical responsibility.²¹ Such programs could be funded through the sale of carbon emission allowances and various energy taxes, as well as through congressional appropriations.

In December 2009, UNFCCC members, including the US, will meet in a Conference of the Parties in Copenhagen, Denmark, to negotiate future actions on climate change and adaptation. The Obama administration has highlighted the need for adaptation assistance to vulnerable nations and requested \$50 million from Congress for the Least Developed Countries Fund.²²

MCC Perspective

MCC works in developing nations around the world, serving vulnerable populations and partnering with local organizations. Our projects in local development, agricultural assistance, community health, disaster relief, and women's rights will continue to be impacted by climate change. Climate change and energy policies have contributed to the global food crisis, seriously impacting MCC's efforts to support food security. In 2008, MCC appealed for \$1 million in contributions to provide emergency food aid in Ethiopia, where droughts and rising food prices have led to widespread shortages.²³ Additionally, since climate change can be a contributing factor to violent conflict, there must be increased support for conflict transformation efforts in impacted regions.

As we serve others in the name of Christ, we recognize these new threats to our global partners and work with them to ensure that they are able to adapt. MCC is currently working with local partners on adaptation projects, including the installation of drought-resistant irrigation systems in Kenya and the restoration of flood damaged farmland in India.^{24 25} We know that the climate change crisis will create the most suffering for those who already feel the most need. As partners with the poor, it is important that we encourage our governments to act responsibly and craft policies that are both compassionate and just.

Daniel Foxvog, MCC U.S. Washington Office, August 2009

¹ "Commitments for Annex I Parties under paragraph 1(b)(i) of the Bali Action Plan: Evaluating developed countries' historical climate debt to developing countries Submission by the Republic of Bolivia to the AWG-LCA" *United Nations Framework Convention on Climate Change*, 3. http://unfccc.int/files/kyoto_protocol/application/pdf/bolivia250409.pdf

² Ibid.

³ "Climate Basics," *International Institute for Environment and Development*, 2008.

<http://www.iiied.org/climate-change/key-issues/climate-negotiations-capacity-building/climate-basics>

⁴ "A Way Forward on International Climate Adaptation Finance" *InterAction: A United Voice For Global Change*, 1.

http://www.interaction.org/files.cgi/6771_A_Way_Forward_on_International_ClimateAdaptation_Finance.pdf

⁵ Ibid, 4.

⁶ "Evaluating Developed Countries' Historical Climate Debt to Developing Countries," 3-4.

⁷ "Climate Basics," *International Institute for Environment and Development*, 2008.

⁸ "Evaluating Developed Countries' Historical Climate Debt to Developing Countries," 4.

⁹ Huq, Saleemul and Hannah Reid, "Community Based Adaptation: A Vital Approach to the Threat Climate Change Poses to the Poor," *International Institute for Environment and Development*, 2007, 2.

<http://www.iiied.org/pubs/pdfs/17005IIED.pdf>

¹⁰ "A Way Forward on International Climate Adaptation Finance," *InterAction: A United Voice For Global Change*, 4.

¹¹ "Evaluating Developed Countries' Historical Climate Debt to Developing Countries," 4-8.

¹² "A Way Forward on International Climate Adaptation Finance," *InterAction: A United Voice For Global Change*, 2-4.

¹³ Huq, Saleemul and Hannah Reid, "Community Based Adaptation: A Vital Approach to the Threat Climate Change Poses to the Poor," 1-2.

¹⁴ "Climate Change Adaptation Funding," *Oxfam Canada, Oxfam Quebec, CARE Canada, Canadian Council for International Development*, 3 July, 2009 Memo to Stephen Kelly, chief of staff for Minister of the Environment Jim Prentice, 2.

¹⁵ Adaptation Funding and Development Assistance: Some FAQs." *International Institute for Environment and Development*, November 2008, 2. <http://www.iiied.org/pubs/pdfs/17041IIED.pdf>

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- ¹⁶ Harrison, Pete and Jan Strupczewski, "EU Finance Chiefs to tap Industry for Climate Fund," *Reuters*, 5. March, 2009
<http://www.reuters.com/article/latestCrisis/idUSL5875623>
- ¹⁷ "Greenhouse Gases, Climate Change, and Energy," *Energy Information Administration: Official Energy Statistics from the US Government*. <http://www.eia.doe.gov/bookshelf/brochures/greenhouse/Chapter1.htm>
- ¹⁸ "Evaluating Developed Countries' Historical Climate Debt to Developing Countries," *United Nations Framework Convention on Climate Change*, 3.
- ¹⁹ "A Way Forward on Climate Change Adaptation," *InterAction: A United Voice For Global Change*, 1.
- ²⁰ Ibid.
- ²¹ Raworth, Kate, "Oxfam Briefing Paper. Adapting to Climate Change: What's Needed in Poor Countries and Who Should Pay," *Oxfam International*, 29 May, 2007, 23-28.
<http://www.oxfam.org/sites/www.oxfam.org/files/adapting%20to%20climate%20change.pdf>
- ²² "Climate Basics," *International Institute for Environment and Development*. 2008
- ²³ "MCC Seeks \$1.5 Million for Emergency Food Aid" *Mennonite Central Committee*.
<http://mcc.org/news/news/article.html?id=386>
- ²⁴ "Food Program Update: An Update from Mennonite Central Committee Canada Food Program." *Mennonite Central Committee Canada*. April 2009.
- ²⁵ "Case Study of Sand Dams in Kenya" *Mennonite Central Committee*.
http://www.ccic.ca/f/docs/003_food_2009-03_case_study_kenya.pdf

Additional Resources

- "Care for Creation: Stories," Mennonite Central Committee. <http://mcc.org/careforcreation/stories/>
- "Adaptation 101: How Climate Change Hurts Poor Communities—and how we can Help," *Oxfam America*.
http://www.lwv.org/Content/ContentGroups/GlobalDemocracy/StateofClimateChange/Adaptation_101_Oxfam_America.pdf
- "Adaptation Funding," *ActionAid*.
http://www.actionaidusa.org/what/food_rights/adapt_funding/
- Ayers, Jessica and Saleemul Huq, "Supporting Adaptation to Climate Change: What Role for Official Development Assistance?" *International Institute for Environment and Development*, 8 November 2008. <http://www.iied.org/climate-change/key-issues/evaluating-adaptation/supporting-adaptation-climate-change-what-role-for-official-development-assistance>
- "Adaptation," *United Nations Framework Convention on Climate Change*.
<http://unfccc.int/adaptation/items/4159.php>
- "Community Based Adaptation Exchange," *Eldis Community*.
<http://community.eldis.org/cbax/>

International Adaptation Assistance Policy Principles



NOTE: The following principles will be used to guide MCC Washington Office staff as they evaluate and advocate on U.S. government policies related to international adaptation assistance

Mennonite Central Committee: MCC is the relief, development and peace agency of the Mennonite and Brethren in Christ churches in North America. The following principles are derived from the experience of MCC staff in the United States in their attempts to demonstrate God's love by working among people suffering from poverty, conflict, oppression and natural disaster.

1. **Commit to assisting nations impacted by climate change.** Since the United States has historically been the largest emitter of greenhouse gases, we have a moral obligation to help populations suffering from increased drought, famine, and natural disasters. The United States should also help developing nations to develop renewable and efficient sources of energy so that they can reach their full potential without greatly increasing greenhouse gas emissions.
2. **Include adaptation assistance to developing nations as part of a larger effort to address climate change.** Adaptation is only part of the broad campaign that is needed to reduce climate change and deal with its consequences. It is also essential for developed nations to reduce carbon emissions, create clean technologies, and mitigate damage to the natural environment.
3. **Target assistance toward the most vulnerable populations.** Women, children, indigenous people, and the poor suffer the most from food shortages and other humanitarian crises. Assistance programs should target these groups through nutrition programs, micro-loans, health care, disaster risk management, sustainable agriculture programs, and community development.
4. **Give adequate funding to ensure assistance programs are successful.** To have a significant impact, the United States should commit a fair percentage to assistance funds, including the Least Developed Countries Fund. The UN Development Program estimates that global adaptation assistance needs will reach \$86 billion annually by 2015. Various major NGOs have recommended that the United States should contribute at least 25% of these funds. Funds could come from the sales of industrial cap and trade permits for carbon emissions.
5. **Allow flexibility and include diverse types of assistance programs.** A single model will not adequately address the unique challenges and resources in different countries. Assistance programs work best when they are country-based and include both short-term and long-term efforts. It is critical to incorporate local voices in program planning and implementation.
6. **Strengthen international partnerships.** Climate change is a global issue that can only be solved by international cooperation. The United States must support climate change treaties, build partnerships, and allow international oversight for aid programs and emission reduction.
7. **Adaptation should be included in the broader development framework.** Adaptation projects must not replace or undercut existing development projects. For new development projects, adaptation needs should be considered as part of the planning process.

Appendix 1: Stories from MCC Projects

India

Through its account at the Canadian Foodgrains Bank, MCC is assisting with livelihood rehabilitation activities. In August of last year, people living in Bihar, India were hit with massive flooding, affecting 2.4 million people. In the districts where MCC is working, 80 percent of the population has lost their homes and livelihoods. Agriculture in the area has been paralyzed by the sand and silt that is now deposited on agricultural land.

In the immediate aftermath of the flooding, MCC provided emergency food relief for thousands of displaced people. Months after the crisis, there remains a severe food shortage in the area. MCC is assisting 7,500 families who are the most vulnerable including landless, minority groups, the elderly and female-headed households. The cost of food in Bihar has also risen significantly when compared with three years ago.

In addition to protecting the most vulnerable, the project aims to help rehabilitate land including the removal of salt and silt from 200 acres of agricultural land. Once this work is finished, it is envisioned that 90 percent of all participating families will be able to resume agricultural activity.

With the support of donors to MCC's account at Canadian Foodgrains Bank, MCC continues to provide food assistance to these vulnerable groups around the world. Other significant responses are occurring in Sudan, Ethiopia, Zimbabwe, Congo, Myanmar and Afghanistan.

Story credit: "Food Program Update: An Update from Mennonite Central Committee Canada Food Program. April 2009"

Kenya

In Kenya, it is estimated that one third of the population —10 million people—are at risk of hunger as a result of drought and crop failure. In the Maasai communities where MCC's partners work, men have been forced to leave their communities in search of pasture land for their cattle. Meanwhile, food prices in this area are 2-3 times higher than they were last year, while cattle prices have plummeted. This has put families in a very difficult situation. Recent assessments indicate that over 45 percent of the population in this region requires food assistance in meeting short-term food needs.

MCC and its partners are providing emergency food assistance to 3,000 families for six months and providing nutritious food to 43 primary schools, feeding over 7,000 students. In exchange for maize, beans and cooking oil, community members participate in community work which will enhance longer term food security. Participants in the program plant drought-resistant crops, collect fodder and assist with the maintenance and development of water resources.

In addition to MCC's work with Maasai communities in the Kajiado district, MCC is also responding to the crisis in the eastern region of Kenya. For many years, MCC has assisted communities and partners in the construction of sand dams. By harvesting rain water, in semi-arid regions, these sand dams have

helped reduce the impact of the drought. In areas where sand dams are mature, communities now have reliable access to water to grow drought resistant crops and vegetables.

The construction of sand dams is done by volunteer self-help groups. Communities which have already benefited from the construction of dams are motivated to build more because they see the results. However, the current drought is making it increasingly difficult to move ahead with new sand dam construction because family members have been forced to migrate and find employment elsewhere. MCC is providing food to 3,600 families who are participating in the construction of sand dams. This food-for-work project helps families meet their short-term food needs while also helping communities manage drought in the future.

Story credit: "Food Program Update: An Update from Mennonite Central Committee Canada Food Program. April 2009"

Burundi

Subsistence farmers are planting hundreds of thousands of trees in the African country of Burundi through a project supported by MCC.

MCC is providing canned meat to compensate more than a thousand farmers for their work in replanting forests that are vital to the local water supply. The ultimate goal is to alleviate droughts that cause food shortages, according to Brandon Thiessen, an MCC reforestation consultant from St. Catharines, Ontario, who is working in Burundi.

"Trees play a critical role in the water cycle," Thiessen says. "They return water to the atmosphere through respiration, and they increase the amount of water that soaks into the ground because their roots break the hard surface of the dirt."

Burundi, located in east-central Africa, is one of the poorest and most densely populated countries on the continent. It was devastated by a civil war from 1993 to 2005. During the war, soldiers destroyed forests to deprive rebels of cover, and struggling farmers cleared more land for cultivation.

Burundi's forests were reduced by 60 percent during the 1990s, and less than 4 percent of the total land area was forested in 2000, according to the U.N. Food and Agriculture Organization. By comparison, 25 percent of the United States and 22 percent of Africa as a whole are forested.

An MCC partner organization, Help Channel Burundi, is organizing farmers to plant trees in northern Burundi's Kirundo province in exchange for turkey meat that MCC canned in Canada and the United States. For a day's work planting trees or tending a tree nursery, farmers are paid two 28-ounce cans of turkey.

Thiessen says that the project's "food-for-work" design is very popular with farmers and government officials because of the region's food shortages.

"Last year there was a famine because there wasn't enough rain, and people were starving," Thiessen says. "They were suffering very much. So, in an effort to both provide people with employment and

provide them with what they needed most, it seemed like a very good thing for them to be paid in a food-for-work arrangement."

Thiessen says farmers tell him they prefer canned meat instead of cash payment for their work. The value of the canned turkey exceeds what most Burundians earn in a day, he says.

In the last year, farmers planted 460,000 trees through the food-for-work project. This total includes 400,000 trees that were planted to improve a watershed, and 60,000 fruit trees that the farmers planted for themselves.

Thiessen says that farmers are hopeful that reforestation will lead to fewer droughts and better crop yields. These are likely results of the project, but reforestation is a slow process, he says.

"If the population isn't educated to the real benefits of caring for their environment, then they might grow impatient while waiting for their harvests to increase," Thiessen says.

Story credit: Tim Shenk "MCC provides canned meat for tree-planting in Burundi"
January 29, 2007 <http://mcc.org/news/news/article.html?id=112>

Appendix 2: Regional and Sectoral Impacts

Regional and Sectoral Differences

The impacts of climate change will be regionalized phenomena. Weather patterns, diseases and natural disasters will impact different regions in different ways, making local-level expertise and experience requisite for climate change adaptation. Furthermore, technical expertise, especially in agriculture, water management, healthcare and natural disaster management will be required. To be most effective in working on climate change adaptation, partnerships with local organizations and experts must be fully developed. Climate change is a threat to everyone, however, it is the poorest and most marginalized individuals in society who will suffer the most as they lack the resources to adapt to changes in the climate and environment.

How will different sectors be impacted by climate change?

Agricultural Production and Food Security

The altered weather patterns caused by climate change greatly impact agricultural production and thus will lead to greater food insecurity for large segments of the world's population. This issue is also critical because billions of people depend upon agriculture for their livelihood, and small holders are especially vulnerable. Higher temperatures will shift planting seasons and cause certain crops to become unviable. Many major food crops are not resistant to higher temperatures, thus climate change will drastically impact the diets of the world's poor. Additionally, changes in precipitation patterns can lead to droughts or flooding in previously fertile agricultural lands. Countries nearest to the equator are likely to be the hardest hit in terms of agricultural production. These countries will likely become more dependent on outside sources for food aid, especially if steps are not taken to promote adaptation in terms of agricultural production.

Water Supplies

Fresh water resources, which are already under facing the prospect of overuse around the world, will be further strained by climate change. Water is essential for human consumption, agricultural and livestock production, and the production of many goods and materials used on a daily basis. Due to alterations in weather patterns it is expected that many more regions around the world will face more severe and prolonged droughts. Furthermore, as glaciers in mountain ranges around the world begin to shrink, glacier-fed rivers will begin to provide less water to the billions of people who are dependent on them for their livelihoods and wellbeing. Many natural lakes are also shrinking due to the changes in rainfall patterns, warming temperatures, and overuse. On the other hand, some regions of the world will experience severe flooding from increased rainfall and melting glaciers.

Human Health

Warmer temperatures will also lead to a greater incidence in disease, especially tropical diseases. These diseases, such as malaria, thrive in hotter weather and will spread even more quickly in already high risk areas such as Africa. Areas which experience substantial levels of flooding as a result of climate change will face possible epidemics of water-borne diseases. Water shortages will restrict sanitation in some regions, and flooding will contaminate water supplies in other regions. Once again, it is the poorest and most vulnerable who will suffer because they will not be able to afford adequate health care. If action is

not taken towards expanding health care provision, especially in developing countries, disease will become even more widespread as a result of climate change.

Natural Disasters

As a result of climate change, natural disasters are expected to become more frequent and severe. Tropical cyclones, in addition to droughts and floods, will become more intense. Due to melting glaciers sea levels are expected to rise over the next several decades. These events will be especially challenging for low-lying and impoverished areas. Some countries, especially small island nations, are even predicted to lose significant levels of land mass due to massive flooding. Natural disasters will not only cause considerable damage to population centers and structures, but will impact food security and human health. To counter this rising threat disaster management and aid assistance plans must be improved to ensure rapid and effective natural disaster response efforts around the world.

How will different areas be affected by climate change?

Africa

Africa is likely to be the continent hardest hit by the effects of climate change. While the impacts of climate change will vary from region to region across Africa, the general trends are troubling. Despite already suffering from severe droughts and highly variable weather patterns, Africa will face significant challenges with climate change adaptation. Parts of Sub-Saharan Africa are expected to experience considerable reductions in annual rainfall, putting these regions' already vulnerable agricultural sectors in an even more precarious position. Egypt will face the greatest challenge in dealing with the impact of climate change on water supplies, since its substantial agricultural production will be severely threatened by the decrease in water availability. Southern and Central Africa will also experience a greater incidence of tropical diseases due to the warmer temperatures, and in Central Africa from increased rainfall. Additionally, ecosystems across Africa are expected to change due to climate change, which will require local populations to adapt different lifestyles and livelihoods.

Asia

As a result of high population density, many regions across Asia are particularly susceptible to the impacts of climate change. Agricultural production is likely to face significant threats across Asia due to changing rainfall patterns and declining freshwater resources. China is already facing water shortages, and its water supplies will be further strained by climate change. Additionally, changing weather patterns across South Asia may alter the critically valuable monsoon rains harming agricultural production in one of the world's most heavily populated regions. The impacts of the shifting monsoon rains will likely be exacerbated by the melting of the Himalayan glaciers, which provide vital water resources to Pakistan, India, Nepal, Bhutan, Myanmar, and Bangladesh. Many people across the low lying coastal regions of South and Southeast Asia will be at high risk for flooding from rising sea levels. Bangladesh will be uniquely threatened by rising sea levels, since most of the country is low-lying. Not only will flooding destroy homes and farmland, but it will salinize the current water resources, making farming and fishing much more difficult. Additionally, due to increased temperatures, disease will be more widespread. In areas which are likely to experience significant flooding, major epidemics of cholera and other water-borne diseases could occur. Finally, rapid economic development and urbanization across South, Southeast and East Asia, in conjunction with climate change, will put considerable strain on food, water, and other natural resources.

Island Nationsⁱ

Climate change will probably have the most dramatic and catastrophic impact in low-lying island nations, which are mainly in the Pacific and Indian Oceans. The UN International Panel on Climate Change has predicted that melting polar icecaps will cause the sea level to rise significantly – perhaps as much .58 meters (1.9 feet) over the next century. Islands face contamination of fresh water supplies, erosion, salinization of farmland, and frequent flooding. Typhoons and tropical storms are also becoming more frequent and severe, endangering these vulnerable islands. Island nations are already suffering from more severe floods and storm damage, and some countries expect to lose significant amounts of land, or even become completely submerged by the sea. The government of Maldives, an archipelago whose highest point is only 2.4 meters (7.9 feet) above sea level, announced in 2008 that they were seeking to purchase land in South Asia so that the population could permanently relocate. In 2009, the government of Kiribati also announced plans to gradually resettle residents in other countries. There are already climate refugees who have evacuated low atolls and flooded islands, and this refugee problem is likely to become widespread over the next few decades. Many regions will suffer economically from reduced tourism revenue and the destruction of natural habitats which they depend upon for resources.

Latin America

The impacts of climate change on Latin America will vary widely from region to region. Many regions have already experienced shifting weather patterns and increased variation in climate. These changes, including droughts and increased rainfall, will drastically impact the way of life for people throughout the region, especially those dependent on agriculture for their livelihoods. The drastic changes in land use policies over the past several decades in Latin America, which include deforestation and increased industrial agriculture practices, will likely exacerbate the changes to these ecosystems. The economies of many Latin American countries are heavily dependent on agriculture, which means that climate change will likely damage the livelihoods of a large percentage of the population. The increased frequency and intensity of hurricanes poses a significant threat to Central American countries. Already hit hard by recent storms, these countries will have to deal with even more deadly natural disasters. It will be important for many of these countries to develop better disaster management and response mechanisms.

Jeremy Zook, for the MCC U.S. Washington Office, July 2009

ⁱ Island Nations section by Daniel Foxvog, August 2009