



January 2019

CLIMATE CHANGE

Activities of Selected Agencies to Address Potential Impact on Global Migration

GAO Highlights

Highlights of [GAO-19-166](#), a report to congressional requesters

Why GAO Did This Study

The effects of climate change, combined with other factors, may alter human migration trends across the globe, according to the International Organization for Migration. For example, climate change can increase the frequency and intensity of natural disasters, causing populations to move from an area. Climate change can also intensify slow-onset disasters, such as drought, crop failure, or sea level rise, potentially altering longer-term migration trends.

GAO was asked to review how U.S. agencies address climate change as a potential driver of global migration. For State, USAID, and DOD, this report (1) describes executive branch actions related to climate change and migration from fiscal years 2014 through 2018; (2) examines the extent to which the agencies discussed the potential effects of climate change on migration in their plans and risk assessments; and (3) describes agency activities on the issue. GAO analyzed documents on administration priorities; reviewed agency plans, risk assessments, and documentation of agency activities; and interviewed agency officials.

What GAO Recommends

GAO recommends that State provide missions with guidance that clearly documents its process for climate change risk assessments for country strategies. In commenting on a draft of this report, State indicated that it would update its integrated country strategy guidance and will specifically note that missions have the option to provide additional information on climate resilience and related topics.

View [GAO-19-166](#). For more information, contact David Gootnick at (202) 512-3149 or gootnickd@gao.gov, or Brian J. Lepore at (202) 512-4523 or leporeb@gao.gov.

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What GAO Found

From fiscal years 2014 through 2018, a variety of executive branch actions related to climate change—such as executive orders and strategies—affected the Department of State (State), the U.S. Agency for International Development (USAID), and the Department of Defense (DOD), including their activities that could potentially address the nexus of climate change and migration. For example, a fiscal year 2016 presidential memorandum—rescinded in 2017—required agencies to develop implementation plans to identify the potential impact of climate change on human mobility, among other things. In general, however, climate change as a driver of migration was not a focus of the executive branch actions. For example, a fiscal year 2014 executive order—also rescinded in 2017—requiring agencies to prepare for the impacts of climate change did not highlight migration as a particular concern.

State, USAID, and DOD have discussed the potential effects of climate change on migration in agency plans and risk assessments. For example, State and USAID required climate change risk assessments when developing country and regional strategies, and a few of the strategies reviewed by GAO identified the nexus of climate change and migration as a risk. However, State changed its approach in 2017, no longer providing missions with guidance on whether and how to include climate change risks in their integrated country strategies. In doing so, State did not include in its 2018 guidance to the missions any information on how to include climate change risks, should the missions choose to do so. Without clear guidance, State may miss opportunities to identify and address issues related to climate change as a potential driver of migration.

The three agencies have been involved in climate change related activities but none were specifically focused on the nexus with global migration. For example, USAID officials said that the agency's adaptation efforts, such as its Pastoralist Areas Resilience Improvement through Market Expansion project in Ethiopia, were the most likely to include activities, such as enhancing resilience, that can indirectly address the issue of climate change as a driver of migration.

A U.S. Agency for International Development Project in Ethiopia Includes Activities to Enhance Resilience That Can Indirectly Address Climate Change as a Driver of Migration



Source: Mercy Corps. | GAO-19-166

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Abbreviations

ACP	African, Caribbean, and Pacific States
ADB	Asian Development Bank
CRS	Congressional Research Service
DHS	Department of Homeland Security
DOD	Department of Defense
GDP	Gross Domestic Product
IOM	International Organization for Migration
IPCC	Intergovernmental Panel on Climate Change
LDCF	Least Developed Countries Fund
PIER	Private Investment for Enhanced Resilience
State	Department of State
State/OES	State's Bureau of Oceans and International Environmental and Scientific Affairs
State/PRM	State's Bureau of Population, Refugees, and Migration
TPS	Temporary Protected Status
UN	United Nations
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
USAID	U.S. Agency for International Development
USAID/FFP	USAID's Office of Food for Peace
USAID/OFDA	USAID's Office of U.S. Foreign Disaster Assistance
USIP	United States Institute of Peace

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January 17, 2019

Congressional Requesters

Around the world, climate change is predicted to affect precipitation levels, increase temperatures, and contribute to more frequent natural disasters like flooding and drought, among other effects, according to the Intergovernmental Panel on Climate Change (IPCC).¹ At the same time, recent trends suggest that the number of global migrants will continue to increase,² according to the International Organization for Migration (IOM).³ While many factors, including lack of economic opportunity and political instability, influence the decision to migrate, these international organizations predict that climate change will further increase global human migration, but they do not know to what extent. Nonetheless, the potential link between climate change and migration has raised both humanitarian and national security concerns for the U.S. government.

As a result of the risks that climate change poses to environmental and economic systems,⁴ in February 2013 we placed *Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks* on our High Risk List.⁵ As we reported in February 2017, for example, from fiscal years 2005 through 2014, the federal government obligated at least \$277.6 billion across 17 federal departments and agencies for disaster assistance programs and activities.⁶ Extreme

¹Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report* (Geneva, Switzerland: 2014).

²In this report we use "migration" to refer to global, human migration. In keeping with the International Organization for Migration (IOM), we define migration as including both the movement of people within a country, and across international borders, either temporarily or permanently.

³International Organization for Migration, *World Migration Report 2018* (Geneva, Switzerland: 2017).

⁴GAO, *High-Risk Series: An Update*, [GAO-15-290](#) (Washington, D.C.: Feb. 11, 2015). GAO's high-risk program identifies government operations with greater vulnerabilities to fraud, waste, abuse, and mismanagement or the need for transformation to address economy, efficiency, or effectiveness challenges.

⁵GAO, *High-Risk Series: An Update*, [GAO-13-283](#) (Washington, D.C.: February 2013). See also GAO, *High-Risk Series: Progress on Many High-Risk Areas, While Substantial Efforts Needed on Others*, [GAO-17-317](#) (Washington, D.C.: Feb. 15, 2017).

⁶[GAO-17-317](#).

weather events—such as floods, drought, and hurricanes—are expected to increase or worsen because of climate change, according to the U.S. Global Change Research Program.⁷ In February 2017, we reported that the federal government needs a cohesive strategic approach with strong leadership and the authority to manage climate change risks that encompasses the entire range of related federal activities and addresses all key elements of strategic planning.⁸

You asked us to review issues related to human migration due to climate change. In this report, we (1) describe executive branch actions related to climate change and migration from fiscal years 2014 through 2018; (2) examine the extent to which the Department of State (State), the U.S. Agency for International Development (USAID), and the Department of Defense (DOD) have discussed the potential effects of climate change on migration in their plans and risk assessments; and (3) describe State, USAID, and DOD activities, if any, that are related to climate change and global migration.

To describe executive branch actions related to climate change and migration from fiscal years 2014 through 2018, we reviewed key documents related to climate change that were developed during this time period. These documents included executive orders, budget requests, and strategies. We chose fiscal years 2014 through 2018 as our time frame based on our review of recent executive orders related to climate change. To examine State, USAID, and DOD discussions of the potential effects of climate change on migration in their plans and risk assessments, we reviewed relevant documents completed since fiscal year 2014. These documents included agency adaptation plans and country and regional strategies. We selected State, USAID, and DOD because the agencies' missions of diplomacy, development, and defense provide the foundation for promoting and protecting U.S. interests

⁷Jay, A., D.R. Reidmiller, C.W. Avery, D. Barrie, B.J. DeAngelo, A. Dave, M. Dzaugis, M. Kolian, K.L.M. Lewis, K. Reeves, and D. Winner, 2018: Overview. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA.

⁸[GAO-17-317](#).

abroad.⁹ To describe State, USAID, and DOD activities that are related to climate change and global migration, we identified and examined agency activities potentially related to the issue. For example, we analyzed State and USAID data such as project descriptions for activities that received adaptation funding from the Global Climate Change Initiative. We determined that the USAID and State adaptation project data were sufficiently reliable for the purposes of describing their efforts. For all three objectives we interviewed officials from State, USAID, and DOD. Further details on our scope and methodology can be found in appendix I.

We conducted this performance audit from October 2017 to January 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Potential Impacts of Climate Change on Migration

According to international and U.S. government sources, climate change poses serious risks to many of the physical and ecological systems upon which society depends, although the exact details of these impacts are uncertain.¹⁰ Climate change may intensify slow-onset disasters, such as drought, crop failure, and sea level rise. Climate change is also increasing

⁹We also reviewed documents and met with officials from the Departments of Homeland Security and Treasury, the National Oceanic and Atmospheric Administration, the U.S. Environmental Protection Agency, and the U.S. Global Change Research Program. We did not include these agencies in our review because they did not have assessments or activities related to climate change as a driver of global migration during the time frame of our review.

¹⁰Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report* (Geneva, Switzerland: 2014); International Organization for Migration, *The Atlas of Environmental Migration* (New York: Routledge, 2017); Kumari Rigaud, Kanta, Alex de Sherbinin, Bryan Jones, Jonas Bergmann, Viviane Clement, Kayly Ober, Jacob Schewe, Susana Adamo, Brent McCusker, Silke Heuser, and Amelia Midgley. 2018. *Groundswell: Preparing for Internal Climate Migration*. Washington, DC: The World Bank; U.S. Department of Defense, *National Security Implications of Climate-Related Risks and a Changing Climate, 8-6475571* (July 2015); and U.S. Agency for International Development, *Climate Change and Conflict in Africa and Latin America: Findings and Preliminary lessons from Uganda, Ethiopia, and Peru* (2013).

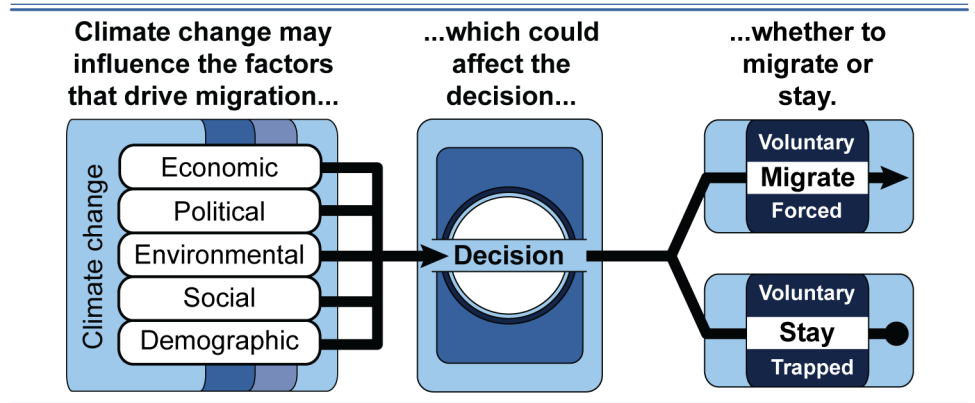
the frequency and intensity of extreme weather events, including sudden-onset disasters, such as floods, according to key scientific assessments.¹¹ These effects of climate change may alter existing migration trends across the globe, according to IOM. (See appendix II for further discussion of climate change as a driver of migration in seven geographic regions.) For example, sea level rise, a slow-onset disaster, may result in the salinization of soil and drinking water, thereby undermining a country or community's ability to sustain livelihoods and maintain critical services, which could cause some people to migrate. Sudden-onset disasters may also contribute to migration as people flee natural disasters, in most cases leading to temporary displacement. For example, people may either voluntarily migrate, or be forced to migrate, to earn money needed to rebuild damaged homes after flooding, especially as extreme weather events increase in intensity and number. If unable or unwilling to migrate, people may find themselves trapped or choosing to stay in deteriorating conditions. Sources agree that the effects of climate change generally impact internal migration, while migration across international borders due to climate change is less common.¹²

In deciding whether to migrate, people weigh multiple factors including economic and political factors, social or personal motives, or demographic pressures. The effects of climate change add another layer of complexity to this decision, but there is debate about the role climate change plays in migration. Figure 1 depicts how climate change may influence other factors that drive the decision to migrate or stay.

¹¹Jerry M. Melillo, Terese (T.C.) Richmond, and Gary W. Yohe, eds., *Climate Change Impacts in the United States: The Third National Climate Assessment*, (Washington, D.C.: U.S. Global Change Research Program, May 2014) and Intergovernmental Panel on Climate Change, 2014: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1132 pp.

¹²Schuyler Null and Lauren Herzer Risi, Woodrow Wilson International Center for Scholars, USAID Office of Conflict Management and Mitigation Discussion Paper, *Navigating Complexity: Climate, Migration, and Conflict in a Changing World* (November 2016); Kumari Rigaud, Kanta, Alex de Sherbinin, Bryan Jones, Jonas Bergmann, Viviane Clement, Kayly Ober, Jacob Schewe, Susana Adamo, Brent McCusker, Silke Heuser, and Amelia Midgley. 2018. *Groundswell: Preparing for Internal Climate Migration*. Washington, DC: The World Bank; The United Kingdom Government Office for Science, *Foresight: Migration and Global Environmental Change: Final Project Report* (2011).

Figure 1: Climate Change as a Potential Influence on Other Factors that Drive Migration



Source: GAO analysis of United Kingdom Government Office for Science information. | GAO-19-166

Note: Additional factors may influence migration. These include the cost of moving, social networks, and diasporic links, among others. Further, personal or household characteristics, such as age, religion, or education, may make migration more or less likely.

There are limitations to reliably estimating the number of people displaced by climate change because there are no reliable global estimates for those migrating due to slow-onset disasters, and estimates for those migrating due to sudden-onset disasters are based on limited data, according to IOM. The lack of reliable data is due in part to the multi-causal nature of migration. Further, IOM notes that forecasts for the number of environmental migrants by 2050 vary from 25 million to 1 billion.¹³ They and others have questioned the methodologies used to arrive at even these broad estimates.

¹³International Organization for Migration, *IOM Outlook on Migration, Environment and Climate Change* (Geneva, 2014).

Climate Change Impacts on Migration that May Affect National Security

Migration, potentially driven by climate change, may contribute to instability and result in national security challenges, according to some international organizations and national governments.¹⁴ For example, an influx of migrants to a city may put pressure on existing resources, resulting in tensions between new migrants and residents, or between the population and its government. The U.S. Global Change Research Program has also stated that migration, such as displacement resulting from extreme weather events, is a potential national security issue.¹⁵ At different times, the United Nations General Assembly and, in 2014, DOD have deemed climate change to be a threat multiplier, as the effects of climate change could increase competition for resources, reduce government capacity, and threaten livelihoods, thereby causing instability and migration.¹⁶ Further, the U.S. intelligence community considers climate change to increase the risks of humanitarian disasters, conflict, and migration.¹⁷

Identifying the cause of a conflict, however, is complicated, and experts debate the connections linking climate, migration, and national security. For example, IOM has reported that existing evidence on climate migration and instability must be considered with caution.¹⁸ Further, some studies stress that other factors can mitigate the effects of climate change

¹⁴UN General Assembly, *Climate Change and Its Possible Security Implication: Report to the Secretary General* (2009); Intergovernmental Panel on Climate Change, *Climate Change 2014: Impacts, Adaptation, and Vulnerability* (Cambridge, United Kingdom: Cambridge University Press, 2017); The United Kingdom Government Office for Science, *Foresight: Migration and Global Environmental Change: Final Project Report* (2011); Guy S. Goodwin-Gill and Jane McAdam, *Climate Change, Disasters, and Displacement* (UNHCR–The UN Refugee Agency, 2017).

¹⁵Smith, J.B., M. Muth, A. Alpert, J.L. Buizer, J. Cook, A. Dave, J. Furlow, K. Preston, P. Schultz, and L. Vaughan, 2018: Climate Effects on U.S. International Interests. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA.

¹⁶UN General Assembly, *Climate Change and Its Possible Security Implication: Report to the Secretary General* (2009); and United States Department of Defense, *2014 Quadrennial Defense Review* (Washington, D.C.: 2014).

¹⁷United States Office of the Director of National Intelligence, *Worldwide Threat Assessment of the U.S. Intelligence Community* (February, 2018).

¹⁸International Organization for Migration, *The Atlas of Environmental Migration* (New York: Routledge, 2017).

on migration and stability, including governance and community resilience, as the World Bank has reported.¹⁹

U.S. Government Agency Roles Related to Climate Change

State, USAID, and DOD are among the U.S. government agencies with a role in responding to issues related to climate change, including as a driver of migration.

- State interacts with foreign governments and international organizations focused on climate change and migration primarily through the Bureau of Oceans and International Environmental and Scientific Affairs (State/OES) and the Bureau of Population, Refugees, and Migration (State/PRM).
- USAID supports a range of development programs that help to mitigate the effects of climate change through the Bureaus for Economic Growth, Education and Environment; Democracy, Conflict and Humanitarian Assistance; Food Security; Asia; and Africa; and individual USAID missions.²⁰ Additionally, USAID's Offices of U.S. Foreign Disaster Assistance (USAID/OFDA) and Food for Peace (USAID/FFP) lead and coordinate the U.S. government's emergency responses to sudden- and slow-onset disasters, and complex emergencies overseas.²¹
- DOD assists in the United States' humanitarian response to sudden-onset disasters abroad through its six geographic combatant commands,²² with support from the Assistant Secretary of Defense for

¹⁹Kumari Rigaud, Kanta, Alex de Sherbinin, Bryan Jones, Jonas Bergmann, Viviane Clement, Kayly Ober, Jacob Schewe, Susana Adamo, Brent McCusker, Silke Heuser, and Amelia Midgley. 2018. *Groundswell: Preparing for Internal Climate Migration*. Washington, DC: The World Bank.

²⁰USAID officials said that, pending congressional approval, the technical leadership of USAID's climate adaptation work will move to the proposed Bureau for Resilience and Food Security as part of the Center for Resilience, and other climate technical leadership functions will move to the proposed Bureau for Development, Democracy and Innovation.

²¹USAID/OFDA is the lead federal coordinator for international disaster assistance. USAID/FFP is the U.S. government lead in providing emergency global food assistance. USAID said that, pending congressional approval, it intends to merge and restructure OFDA and Food for Peace to form the Bureau for Humanitarian Assistance in order to consolidate its response to natural disasters, famines, and man-made crises.

²²To perform its variety of missions around the world, DOD operates six geographic combatant commands which manage all military operations in designated areas of responsibility: U.S. Africa Command, U.S. Central Command, U.S. European Command, U.S. Northern Command, U.S. Indo-Pacific Command, and U.S. Southern Command.

Executive Branch Actions Related to Climate Change and Migration from Fiscal Years 2014 through 2018

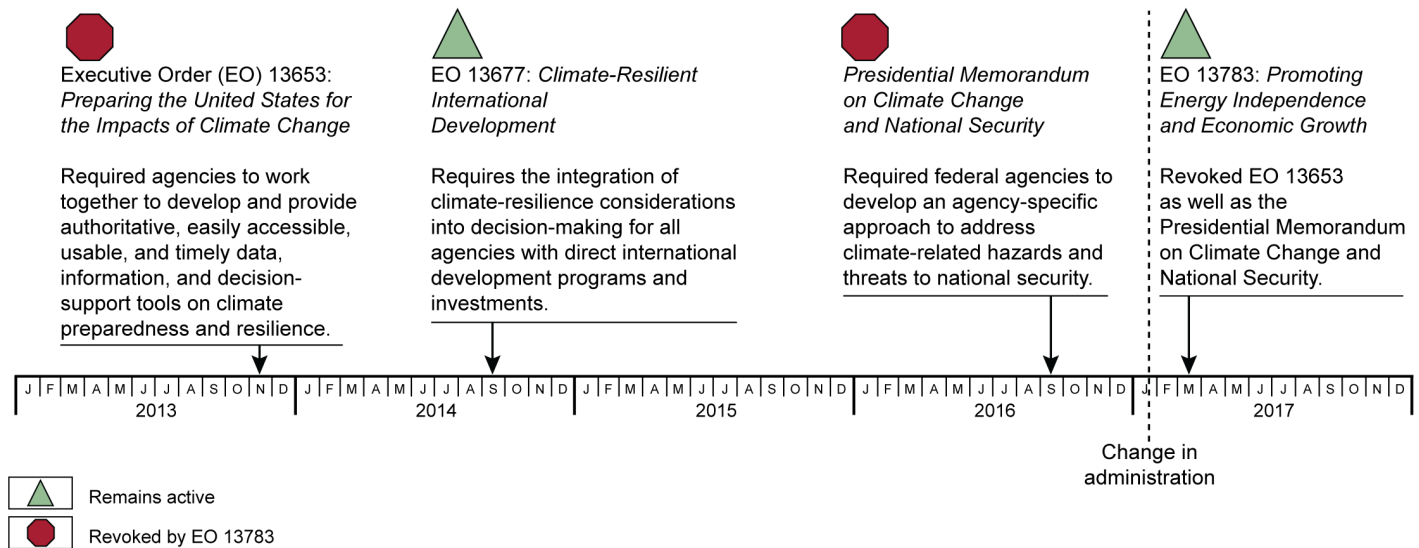
Climate change as a driver of migration was not a focus of the policy documents we reviewed for either the current or previous administrations during fiscal years 2014 through 2018. Our review of executive actions, budget requests, and executive branch strategies that affected State, USAID, and DOD found only brief mentions of climate change as a driver of migration. None of the documents we reviewed reflected a priority for assessing or addressing climate change as a driver of migration, although these documents reflect a shift in administrations' climate change priorities more generally.

Executive Actions

The previous administration issued two executive orders and a presidential memorandum related to climate change. These executive actions had a policy of improving climate preparedness and resilience, factoring climate-resilience considerations into agencies' international development decisions, and creating forums for interagency coordination. In March 2017, the current administration issued a subsequent executive order revoking some of the previous executive actions related to climate change. See figure 2 for a timeline of these executive actions.

²³The Joint Staff is responsible for assisting the Chairman of the Joint Chiefs of Staff, the military advisor to the President, in accomplishing his responsibilities for the unified strategic direction of the combatant forces; their operation under unified command; and their integration into a team of land, naval, and air forces. The Joint Staff is tasked to provide advice and support to the Chairman and the Joint Chiefs on matters including personnel, intelligence doctrine and architecture, operations and plans, logistics, strategy, policy, communications, cyberspace, joint training and education, and program evaluation.

Figure 2: Timeline of Recent Executive Actions Related to Climate Change



Source: GAO analysis of executive actions. | GAO-19-166

Note: The descriptions listed are examples of climate change-related requirements and are not the only requirements contained in these actions.

The previous administration issued three executive actions related to climate change, which included requirements focused on agencies' considerations of the impacts of climate change and established forums for interagency coordination. The current administration issued an executive action related to energy independence and climate change.

- Executive Order 13653: Preparing the United States for the Impacts of Climate Change.** Executive Order 13653 stated that agencies—including State, USAID, and DOD—shall, among other things, develop, implement, and update comprehensive Agency Adaptation Plans that integrate consideration of climate change into agency operations and overall mission objectives.²⁴ Executive Order 13653 also established the Council on Climate Preparedness and Resilience.
- Executive Order 13677: Climate-Resilient International Development.** Executive Order 13677 requires State, USAID, and other U.S. government agencies with direct international development

²⁴Exec. Order No. 13,653, *Preparing the United States for the Impacts of Climate Change*, 78 Fed. Reg. 66,819 (Nov. 1, 2013).

programs and investments to incorporate climate-resilience considerations into decision making by assessing climate-related risks to agency strategies, and to adjust relevant strategies as appropriate, among other things.²⁵ Executive Order 13677 also established the Working Group on Climate-Resilient International Development as part of the Council on Climate Preparedness and Resilience.

- **2016 Presidential Memorandum on Climate Change and National Security.** The 2016 presidential memorandum required, among other things, that agencies, including State, USAID, and DOD, develop an agency-specific approach to address climate-related threats to national security. It also required agencies to develop implementation plans that would describe how they would identify the potential impact of climate change on human mobility, including migration and displacement, and the resulting impacts on national security, among other requirements, and stated that the effects of climate change can lead to population migration within and across international borders, spur crises, and amplify or accelerate conflict in countries or regions already facing instability.²⁶ The 2016 memorandum also established the Climate and National Security Working Group.
- **Executive Order 13783, Promoting Energy Independence and Economic Growth.** Executive Order 13783 revoked Executive Order 13653 and the 2016 presidential memorandum, among other things, as seen in figure 2.²⁷

Presidential Budget Requests for Fiscal Years 2017 and 2018

Priorities related to climate change shifted between the past two administrations as reflected in a recent budget request that reduced some climate change funding affecting U.S. foreign assistance.

- **2017 Presidential Budget Request.** The previous administration stated in its fiscal year 2017 budget request that “the challenge of climate change will define the contours of this century more dramatically than any other” and that “it is imperative for the United States to couple action on climate change at home with leadership

²⁵Exec. Order No. 13,677, *Climate-Resilient International Development*, 79 Fed. Reg. 58,231 (Sept. 23, 2014). The executive order did not identify DOD as an agency with direct international development programs and investments.

²⁶Presidential Memorandum on Climate Change and National Security (Sept. 21, 2016).

²⁷Exec. Order No. 13,783, *Promoting Energy Independence and Economic Growth*, 82 Fed. Reg. 16,093 (Mar. 28, 2017).

internationally.”²⁸ The fiscal year 2017 budget request sought \$1.3 billion in discretionary funding to advance the goals of the Global Climate Change Initiative, which was established in 2010 and aimed to promote resilient, low-emission development, and integrate climate change considerations into U.S. foreign assistance.²⁹ The \$1.3 billion in requested funding included \$750 million in U.S. funding for the Green Climate Fund, a multilateral trust fund designed to foster resilient low-emission development in developing countries.³⁰

- **2018 Presidential Budget Request.** The current administration, in its fiscal year 2018 budget request, did not include any funding for the Global Climate Change Initiative.³¹ In addition, the current administration’s budget request stated that it “Eliminate[d] the Global Climate Change Initiative and fulfill[ed] the President’s pledge to

²⁸Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2017* (Feb. 9, 2016).

²⁹The Global Climate Change Initiative was divided into three main programmatic initiatives: (1) Adaptation assistance, (2) Clean Energy assistance, and (3) Sustainable Landscapes assistance. The Global Climate Change Initiative has been funded through programs at the Departments of State and Treasury, and USAID. Funds for these programs have been requested in the President’s budget under the International Affairs Function 150 account for State, Foreign Operations, and Related Programs, according to the Congressional Research Service (CRS). Many Global Climate Change Initiative activities have been funded at agency sub-account levels, with allocations left to the discretion of the agencies, under congressional consultation, reported CRS. Recent budget authority for the Global Climate Change Initiative, according to CRS, was approximately \$945 million in fiscal year 2010, \$819 million in fiscal year 2011, \$858 million in fiscal year 2012, \$841 million in fiscal year 2013, \$834 million in fiscal year 2014, and \$824 million in fiscal year 2015. Department of Treasury officials told us that they have not done any specific work—assessments, policy papers, or programming—on migration due to climate change; thus we did not include Treasury in our review.

³⁰The United States made a multi-year pledge of \$3 billion to the initial resource mobilization of the Green Climate Fund; the first U.S. contribution of \$500 million to the Green Climate Fund was requested in the President’s fiscal year 2016 budget request.

³¹Office of Management and Budget, *Budget of the U.S. Government: A New Foundation for American Greatness, Fiscal Year 2018* (May 23, 2017).

cease payments to United Nations' (UN) climate change programs by eliminating U.S. funding related to the Green Climate Fund. . .”³²

Strategy Documents Affecting State, USAID, and DOD

Some strategies from the current and previous administrations that affect State, USAID, and DOD, among other agencies, reflect a shift in priorities related to climate change. For example, the previous administration cited climate change as a “top strategic risk” in its 2015 National Security Strategy and stated that climate change is an urgent and growing threat to U.S. national security, contributing to increased natural disasters, refugee flows, and conflicts over basic resources like food and water.³³ The current administration does not discuss climate change in its 2017 National Security Strategy.³⁴ Additionally, State and USAID have a Joint Strategic Plan to help the agencies achieve the objectives of the National Security Strategy. The previous State-USAID Joint Strategic Plan included a strategic goal on “promoting the transition to a low-emission, climate-resilient world” that proposed leading international actions to combat climate change.³⁵ The current State-USAID Joint Strategic Plan does not have a climate change goal.³⁶

³²Office of Management and Budget, *America First: A Budget Blueprint to Make America Great Again* (March 16, 2017). While the Consolidated Appropriations Act, 2018, did not include funding for the Green Climate Fund, it did provide no less than \$123.5 million for Sustainable Landscapes programs, one of the initiatives previously under the Global Climate Change Initiative. See Pub. L. No. 115-141 (Mar. 23, 2018). In addition, according to State’s Bureau of International Organization Affairs, State is no longer providing funding for the United Nations Framework Convention on Climate Change and Intergovernmental Panel on Climate Change.

³³The White House, *National Security Strategy* (February 2015).

³⁴The White House, *National Security Strategy* (December 2017).

³⁵State-USAID Joint Strategic Plan FY 2014-2017 (March 2014).

³⁶State-USAID Joint Strategic Plan FY 2018-2022 (February 2018).

State, USAID, and DOD Have Discussed the Potential Effects of Climate Change on Global Migration, but State Does Not Provide Clear Risk Assessment Guidance

State, USAID, and DOD were required by executive orders to assess climate change-related risks to their missions and, for State and USAID, to their strategies, among other things. In response to Executive Order 13653, which has since been revoked, the agencies completed adaptation plans that integrated considerations of climate change into agency operations and overall mission objectives. In response to Executive Order 13677, which has not been revoked, State and USAID developed processes for climate change risk assessments for their country and regional planning documents.³⁷ Although these executive orders did not require a specific assessment of climate change as a driver of migration, all three agencies have discussed the effects of climate change on migration in their adaptation plans and risk assessments. However, State lacks clear guidance on its process for assessing climate change-related risks to its integrated country strategies.

Agencies Discussed the Effects of Climate Change on Migration in Their 2014 Adaptation Plans

State, USAID, and DOD each completed adaptation plans in 2014 that included limited discussions of migration as one potential effect of climate change. Executive Order 13653 directed the agencies to develop or continue to develop, implement, and update comprehensive Agency Adaptation Plans that integrate consideration of climate change into agency operations and overall mission objectives. Each adaptation plan was to include, among other things, a description of how the agency would consider the need to improve climate adaptation and resilience.

- **State.** In its 2014 adaptation plan, State included a brief discussion of climate change as one of multiple factors that potentially will drive migration and impact its mission. State reported that the specific impacts of climate change on the ability of the department to promote peace and stability in regions of vital interest to the United States were unknown. For example, according to the plan, an increase in heavy precipitation events around the world could damage the electric grid and transportation and energy water infrastructure, upon which State depends, making it difficult to maintain operations and diplomatic relations. In its plan, State reported that climate change

³⁷Exec. Order No. 13,677, *Climate-Resilient International Development*, 79 Fed. Reg. 58,231 (Sept. 23, 2014). Executive Order 13677 required State, USAID, and other U.S. government agencies with direct international development programs and investments to incorporate climate-resilience considerations into decision-making by assessing climate-related risks to and vulnerabilities in existing strategies, and adjusting relevant strategies, as appropriate. The executive order did not list DOD as a relevant agency.

impacts may threaten international peace, civil stability, and economic growth through aggravating existing problems related to poverty and environmental degradation. Further, environmental and poverty-related issues and regional instability could stress relationships with some foreign governments. However, the plan noted that specific impacts of climate change on conflict, migration, terrorism, and complex disasters were still unknown.

- **USAID.** In its 2014 adaptation plan, USAID included a brief discussion of migration as one potential effect of climate change that could also impact security.³⁸ USAID stated that the impact of climate change on its programs and operations, if left unaddressed, could compromise the agency's ability to achieve its mission. Further, USAID's plan referred to increased migration as a potential risk of climate change. Flooding and other extreme climate events can result in increased migration, among other impacts, that could affect existing and planned USAID programming. In particular, programs in areas like agriculture and food security, global health, water and sanitation, infrastructure, and disaster readiness and humanitarian response are vulnerable to climate change, according to USAID. In the infrastructure area, climate change may necessitate new protective measures for coastal homes and infrastructure, and in some cases even mass evacuations or permanent migration. USAID stated that climate change could further reduce or alter the distribution of already limited resources like food and water, or force temporary or permanent migration of communities. According to the plan, in areas with high risk factors for conflict, climate change stresses can aggravate tensions and contribute to conflict.
- **DOD.** In its 2014 adaptation roadmap, DOD included a brief discussion of migration as one of multiple potential effects of climate change that could impact national security. DOD referred to climate change as a threat multiplier that can aggravate other risks around the world, with migration being one effect that could increase requests for DOD to provide assistance.³⁹ The roadmap stated that as climate change affects the availability of food and water, human migration, and competition for natural resources, the department's unique

³⁸USAID rescinded its June 2014 Climate Change Adaptation Plan on May 11, 2017.

³⁹DOD developed the 2014 *Roadmap* to fulfill requirements of a Climate Change Adaptation Plan found in Executive Orders 13514 on *Federal Leadership in Environmental, Energy, and Economic Performance* and 13653 on *Preparing the U.S. for the Impacts of Climate Change*.

capability to provide logistical, material, and security assistance on a massive scale or in rapid fashion may be called upon with increasing frequency. Furthermore, DOD stated that the impacts of climate change may cause instability in other countries by, among other things, impairing access to food and water, damaging infrastructure, uprooting and displacing large numbers of people, and compelling mass migration. These developments, according to the department, could undermine already fragile governments that are unable to respond effectively, or challenge currently stable governments, as well as increase competition and tension between countries vying for limited resources.

Few of the State and USAID Risk Assessments We Reviewed Identified the Nexus of Climate Change and Migration as a Risk

In response to Executive Order 13677, State and USAID developed processes for climate change risk assessments for their country and regional planning documents.⁴⁰ Though these assessments are not specific to migration, a few of the assessments identified the nexus of climate change and migration.

- **State.** State required climate change risk assessments for all new integrated country strategies drafted in 2016 or later.⁴¹ We reviewed 10 integrated country strategies from the two regions that were the first to implement the climate change risk assessment requirement—Africa, and East Asia and the Pacific. All 10 of the strategies included climate change risk assessments, one of which—Cambodia—

⁴⁰Exec. Order No. 13,677, *Climate-Resilient International Development*, 79 Fed. Reg. 58,231 (Sept. 23, 2014). Executive Order 13677 required State, USAID, and other U.S. government agencies with direct international development programs and investments to incorporate climate-resilience considerations into decision-making by assessing climate-related risks to and vulnerabilities in existing strategies, and adjusting relevant strategies, as appropriate. The executive order did not list DOD as a relevant agency.

⁴¹State's 2016 integrated country strategy guidance stated that all missions should perform a climate change risk assessment, and if one or more goals and objectives are determined medium-high risk, missions must document the climate-risk screening process in an annex. Those only identifying low risks may include a summary statement explaining how the mission came to this determination. An integrated country strategy is a multi-year plan that articulates the U.S. government's priorities in a given country. The integrated country strategy sets mission goals and objectives through a coordinated and collaborative planning effort among State, USAID, and other U.S. government agencies with programming in country. The primary audiences for the integrated country strategy are the mission, bureaus, and interagency partners. As of February 2018, missions will complete an integrated country strategy every 4 years. Current integrated country strategies were updated in February 2018 through 2022.

identified migration as a risk for the country.⁴² The Cambodia strategy states that internal migration due to climate change hinders access to health care and the prevention of infectious diseases like malaria. We also reviewed 10 strategies from State's functional and regional bureaus for assessments of climate-related risks, including 3 functional bureau strategies (State/PRM, State/OES, and State's Bureau of International Organization Affairs) and 7 regional bureau strategies. All of the functional bureau strategies we reviewed identified climate change as a risk and State/PRM cited the impact of climate change on migration. Of the regional bureau strategies we reviewed, we found that one, the Bureau for East Asian and Pacific Affairs, identified climate change as a driver of migration as a challenge or risk in its region. For example, the strategy states that climate change is becoming increasingly disruptive, potentially increasing migration due to rising sea levels. None of the other six regional bureau strategies we reviewed identified the nexus of climate change and migration as a risk or challenge. However, five regional bureaus identified climate change as a risk or challenge and one identified migration as a risk or challenge.

- **USAID.** USAID also requires the integration of climate risk management into all country or regional development cooperation strategies drafted since October 1, 2015.⁴³ Missions must document in a climate change appendix to the strategy any climate risks they identified and how they considered climate change in their strategy. As of August 2018, USAID had completed five country or regional development cooperation strategy updates initiated since October 1, 2015—Uganda, Tunisia, East Africa, Sri Lanka, and Zimbabwe—and

⁴²We selected 10 strategies out of 69 for review by using the following two criteria: (1) they were located in either State's Africa or East Asia and the Pacific bureaus, which were the first two bureaus to implement climate risk screenings; and (2) they were identified by USAID and DOD as climate change priorities or experiencing displacement due to natural disasters. The 10 strategies selected were Cambodia, Ethiopia, Indonesia, Kenya, Mali, Philippines, Senegal, Timor-Leste, Uganda, and Vietnam.

⁴³According to USAID, climate risk management is the process of assessing, addressing, and adaptively managing climate risks. Climate risk management is required as part of the development of all new country or regional USAID strategies. Country Development Cooperation Strategies or Regional Development Cooperation Strategies define a mission's goal and objectives for an agreed-upon period of time, based on a given level of resources, and support State-USAID Joint Regional Strategies, Integrated Country Strategies, and the State-USAID Joint Strategic Plan. USAID's strategies are developed on a rolling basis, and generally span 5 years.

all five included the required appendix.⁴⁴ Of the five updated strategies, three—Uganda, Tunisia, and East Africa—discuss the indirect effect of climate change on migration, among other issues. For example, Uganda’s 2016-2021 country strategy states that increased frequency and duration of droughts is likely to be the most significant climate-related change in Uganda. The strategy also notes that droughts have affected, and will continue to affect, water resources, hydroelectricity production, and agriculture, among other sectors. As agriculture, forestry, and fisheries decline in Uganda, the strategy asserts that people will migrate to urban areas, leading to the formation of slums. We also reviewed USAID’s nine regional development cooperation strategies, one of which—East Africa—had been updated since the requirement to include climate risk management. Of the other eight strategies that have yet to be updated, seven identified climate change as a challenge or risk and three identified climate change as a driver of migration as a challenge or risk. For example, the Southern Africa regional development cooperation strategy states that water scarcity, natural disasters, and other climate change related events will most likely increase migration throughout the region. Additionally, the Asia regional development cooperation strategy discusses the risks of climate change in urban areas. In Asia, the number of migrants seeking economic opportunities in urban centers is likely to increase. According to the strategy, migrants are moving into hazard-prone areas located along coastlines, flood plains, and other low-lying areas in many Asian primary and secondary cities—areas that experts predict will experience more frequent and intense storm surges, floods, and coastal erosion as a result of climate change.

State Lacks Clear Guidance on its Process for Assessing Climate Change-Related Risks

The requirement in Executive Order 13677 to assess climate change-related risks to agency strategies remains unchanged; however, State now lacks clear guidance on its process for assessing climate change-related risks to its integrated country strategies.⁴⁵ Specifically, State’s 2016 guidance for developing integrated country strategies stated that all missions should assess the risk of climate change on their strategies’

⁴⁴There are 63 country and regional strategies. According to USAID officials, all new strategies initiated as of October 1, 2015, include a climate risk screening annex, as required. USAID officials stated that, as of July 2018, eight other missions are working on developing strategies that comply with the climate risk requirements: Afghanistan, El Salvador, Ethiopia, India, Liberia, Pakistan, Philippines, and the Ukraine.

⁴⁵Exec. Order No. 13,677, 79 Fed. Reg. 58,231 (Sept. 23, 2014).

goals and objectives⁴⁶ and included reference to the climate risk screening tool—a method that missions could use to assess climate change risks.⁴⁷ State issued new guidance to its missions in 2018, but this guidance does not include information on the process for assessing climate change-related risks to agency strategies. According to State officials, the 2018 guidance for integrated country strategies does not reference climate change risk assessments because, in September 2017, State decided that the strategies should not single out climate change risks in a separate appendix. State officials said this decision resulted, in part, from the new administration’s shift in priorities on climate change. Officials also said that this decision reflects a new approach to risk management by State and that the missions could choose to include climate change and other potential risks in the general risk discussion section of their strategies. Officials from State’s Office of U.S. Foreign Assistance Resources said that it is now up to each mission to decide whether a strategic objective may have a climate challenge. However, those missions that choose to include an assessment of climate change risks are not provided guidance on the process for doing so and there is no reference to the climate risk screening tool—or to climate change at all—in the 2018 guidance.

Executive Order 13677 directed State to incorporate climate-resilience considerations into decision making by assessing climate-related risks to agency strategies, among other things. Subsequently, a State cable from September 2016 further explained that State would implement the executive order’s requirement by screening for climate risks as part of the process for drafting all new integrated country strategies. Additionally, the *Standards for Internal Control in the Federal Government* state that documentation is a necessary part of an effective internal control system.⁴⁸ If management determines that a principle is not relevant, management must support that determination with documentation that

⁴⁶In 2016, State required missions to perform a climate change risk assessment, and if they determined that one or more goals and objectives had a medium or high risk from climate change, the missions had to document this climate risk screening process in an annex.

⁴⁷State’s screening tool outlines four steps for climate-risk screening. These steps are: (1) identify priority sectors and regions; (2) assess potential climate change impacts and risks; (3) adjust the strategy, if needed; and (4) document the climate risk screening process, if needed.

⁴⁸GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

includes the rationale of how, in the absence of that principle, the associated component could be designed, implemented, and operated effectively.

Because State lacks clear guidance on its process for assessing climate change-related risks to its integrated country strategies, it is less likely that the current round of strategies will include the assessment of climate-related risks. It is also possible that those missions that choose to conduct climate change risk assessments will not do so in a consistent manner. Such assessments might identify climate change as a driver of migration, as at least one previous assessment did under the 2016 guidance. Thus, without clear guidance, missions may not examine climate change as a risk to their strategic objectives and could miss opportunities to improve the climate resilience of foreign assistance activities.

State, USAID, and DOD Have Been Involved in Various Climate Change Related Activities, but None Were Focused Specifically on Migration, and Their Participation Has Declined

For fiscal years 2014 through 2017, State, USAID, and DOD had some activities that could potentially address climate change as a driver of migration, although none of these activities specifically focused on the issue. For example, USAID has climate change adaptation activities, but to date migration has not been a focus of this programming. With the shift in priorities related to climate change in fiscal year 2017, agencies have reduced some of these activities.

State Activities

State's offices that are focused on the issues of climate change (State/OES) and migration (State/PRM) have participated in multilateral activities related to climate change as a driver of migration and funded adaptation and other activities related to the issue. State officials said that the agency does not, however, have any activities that specifically address migration due to climate change or environmental factors.

Multilateral Efforts

State has participated in multilateral activities related to climate change and migration. With the shift in priorities related to climate change in fiscal

year 2017, the United States has disengaged from some of these multilateral activities (see table 1).

Table 1: Department of State (State) Participation in Multilateral Activities Related to Climate Change and Migration

Multilateral Activity	Description of Multilateral Activity and State Participation
Friends of the Nansen Initiative	The Friends of the Nansen Initiative was a group of countries and organizations associated with the Nansen Initiative. The Nansen Initiative aimed to develop an agenda for protecting people displaced across borders by disasters and the effects of climate change. The United States joined the group of friends in 2014 to engage on issues related to population movements linked to climate change. The United States was not a member of the initiative itself.
Platform on Disaster Displacement	The Platform on Disaster Displacement succeeded the Friends of the Nansen Initiative in May 2016. The platform addresses the protection needs of people displaced across borders in the context of disasters and climate change. As of September 2018, the United States is not participating in the Platform on Disaster Displacement.
Paris Agreement	The Paris Agreement aims to strengthen the global response to the threat of climate change. In a decision accompanying the Paris Agreement, the parties to the UN Framework Convention on Climate Change ^a requested that the Executive Committee of the Warsaw International Mechanism on Loss and Damage establish a task force on human displacement related to the adverse impacts of climate change. In August 2017, the United States formally announced its intent to withdraw from the Paris Agreement. ^b
Warsaw International Mechanism for Loss and Damage	The Warsaw International Mechanism for Loss and Damage was created to address loss and damage associated with impacts of climate change in vulnerable developing countries. The Warsaw International Mechanism for Loss and Damage’s Executive Committee guides the implementation of the mechanism. The Executive Committee’s Task Force for Displacement is developing recommendations for approaches to address displacement related to the adverse impacts of climate change. The United States sits on the Warsaw International Mechanism for Loss and Damage’s Executive Committee but does not participate in the Task Force.
The UN Framework Convention on Climate Change—Cancun Adaptation Framework	The Cancun Adaptation Framework provides broad guidance to strengthen climate-related adaptation, including disaster risk reduction strategies, among other things. The United States negotiates on issues created by the Cancun Adaptation Framework, including but not limited to: National Adaptation Plans, Loss and Damage, and the Adaptation Committee.
The UN Framework Convention on Climate Change—Nairobi Work Program	The Nairobi Work Program seeks to improve the understanding and assessment of the impacts of climate change and strengthen the capacity of countries to make informed decisions on practical adaptation actions. The United States participates in Nairobi Work Program activities.
The UN Global Compact for Migration	The UN Global Compact for Migration is expected to be the first intergovernmental agreement to cover all dimensions of international migration, including the humanitarian, developmental, and human rights aspects. Among other issues, the draft compact promotes initiatives related to climate change and migration, requests investment in programs that minimize climate change as a driver of migration, and calls for the strengthening of information on migration including the adverse effects of climate change. In December 2017, the United States announced its withdrawal from negotiations for the UN Global Compact for Migration.

Source: GAO analysis of Department of State and multilateral activity information. | GAO-19-166

^aThe UN Framework Convention on Climate Change was adopted in 1992. Currently, the United States is one of 197 parties to the convention. The convention’s objective is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (man-made) interference with the climate system.

Funding Efforts

^bIn June 2017, the President announced his intention to withdraw the United States from the Paris Agreement. Under the agreement, the earliest effective date of withdrawal for the United States is in 2020.

In addition to State's participation in the multilateral activities described in table 2, State has provided funding for activities related to climate change and capacity building that address natural disasters. These activities may involve efforts potentially related to migration. For example, according to State:

- State provided about \$2 million per year, between fiscal years 2014 and 2016, to the Intergovernmental Panel on Climate Change,⁴⁹ which analyzed the impacts of climate change on migration in its most recent assessment report.⁵⁰
- State/PRM provided about \$4 million, between fiscal years 2014 through 2018, for IOM's Migrants in Countries in Crisis Initiative, which provides guidelines to protect migrants in countries experiencing conflict or natural disasters. IOM provides training to countries on these guidelines. State/PRM officials said that this initiative is not specifically related to climate change and does not focus on specific types of disasters but does mention sudden-onset disasters. Officials also said that IOM tries to promote a climate change perspective in its trainings.
- State/OES provided about \$78 million in adaptation funding from the Global Climate Change Initiative to eight projects during fiscal years 2014 through 2017.⁵¹ (See appendix III for a description of all eight projects.) State/OES officials said that these projects help countries prepare for the impacts of climate change, potentially reducing the

⁴⁹According to State's Bureau of International Organization Affairs, as of fiscal year 2017, State is no longer providing funding for the Intergovernmental Panel on Climate Change.

⁵⁰Adger, W.N., J.M. Pulhin, J. Barnett, G.D. Dabelko, G.K. Hovelsrud, M. Levy, Ú. Oswald Spring, and C.H. Vogel, *Human Security. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. (Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA: 2014).

⁵¹The Global Climate Change Initiative was established in 2010 to promote resilient, low-emission development, and integrate climate change considerations into U.S. foreign assistance. The initiative was divided into three main programmatic initiatives: (1) Adaptation assistance, (2) Clean Energy assistance, and (3) Sustainable Landscapes assistance.

pressure to migrate. However, to these officials' knowledge, none of these projects directly supported activities related to migration. For example, State/OES provided a \$4 million grant to the National Adaptation Plans Global Network. This network focuses on increasing the capacity of governments to identify and assess climate risks, integrate these risks in planning, develop a pipeline of projects to address these risks, identify and secure funding for projects, and track progress toward resilience targets. Adaptation activities occurred in over 35 countries.

With the shift in priorities related to climate change in fiscal year 2017, State discontinued some of these efforts. For example, funding for the Global Climate Change Initiative was not included in the President's budget request for fiscal year 2018. State/OES officials said that the agency does not plan to fund additional adaptation activities and has not requested additional funding for the activities. According to a State official, PRM had been in discussion with IOM to develop a project proposal that would have assisted the governments of Small Island Developing States in adapting their migration policies to account for challenges and opportunities associated with environmental degradation, ecosystem loss, climate change impacts, and natural disasters. State/PRM stopped further development of the proposal following the change in administrations. Additionally, according to a State official, the department made some efforts at the end of the previous administration to develop a formal position on the topic of climate change as a driver of migration. For example, State drafted an internal document to help clarify its role in responding to the humanitarian aspects of sudden-onset and slow-onset climate events. This initial work stopped under the current administration.

USAID Activities

USAID officials said that, with respect to the agency's climate-related programming, its climate change adaptation programming was the most likely to include activities related to migration or displacement, although a broad swath of USAID development programming has the potential to build host country resilience. Officials stated that, to date, migration has not been a primary motivation for the agency's climate-related or disaster assistance programming. However, officials said that, in a humanitarian crisis or under some economic conditions, development programming can reduce displacement or the pressure to migrate—such as by fostering greater resilience to drought or other adverse conditions—and that this is also true of climate-related programming. USAID also provides humanitarian assistance in response to natural disasters that displace

people. Officials said that USAID recognizes the links between displacement and natural disasters, but that the agency does not have specific programs linking disaster assistance, migration, and climate change.

Adaptation Efforts

USAID identified about 250 activities that received adaptation funding from the Global Climate Change Initiative during fiscal years 2014 through 2016.⁵² Our analysis of the descriptions of these activities determined that none directly mentioned any efforts specifically related to migration.⁵³ Officials emphasized that the connection between climate change and migration tends to be indirect and shaped by other more immediate factors. USAID's data on activities that received adaptation funding identified 38 beneficiary countries, as well as activities described generally as implemented at the regional or global level.⁵⁴ For activities where USAID's data identified a specific region, most activities were located in Africa followed by Asia and Latin America and the Caribbean.⁵⁵

Examples of the types of activities that received adaptation funding from the Global Climate Change Initiative during fiscal years 2014 through 2016 include:

- The Mali Climate Change Adaptation Activity, which aims to build resilience to current climate variability and increase resilience to

⁵²Beginning in fiscal year 2017, State and USAID no longer allocated dedicated funding to climate change adaptation, as they had under the Global Climate Change Initiative.

⁵³We conducted an automated review of the activity description fields provided by USAID for terms related to migration, see appendix I for more information. Agency officials said that USAID records funding and results data according to the original purposes of the funding up until the date of obligation. According to officials, USAID does not have a way of retrieving from its data systems whether a project includes activities related to migration or displacement (or any other topic), unless the topics were part of the original intent or purpose of the funding. Furthermore, officials indicated that there are no project or activity documents that would aggregate funding levels and funding source, scope of work, and assessment of impact specifically on migration or displacement (or any other topic), unless the topics were part of the original intent or purpose of the funding.

⁵⁴The beneficiary country field was empty—either not specifying a specific country or indicating that the activity was a regional or global activity—for 55 of the activities in USAID's data.

⁵⁵USAID's data had specific region information for 160 of the 254 activities in the data. Of those activities where a specific region was identified, 76 activities were located in Africa (about 48 percent), 48 were located in Asia (about 30 percent), and 36 were located in Latin America and the Caribbean (about 23 percent).

longer-term climate change effects. This activity is also working to strengthen the capacity of Mali's meteorological agency to provide improved climate information as well as to incorporate climate considerations into local-level planning. The total estimated cost is about \$13 million over 5 years.⁵⁶

- The activity for Climate-Resilient Ecosystems and Livelihoods, which ended in September 2018, aimed to increase Bangladesh's resilience to natural hazards by working with community-based organizations, government ministries, and technical agencies. This activity provided technical assistance to the Government of Bangladesh and local communities to improve ecosystem conservation and resilience capacity. The total estimated cost was about \$33 million in funding over 6 years.
- The activity for Pastoralist Areas Resilience Improvement through Market Expansion, which aims to support pastoralists in Ethiopia via expansion of markets and long-term behavior change (see fig. 3). USAID officials cited this activity as an example of adaptation efforts that indirectly address the issue of climate change as a driver of migration. The activity has three interrelated objectives: increasing household incomes, enhancing resilience, and bolstering adaptive capacity to climate change among pastoral people in Ethiopia. An evaluation of the activity found that migration is a coping strategy for dealing with climate shocks, although participants said that drought is becoming more frequent, placing a severe strain on traditional coping mechanisms, such as migration and selling cattle, and that permanent migration is not a preferred strategy. The total estimated cost is about \$60 million in funding over 6 years.

⁵⁶According to USAID, total estimated cost may not be fully funded depending on availability of funds, the final amount negotiated with the implementer, changes in country needs or the Country or Regional Development Cooperation Strategy, and or, other issues. Further, USAID said that activities often address multiple development objectives; therefore, not all of the total estimated cost can be attributed to climate adaptation funding.

Figure 3: Ethiopia Pastoralist Areas Resilience Improvement through Market Expansion Activity is Relevant to the Issue of Climate Change as a Driver of Migration



Source: Mercy Corps. | GAO-19-166

With the shift in priorities related to climate change, funding for USAID's climate change adaptation activities has decreased. Missions may continue to fund their adaptation activities with discretionary funds or other earmarked, sector funding, provided the activities further the funding source's objective, according to USAID. For example, in some cases, missions are using Water sector funding to continue some of their adaptation work. USAID also said that among the agency's goals are to increase the resilience of USAID partner countries to recurrent crises, including climate variability and change.

Humanitarian Aid and Disaster Assistance Efforts

In addition to USAID's climate change adaptation programming, USAID/OFDA and USAID/FFP provide emergency humanitarian assistance to people affected by sudden-onset disasters—such as hurricanes and floods—and slow-onset and extended disasters, including droughts and conflicts. Some of this assistance helps people who have been displaced by disaster. USAID officials stated that although disasters cause mainly temporary displacement, the relationship among humanitarian assistance, climate change, and migration is very complex and depends on both climatic and non-climatic factors. USAID/OFDA responded to 267 disasters from fiscal year 2014 through June 2018, according to agency data. For example, USAID/OFDA responded to the

effects of Hurricane Matthew in Haiti in October 2016, as seen in figure 4, including helping temporarily displaced people.

Figure 4: USAID Aerial View of Hurricane Matthew Damage in Haiti, October 2016, Which Temporarily Displaced People



Source: Mike Lambright, United States Agency for International Development (USAID)/Office of U.S. Foreign Disaster Assistance (OFDA). | GAO-19-166

DOD Activities

DOD assists in the U.S. government response to overseas disasters, including helping people displaced by such disasters, regardless of the cause of the disaster. These efforts are not specific to climate change as a driver of migration. For example, officials from DOD's geographic combatant commands said that, to the extent they address climate change, migration is not a focus of those efforts and they view migration as caused by security and economic issues.

Between fiscal years 2014 and 2018, Congress has appropriated to DOD between \$103 and \$130 million per year for Overseas Humanitarian, Disaster, and Civic Aid. Officials said that the geographic combatant commands use most of this funding for steady state humanitarian assistance related to health, education, basic infrastructure, and disaster preparedness with a smaller amount set aside for immediate disaster assistance although that varies based on emergency requirements. DOD officials said that they have not seen any changes to this funding or associated activities with the change of administrations in fiscal year 2017. DOD officials we spoke with also emphasized that USAID/OFDA is the lead agency for the U.S. government's response to disasters overseas. USAID/OFDA formally requested DOD support on about 10 percent of the foreign disaster assistance provided by USAID/OFDA, according to USAID data for fiscal year 2014 through June 2018 and DOD officials. DOD assistance is typically provided for the largest, most complex disasters, according to agency officials.

According to a July 2015 assessment conducted by the geographic combatant commands, while their activities vary, each command works with partner nations to increase their abilities to reduce the risks and effects from environmental impacts and climate-related events, including severe weather and other hazards.⁵⁷ For example, in the report, U.S. Southern Command stated that it had requested funding to pre-position assets for when a severe storm threatens Haiti to be able to respond immediately to a potential disaster. U.S. Southern Command officials said that they work with partner nations to encourage residents experiencing extreme weather to remain where they are because it is easier to provide help to people who stay in one place. Officials from U.S. Southern Command and U.S. Africa Command also said that the major factors driving migration in their regions are security and economic issues.

Interagency Forums

State, USAID, and DOD have participated in interagency forums regarding climate change, which may have addressed its effects on migration. With changes to priorities regarding climate change in fiscal year 2017, these forums have been disbanded or are not meeting.

- **The Council on Climate Preparedness and Resilience.** The Council on Climate Preparedness and Resilience, of which State,

⁵⁷Department of Defense, *National Security Implications of Climate-Related Risks and a Changing Climate* (Washington, D.C.: July 2015).

USAID, and DOD were members, was established to facilitate the integration of climate science in policies and planning of government agencies, including by promoting the development of climate change related information, data, and tools, among other things. Additionally, the council was to develop, recommend, and coordinate interagency efforts on priority federal government actions related to climate preparedness and resilience. According to State officials, the council began working with the National Security Council and other agencies to facilitate greater interagency cooperation on adaptation. In addition, a task force on the council was discussing the federal role in addressing displacement related to climate change. The council was disbanded when Executive Order 13783 revoked Executive Order 13653, which had established the council.⁵⁸

- **The Working Group on Climate-Resilient International Development.** The Working Group on Climate-Resilient International Development, of which State and USAID were members, was established by Executive Order 13677 and placed under the Council on Climate Preparedness and Resilience.⁵⁹ The working group's mission includes developing guidelines for integrating considerations of climate-change risks and climate resilience into agency strategies, plans, programs, projects, investments, and related funding decisions, among other things. Additionally, the working group was tasked with facilitating the exchange of knowledge and lessons learned in assessing climate risks to agency strategies, among other things. USAID officials said that the working group had not discussed climate change as a driver of migration. While the working group has not been formally disbanded, it has not met since at least November 2017 according to USAID.
- **The Climate and National Security Working Group.** The Climate and National Security Working Group, of which State, USAID, and DOD were members, was established by the 2016 presidential memorandum.⁶⁰ The chairs of the working group were to coordinate the development of a strategic approach to identify, assess, and share information on current and projected climate-related impacts on national security interests and to inform the development of national security doctrine, policies, and plans, among other things. According

⁵⁸Exec. Order No. 13,783, 82 Fed. Reg. 16,093 (Mar. 28, 2017).

⁵⁹Exec. Order No. 13,677, 79 Fed. Reg. 58,231 (Sept. 23, 2014).

⁶⁰Presidential Memorandum, Climate Change and National Security (Sept. 21, 2016).

to the memorandum, the working group was to provide a venue for enhancing the understanding of the links between climate change-related impacts and national security interests and for discussing opportunities for climate mitigation and adaptation activities to address national security issues. This working group was disbanded when Executive Order 13783 revoked the 2016 presidential memorandum, which had established the working group.

Conclusions

State, USAID, and DOD assessments and activities have not focused specifically on the nexus of climate change and migration. State did identify migration as a risk of climate change in at least one of its climate change risk assessments for the department's country strategies. However, State now lacks clear guidance on its process for assessing climate change-related risks to its integrated country strategies. State's current guidance for these country strategies no longer mentions a climate change risk assessment and does not provide missions with information about the climate risk screening tool that can be used to conduct such an assessment. As such, missions are less likely to examine climate change as a risk to their strategic objectives, or to do so in a consistent manner, and thus may not have the information they would need to identify migration as a risk of climate change. By clearly documenting and providing guidance on how to assess the risk of climate change, State would ensure that the department examines the potential risks of climate change on its foreign assistance activities.

Recommendation for Executive Action

We are making the following recommendation to State:

The Secretary of State should ensure that the Director of the Office of U.S. Foreign Assistance Resources provides missions with guidance that clearly documents the department's process for climate change risk assessments for integrated country strategies. (Recommendation 1)

Agency Comments

We provided a draft of this product to State, USAID, and DOD for review and comment. State provided written comments, which we have reprinted in appendix IV. In its comments, State did not oppose the recommendation and noted that the agency will update its integrated country strategy guidance by June 30, 2019 to inform missions that they have the option to include an annex on climate resilience, as well as other topics. However, State also indicated that the agency will begin working with stakeholders to consider whether to recommend that the Secretary of

State ask the President to rescind Executive Order 13677: Climate-Resilient International Development.


USAID also provided written comments, which we have reprinted in appendix V. In its letter, USAID provided some additional information about its programs and its proposed transformation effort. USAID and DOD provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional requesters, Secretary of State, the Administrator of USAID, and the Secretary of Defense. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact David Gootnick at (202) 512-3149 or gootnickd@gao.gov, or Brian J. Lepore at (202) 512-4523 or leporeb@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix VI.



David Gootnick
Director, International Affairs and Trade



Brian J. Lepore
Director, Defense Capabilities and Management

List of Requesters

The Honorable Sheldon Whitehouse
United States Senate

The Honorable Dianne Feinstein
United States Senate

The Honorable Elizabeth Warren
United States Senate

The Honorable Edward J. Markey
United States Senate

The Honorable Jeffrey A. Merkley
United States Senate

Appendix I: Objectives, Scope, and Methodology

This report (1) describes executive branch actions related to climate change and migration from fiscal years 2014 through 2018; (2) examines the extent to which the Department of State (State), the U.S. Agency for International Development (USAID), and the Department of Defense (DOD) have discussed the potential effects of climate change on migration in their plans and risk assessments; and (3) describes State, USAID, and DOD activities, if any, that are related to climate change and global migration. We chose fiscal years 2014 through 2018 as our time frame based on our review of recent executive orders related to climate change. We selected State, USAID, and DOD because the agencies' missions of diplomacy, development, and defense provide the foundation for promoting and protecting U.S. interests abroad.

To describe executive branch actions related to climate change and migration from fiscal years 2014 through 2018, we reviewed documents that reflect priorities of the previous and current administrations. Specifically, we reviewed budget requests and enacted appropriations between fiscal years 2014 through 2018 for funding priorities related to climate change and U.S. foreign assistance. In addition, we reviewed executive actions and executive branch strategies that applied to State, USAID, and DOD between fiscal years 2014 through 2018 for executive and national security priorities related to climate change. For example, we reviewed the current and previous national security strategies.

To examine the extent to which State, USAID, and DOD have discussed the potential effects of climate change on migration in their plans and risk assessments, we reviewed documents completed since fiscal year 2014 such as Agency Adaptation Plans, previously required by Executive Order 13653; country and regional strategies; and policy guidance. We also met with officials from these agencies to discuss these assessments. We reviewed State and USAID country and regional strategies that were required by Executive Order 13677 to be assessed for climate risk.¹ For State, we chose integrated country strategies from 10 missions by selecting the countries that fit the following two criteria: (1) they were located in either State's Africa or East Asia and the Pacific bureaus, which were the first two bureaus to implement climate risk assessments; and (2) they were identified by USAID and DOD as climate change priorities or experiencing displacement due to natural disasters. To obtain a broader perspective, we also reviewed three functional bureau

¹Exec. Order No. 13,677, 79 Fed. Reg. 58,231 (Sept. 23, 2014).

strategies and seven regional bureau strategies. For USAID, we examined the five country and regional strategies that were required to include a climate risk assessment at the time of our review: Uganda, Tunisia, East Africa, Sri Lanka, and Zimbabwe. We also reviewed all nine USAID regional strategies. For both State and USAID, we reviewed the selected strategies by searching for information related to migration and climate change. To determine whether State clearly documents the department's current climate risk assessment process for integrated country strategies, we compared State's 2018 guidance for developing integrated country strategies with standards related to documentation in *Standards for Internal Control in the Federal Government* and previous State guidance issued in 2016, which was created in response to Executive Order 13677's requirements to assess climate change risks to strategies, among other things.²

To describe State, USAID, and DOD activities, if any, that are related to climate change and global migration, we requested that agencies identify and provide information on efforts that were active between fiscal years 2014 and 2017.

- State officials said that the agency received adaptation funding from the Global Climate Change Initiative during this period so we requested a list of projects from State's Bureau of Oceans and International Environmental and Scientific Affairs (State/OES). State/OES provided all adaptation projects funded with State/OES funds in fiscal year 2014 or later. We reviewed the summaries of those eight projects for discussion of migration. Because no State adaptation projects specifically mentioned migration, for the purposes of this report we chose illustrative examples to provide context for the types of projects the agency has funded. State/OES and the Bureau for Population, Refugees, and Migration also discussed international initiatives in which they have participated that have activities relevant to climate change as a driver of migration.
- USAID officials from the Bureau for Economic Growth, Education, and Environment identified activities that received adaptation funding from the Global Climate Change Initiative as the most likely to be relevant

²GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

to these issues.³ The agency then provided us with data for about 250 activities from its annual operational plans for fiscal years 2014 through 2016, the 3 years during the period we reviewed in which it received adaptation funding. USAID identified these activities based on whether the agency had tagged them in its plans as having an “adaptation key issue.” USAID excluded projects that had planned attributions to the adaptation key issue of less than \$250,000 in a given fiscal year, as well as certain other activities such as those that focused on project support. We then conducted an automated review of the activity description fields provided by USAID for terms related to migration and other descriptive information such as locations of activities. Because no USAID adaptation activities specifically mentioned migration, for the purposes of this report we chose illustrative examples to provide context for the types of activities the agency has funded.

- DOD officials we met with did not identify any specific activities related to climate change as a driver of migration. DOD officials from the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict and the geographic combatant commands⁴ generally discussed DOD activities related to humanitarian assistance and disaster response as most relevant to our inquiry. Because DOD works in coordination with USAID’s Office of U.S. Foreign Disaster Assistance on disaster assistance we also reviewed USAID data on its disaster response activities during this period.

We determined that the USAID and State adaptation project data and USAID disaster assistance data were sufficiently reliable for the purposes of describing these efforts.

We also obtained information on the effects of any changes in priorities related to climate change on these agency activities, as well as on interagency coordination. We reviewed relevant presidential budget requests and executive actions. In addition, we met with officials from

³The Global Climate Change Initiative was established in 2010 to promote resilient, low-emission development, and integrate climate change considerations into U.S. foreign assistance. The initiative was divided into three main programmatic initiatives: (1) Adaptation assistance, (2) Clean Energy assistance, and (3) Sustainable Landscapes assistance.

⁴DOD’s geographic commands include: U.S. Africa Command, U.S. Central Command, U.S. European Command, U.S. Northern Command, U.S. Indo-Pacific Command, and U.S. Southern Command.

State, USAID, and DOD to obtain information on whether changes in government priorities related to climate change affected their activities.

We conducted this performance audit from October 2017 to January 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Regional Focus on Climate Change as a Driver of Global Migration

This appendix provides a review by region of observed and projected climate change effects, migration trends, and challenges in stability and security. Multiple sources we used for this overview make a connection between climate change and such events as rising sea levels, higher temperatures, and an increase in the number and severity of extreme weather events.¹ The following regions are discussed: Asia, South America, the Arctic, Sub-Saharan Africa, the Middle East and North Africa, Oceania, and Central America and the Caribbean. We have provided an overview for each region and a focus on one country or territory in the region.

To provide this overview, we reviewed information from a number of sources.² First, we reviewed reports from international organizations focused specifically on climate change or migration: the Intergovernmental Panel on Climate Change (IPCC);³ the United Nations Environment Programme (UNEP); the International Organization for Migration (IOM); the United Nations High Commissioner for Refugees (UNHCR); and the African, Caribbean, and Pacific States (ACP) Observatory on Migration.⁴ Second, we reviewed relevant reports from

¹See previous GAO work related to the uncertainties in projecting the effects of climate change, GAO, *Climate Information: A National System Could Help Federal, State, Local, and Private Sector Decision Makers Use Climate Information*, [GAO-16-37](#) (Washington, D.C.: November 23, 2015). According to a 2012 National Research Council report on climate models, the fundamental science of greenhouse gas-induced climate change is simple and compelling. However, genuine and important uncertainties remain, such as how clouds affect the climate system, and these uncertainties need to be considered in developing scientifically based strategies for societal response to climate change—especially those related to “downscaled” climate information. For more information, see National Research Council, *A National Strategy for Advancing Climate Modeling* (Washington, D.C.: 2012).

²For domestic climate science information, GAO relies on the National Academies of Science, Engineering, and Medicine and the U.S. Global Change Research Program. According to these sources, limiting the federal government's fiscal exposure to climate change risks will be challenging no matter the outcome of efforts to reduce emissions, in part because greenhouse gases already in the atmosphere will continue altering the climate system for many decades.

³The IPCC is the UN body for assessing the science related to climate change. We reviewed information from IPCC's Fifth Assessment Report (AR5), which is the organization's most comprehensive assessment of scientific knowledge on climate change since 2007. The report was released in four parts between September 2013 and November 2014. The IPCC's Sixth Assessment Report will also be released in four parts between April 2021 and April 2022.

⁴The ACP Observatory on Migration is an initiative to study South-South migration and development. Financial support for the initiative comes from the European Union, Switzerland, the United Nations Population Fund, and IOM.

international and regional organizations, including a variety of organizations within the United Nations, the World Bank, regional development banks, the European Union, and others. Third, we reviewed relevant public documents from U.S. government agencies, including the Department of Defense, the U.S. Agency for International Development (USAID), and the United States Institute of Peace (USIP). Fourth, we reviewed academic sources, research institutions, and documents from the relevant country's national government.

The information about each country or territory also includes the following indices and statistics, chosen to illustrate underlying conditions that impact climate resilience, migration, and stability:

- **Total Population:** The total population of a country, area, or region.⁵
- **Fragile States Index:** An annual ranking of 178 countries based on factors that impact stability, with 1 being the least stable, and 178 the most stable. The index accounts for economic, political, and social factors, among others.⁶ According to a variety of sources, fragile or unstable states may have limited resilience to cope with the effects of climate change, including a potential increase in migration.
- **Human Development Index:** A composite index covering three dimensions: life expectancy at birth, mean and expected years of schooling, and gross national income per capita. The Human Development Index classifies countries as Low, Medium, High, or Very High Human Development.⁷ Household characteristics and economic conditions may be factors for individuals in deciding whether to migrate.
- **Gross Domestic Product (GDP) per Capita:** The sum of gross value added by all resident producers in the economy divided by the total

⁵Country level statistics for total population from United Nations Development Program, *Human Development Indices and Indicators: 2018 Statistical Update* (New York, NY, 2018). Total population for Greenland from Population, total Data (2017) Retrieved from <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=GL>.

⁶Fund for Peace, *2018 Fragile States Index* (Washington, D.C., 2018).

⁷United Nations Development Program (2018).

population.⁸ Economic conditions may be a factor for people deciding whether to migrate or stay in their country of origin.

- **Remittances as Percent of GDP:** The money international migrants transfer to recipients in their country of origin, expressed as a percentage of the origin country's GDP.⁹ Sources agree that remittances support resilience in origin countries.
- **Agriculture, Fishing, Forestry as Percent of GDP:** A measure of the value added to an economy from the agricultural sector, which includes forestry, hunting, fishing, and the cultivation of crops and livestock, expressed as a percentage of the country's GDP.¹⁰ Countries that depend on the agricultural sector may be vulnerable to the effects of climate change, according to the World Bank.
- **Percent of Population in Cities:** The population living in areas classified as urban according to criteria each country uses.¹¹ Today, more than half of the global population lives in cities. Migration, in some cases due to climate change, is an important driver of urban growth, according to IOM. Cities are also expected to face increasing risks from rising sea levels, flooding, storms, and other climate change effects.
- **Net Migration Rate:** A measure of the number of people leaving a country compared to the number of people entering a country, expressed as a number per 1,000 people.¹²

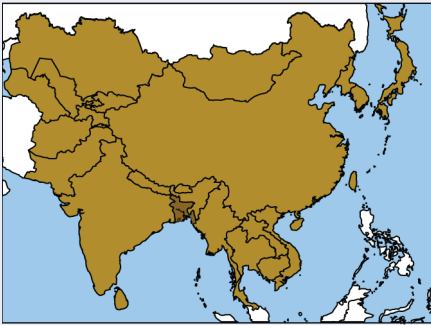
⁸Country level statistics for GDP per Capita from United Nations Development Program (2018). GDP per Capita for Greenland, from GDP per Capita (current US\$) Data. (2017). Retrieved from <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>.

⁹United Nations Development Program (2018).

¹⁰Agriculture, forestry, and fishing, value added (percent of GDP) Data. (2017). Retrieved from <https://data.worldbank.org/indicator/nv.agr.totl.zs>.

¹¹United Nations Development Program (2018).

¹²United Nations Development Program (2018).



Source: Map Resources. | GAO-19-166

ASIA

The effects of climate change in Asia may impact migration and stability according to the Intergovernmental Panel on Climate Change (IPCC) and the Asian Development Bank (ADB). In coastal areas, effects of climate change include rising sea levels, storm surges, and others. Receding glaciers in mountainous areas may also cause flooding, and monsoons in a warmer climate may be more severe. Heat extremes and more rainfall are a particular concern in Southeast Asia. Changes in precipitation and drought in Asia may exacerbate food security challenges, and contribute to people deciding to migrate. Increases in migration, partly stemming from the effects of climate change in surrounding rural areas, may put pressure on existing urban infrastructure. Rural migrants may settle in informal communities on the outskirts of cities, areas that have little resilience to natural disasters. Although the World Bank and others agree that climate change largely causes internal migration, some evidence shows that the impact of climate change contributes to cross-border migration in Asia.¹³ Large numbers of migrants, along with other destabilizing factors, may contribute to instability and conflict, according to the IPCC. The effects of climate change on livelihoods, for example, could increase migration, strain governance, and contribute to conflict as a result. Bangladesh is one example where decreased yields from agriculture and fisheries have contributed to migration to the country's coastal cities, which face their own climate change challenges.

Bangladesh: Climate Change, Migration, Stability and Security

Total Population

164,700,000

Fragile States Index

#32 out of 178

A lower number indicates greater instability.

Human Development Index

Medium

Gross Domestic Product (GDP) per Capita

\$3,524

Remittances as % of GDP

5.4

Agriculture, Fishing, Forestry as % of GDP

13.4

% Population in Cities

35.9

Net Migration Rate per 1000 people

-3.2

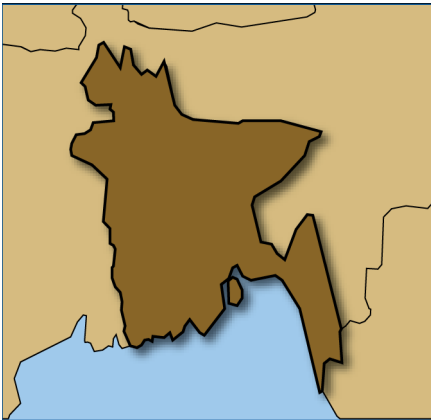
Observed and Projected Effects of Climate Change

Bangladesh's high population density and geography make the country susceptible to the effects of climate change, according to the World Bank, and others. Bangladesh's coasts and river banks are vulnerable to sudden-onset events such as tropical cyclones and flooding. Cyclone Aila in 2009, for example, caused widespread flooding in the southern coastal areas of Bangladesh and impacted millions of people. The storm washed away embankments that protected coastlines and caused severe damage to crops and livelihoods. Tropical Cyclone Mora in 2017 damaged thousands of homes and displaced an estimated 200,000 people. Increases in the number and intensity of tropical cyclones, which some predict will occur in a warmer climate, could have severe impacts on homes, livelihoods, and food security.¹⁴ Bangladesh also experiences many slow-onset climate change events, such as rising sea levels and increasingly severe droughts, which are projected to intensify with climate change. Bangladesh would lose an estimated 17.5 percent of its land if the sea level rose 1 meter, as the International Organization for Migration (IOM) has reported. Projected changes in precipitation levels could cause drought and food insecurity in the northwest and salt-water intrusion could reduce crop yields in the southwest.

¹³The Nansen Initiative, Global Consultation Conference Report (Geneva, October 12-13, 2015).

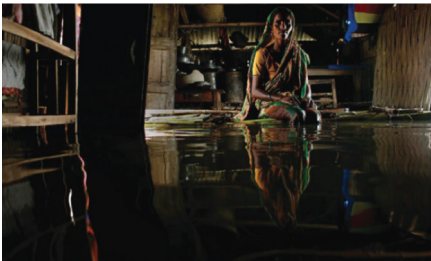
¹⁴See previous GAO work related to food assistance in Bangladesh, GAO, *International Food Assistance: Agencies Should Ensure Timely Documentation of Required Market Analyses and Assess Local Markets for Program Effects*, [GAO-17-640](#) (Washington, D.C.: July 13, 2017).

Map of Bangladesh



Source: Map Resources. | GAO-19-166

A flooded house in Bangladesh



Source: The UN Migration Agency (IOM)/ Abir Abdullah. | GAO-19-166

Migration Trends

Migration is a common adaptation strategy to climate change in Bangladesh, according to the ADB. For example, some farmers have adapted to salt water intrusion and destroyed crops by switching to salt-tolerant rice production or shrimp cultivation. Others have migrated, often to Bangladesh's cities to find work less dependent on agriculture. Many new migrants to Bangladesh's cities live in informal settlements that lack the resilience to withstand sudden-onset climate events. The capital city, Dhaka, is a common destination for migrants displaced by salt-water intrusion, flooding, and river erosion, according to IOM. Dhaka, like many coastal cities in South Asia, is located on a low-lying riverbank and faces increasing risks of extreme flooding. For example, past floods in Dhaka have destroyed homes and contaminated drinking water, creating significant health hazards. In some cases, individuals migrate to cities temporarily for work and return home after the agricultural off season ends. Bangladeshis also provide a significant number of labor migrants to the Gulf States and Malaysia. Remittances from international migrants represent 5.4 percent of the country's GDP, and may help to support resilience to climate change, according to IOM, and others. These migration trends may intensify in the future. One study estimates 9.6 million people will migrate from 2011 to 2050 due to the effects of climate change.¹⁵

Challenges in Stability and Security

Migration due to climate change is cited as a potential destabilizing factor in Bangladesh by ADB, and others. The low-income population in Bangladesh is dependent on agriculture, making the effects of climate change—including impacts on food security—a particular concern. By 2030, these effects on livelihoods and food security could increase the poverty rate in Bangladesh by 15 percent, as the IPCC has reported. Given the proximity of Bangladesh to India, some individuals may also choose to cross the border. Increased migration to India is a potential concern, according to some sources, as India may not have the resources to absorb large numbers of Bangladeshi migrants.¹⁶

¹⁵Refugee and Migratory Movements Research Unit and the Sussex Centre for Migration Research, *Climate Change-related Migration in Bangladesh* (Climate and Development Knowledge Network, April 2013).

¹⁶The CNA Corporation, *National Security and the Threat of Climate Change* (Alexandria, VA: 2007); and Population Council, "Effects of Future Climate Change on Cross-Border Migration in North Africa and India," *Population and Development Review*, Vol. 36, No. 2 (2010).



Source: Map Resources. | GAO-19-166

SOUTH AMERICA

The effects of climate change in South America vary by region, according to the the Intergovernmental Panel on Climate Change (IPCC) and International Organization for Migration (IOM), as well as potentially impacting migration and stability. On the coast, risks include sea level rise, depletion of fisheries, and coral reef bleaching, according to IOM. Coastal cities with growing populations are particularly vulnerable. Melting glaciers in the Andean mountain region, and increased rainfall are expected to change the distribution of water resources, and impact food production as global demand for food is growing. Desertification and land degradation, complicated by the effects of climate change, are contributing to migration from rural areas to cities in South America, as IOM has reported. An estimated 77 percent of people living in high risk areas in South America are located in cities, according to IOM. IOM predicts that as these people feel the effects of sea level rise and water scarcity, they will migrate from the large coastal cities to smaller urban areas. While South America has experienced economic growth in the last decade, poverty rates remain high, and the effects of climate change, including possible migration, may exacerbate inequalities, putting further pressure on cities to meet the needs of their populations. Water security in particular is expected to disproportionately impact low-income communities, according to the IPCC. For example, in Brazil, drought in the northeast may increase migration to southern cities that are facing rising sea levels and landslides, with consequences for food, water, and energy security.

Brazil: Climate Change, Migration, Stability and Security

Total Population

209,300,000

Fragile States Index

#106 out of 178

A lower number indicates greater instability.

Human Development Index

High

Gross Domestic Product (GDP) per Capita

\$14,103

Remittances as % of GDP

0.1

Agriculture, Fishing, Forestry as % of GDP

4.6

% Population in Cities

86.3

Net Migration Rate per 1000 people

0.0

Observed and Projected Effects of Climate Change

Brazil’s cities and rural regions may encounter a range of climate change effects, according to the IPCC and IOM. Rural areas, particularly in the northeast, could experience significant impacts from climate change partly due to poverty rates, and historical vulnerability to drought. Higher temperatures are expected to affect crop yields and household incomes, especially for low-income communities. In northeastern Brazil, temperatures are expected to increase and rainfall to decrease. The northeast could see a 22 percent reduction in precipitation by 2100, according to IPCC projections. Brazil’s coastal areas, including cities, are also vulnerable to rising sea levels, heavy precipitation, flooding, and landslides. The vast majority of Brazil’s population, about 86 percent, lives in cities, many in coastal areas, according to the United Nations Development Program. As their populations have grown, urban areas have extended out. This urban growth in Brazil’s megacities has caused further increases in temperature, rainfall, and landslides. For example, current levels of urbanization in the metropolitan area of Sao Paulo may already be responsible for the 2°C warming observed in the city over the last 50 years, as well as the rise in extreme rainfall, according to the IPCC. The metropolitan area is expected to extend its area 38 percent by 2030. Multiple studies of the effects of urbanization on Sao Paulo’s climate suggest higher temperatures affect convective rainfall, which occurs when warm air rises, condenses to form clouds, and produces extreme rain. Other concerns are the depletion of coral reefs and mangrove forests on Brazil’s coastlines, and decreases in biodiversity.

Map of Brazil



Source: Map Resources. | GAO-19-166

A favela on the outskirts of Salvador de Bahia, Brazil



Source: World Bank/Scott Wallace. | GAO-19-166

Migration Trends

Migration from drought in northeastern Brazil to cities has increased urban populations, putting more people at risk of displacement from flooding and landslides. Migration from the northeast is a historical trend in Brazil, as economic migrants have sought seasonal jobs in more productive agricultural regions, or moved permanently to southern cities. Projected declines in rainfall have led some to predict further increases in migration in northeastern Brazil, as the IPCC has reported. However, remittances from family members who leave Brazil's northeast support resilience for those who remain and may help to reduce migration. Already environmental factors contribute to migration to cities, including to favelas, informal settlements often constructed in hilly areas and floodplains outside of Brazilian cities. A significant number of the favela residents in Rio de Janeiro are migrants from northeastern Brazil, according to IOM. These new migrants may be at risk of further displacement if heavy rainfall, flooding, and other climate change effects destroy their vulnerable homes. For example, heavy rainfall in April 2010 resulted in landslides across Rio de Janeiro, displacing an estimated 5,000 people, according to a report from the World Bank. Brazil is also a destination for migrants from other countries in the region. Migrants from Venezuela searching for jobs and improved food security have come in growing numbers in recent years, as have migrants from Haiti fleeing a series of natural disasters, as IOM has reported.

Challenges in Stability and Security

Although Brazil ranks 106th out of 178 countries on the Fragile States Index, the effects of climate change may contribute to challenges with water, food, and energy access according to the IPCC. Decreased rainfall could decrease agricultural productivity, with potential health impacts for poor populations. These conditions are of particular concern in northeastern Brazil, as extreme weather and low crop yields are associated with more violence, according to the IPCC. Brazil also receives about 70 percent of its electricity from hydroelectric power, according to the United Nations Environment Programme, and recent droughts caused power cuts across many major cities. Although not linked to the effects of climate change, absorbing a growing number of migrants fleeing political and economic instability in Venezuela may impact the broader region, according to the U.S. Department of Defense and the National Intelligence Council. Neighboring countries, including Brazil, may struggle to absorb the influx of migrants. On average, 800 Venezuelans are crossing the border to Brazil every day in need of urgent humanitarian assistance, according to the UNHCR, the UN Refugee Agency.



Source: Map Resources. | GAO-19-166

THE ARCTIC

The effects of climate change in the Arctic, including higher temperatures and melting ice, have contributed to shifts in migration across the Arctic, and may have security implications. Increasing temperatures may have a variety of impacts in the Arctic, according to the Intergovernmental Panel on Climate Change (IPCC). The effects of rising temperatures are disrupting livelihoods and food security, especially for indigenous communities, and opening up untapped natural resources to extraction. Both trends have impacted migration flows in the Arctic. Rising temperatures and melting ice have opened up previously inaccessible waterways in the Arctic, with implications for national security, according to the Department of Defense and others. Greenland, located in the Arctic and considered part of Kingdom of Denmark, exhibits many of these trends.

Greenland: Climate Change, Migration, Stability and Security

Total Population

56,000

Fragile States Index

Not Available*

Human Development Index

Not Available*

Gross Domestic Product (GDP) per Capita

\$48,159.5

Remittances as % of GDP

Not Available*

Agriculture, Fishing, Forestry as % of GDP

18.7

% Population in Cities

Not Available*

Net Migration Rate per 1000 people

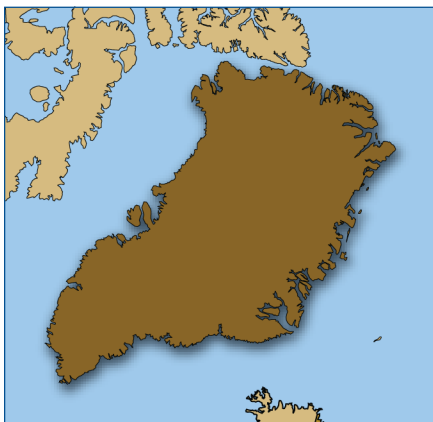
Not Available*

**Statistics available for the Kingdom of Denmark, but not for Greenland, a part of Denmark.*

Observed and Projected Effects of Climate Change

Greenland is experiencing the effects of climate change, including glacial and ice melt, shifts in wildlife distribution, and newly available oil and mineral deposits, among others. The Greenland Ice Sheet covers approximately 80 percent of Greenland's land mass. The ice sheet's melting rate is slow, but uncertain. Increases in temperature greater than 1°C may result in the near loss of the entire ice sheet over a millennium and significant sea level rise, according to the IPCC. In the short term, predicting the ice sheet's melting rate is a challenge as predictions vary in the scientific community. Accurate predictions would support mitigation and adaptation efforts in vulnerable areas. Rising temperatures and shrinking ice cover have shifted the distribution and migration patterns of marine mammals and fish, and impacted food security according to the IPCC and the Arctic Council, an intergovernmental forum for Arctic states. For example, the economy in Paamiut, Greenland, depended primarily on cod fisheries until changing climate conditions caused cod to disappear, and the town was slow to adapt to newly available shrimp. Similarly, fisheries in Disko Bay, Greenland, have struggled to adapt to new conditions. Rising temperatures and the resulting reduction in ice cover have required a shift to fishing from boats in open water instead of hunting and fishing over ice cover. Lastly, warming and ice melt may make significant oil and mineral deposits accessible for extraction in the future. The potential expansion of extraction industries makes environmental sustainability another possible concern. For example, an estimated 31 billion barrels of oil and gas may exist off the coast of Northeast Greenland, according to the Kingdom of Denmark's 2011-2020 Arctic Strategy. The strategy stresses the importance of assessing and reducing risks to the environment resulting from the exploration and extraction of oil and gas.

Map of Greenland



Source: Map Resources. | GAO-19-166

The local Inuit population in Uummannaq, Greenland relies heavily on ice coverage for fishing and travel by traditional dog-sled.



Source: GRID-Arendal/Lawrence Hislop. | GAO-19-166

Migration Trends

The effects of climate change are predicted to contribute to internal and external migration in Greenland. For example, young people are increasingly leaving indigenous communities in rural areas for cities in Greenland in search of work, as traditional livelihoods become unsustainable. Greenland is home to a majority indigenous population, primarily Inuit, whose traditional hunting and fishing practices require travel across ice. In the past, people adapted to seasonal changes to support livelihoods by migrating, and the practice was embedded into indigenous social structures. With reduced ice cover, however, migrating to hunt, fish, and maintain connections to community is more dangerous or restricted. Government policies promoting centralized services, such as health care and education, have also played a role in the shift away from migration as a way of life. As a result, indigenous livelihoods are more difficult to maintain, and young people often migrate to towns and cities in Greenland, or to Denmark, for education. At the same time, warmer temperatures have made mineral extraction feasible. As the extraction industry grows, new jobs may draw migrants from outside the Arctic region. In 2011 companies spent \$100 million on the exploration of minerals in the Arctic, and the estimated number of new mines is expected to require more workers than now live in the region.¹⁷ Currently, more people leave than migrate to Greenland.

Challenges in Stability and Security

Although instability is not a concern in Greenland, the effects of climate change have increased its strategic importance to Denmark and other countries, which may impact indigenous society and governance. Denmark and its territories rank very high on the human development index, and the country is not considered a fragile state. However, activity in the Arctic has increased demand for defense capabilities in Greenland. The retreat of sea ice in the Arctic, as reported by the U.S. National Snow and Ice Data Center, combined with an expected growth in human activity, has heightened U.S. interests in the Arctic region, including in Greenland, as we have previously reported.¹⁸ In recent years Denmark has invested in defense capabilities specific to the Arctic, citing the need for improved operational capacity in the region. Disruption to indigenous ways of life, specifically hunting and fishing livelihoods, is also a concern. For example, high rates of alcoholism and domestic violence in Greenland have been linked to rapid social changes, according to a recent report from the European Union. Although a territory of Denmark, Greenland has considerable independence and may become more economically independent as revenues from the extraction of natural resources grow.¹⁹

¹⁷Brookings-LSE Project on Internal Displacement, *A Complex Constellation: Displacement, Climate Change and Arctic Peoples* (January 30, 2013).

¹⁸GAO, *Coast Guard: Arctic Strategy Is Underway, but Agency Could Better Assess How Its Actions Mitigate Known Arctic Capability Gaps*, [GAO-16-453](#) (Washington, D.C.: June 15, 2016).

¹⁹Brookings-LSE Project on Internal Displacement.



Source: Map Resources. | GAO-19-166

SUB-SAHARAN AFRICA

The effects of climate change on Sub-Saharan Africa vary depending on the region and have impacts on migration and security, according to the International Organization for Migration (IOM). Coastal areas, for example, in West and East Africa are at risk from sea level rise that could affect major cities. Drought and the risk of desertification in the Sahel is cited as a concern, as is increased rainfall in parts of Central Africa accompanied by lower agricultural yields. As desertification threatens the livelihoods of farmers and herders, and drought makes fishing more challenging, rural dwellers may be more likely to migrate to cities, according to the United Nations Environment Programme (UNEP). Urbanization and population growth across Sub-Saharan Africa is already making densely populated cities vulnerable to flooding, storms, and erosion, increasing the number of people at risk of displacement by sudden-onset disasters. Climate change effects and changing migration flows across Sub-Saharan Africa may impact access to natural resources and contribute to existing tensions and conflicts, according to UNEP and the Intergovernmental Panel on Climate Change (IPCC). In Nigeria, the effects of climate change may effect a variety of livelihoods and increase migration south, while also exacerbating existing conflicts.

Nigeria: Climate Change, Migration, Stability and Security

Total Population

190,900,000

Fragile States Index

#14 out of 178

A lower number indicates greater instability.

Human Development Index

Low

Gross Domestic Product (GDP) per Capita

\$5,338

Remittances as % of GDP

5.8

Agriculture, Fishing, Forestry as % of GDP

20.8

% Population in Cities

49.5

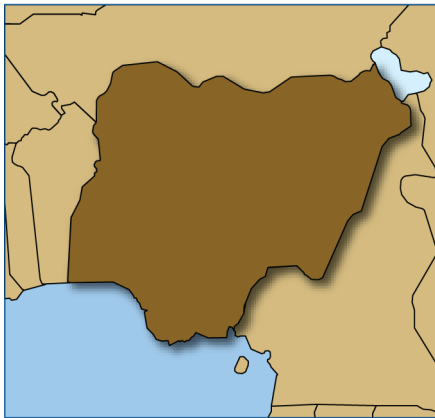
Net Migration Rate per 1000 people

-0.4

Observed and Projected Effects of Climate Change

The effects of climate change on Nigeria may impact the country's agriculture and economy, according to the United States Institute of Peace (USIP). Higher temperatures and decreased rainfall have contributed to drought in northern Nigeria. Desertification is also a concern. Some regions in northern Nigeria have less than 10 inches of rain a year, an amount that has decreased by 25 percent since the 1980's, according to USIP. In other areas across Nigeria flooding has resulted in major crop losses, according to UNEP. Rising sea level, water inundation, and erosion are concerns in Nigeria's coastal areas. Rising sea level is predicted to pose medium to very high risks to Africa's coastal areas by 2100, according to the IPCC. Future sea level rise could result in the inundation of over 70 percent of the Nigerian coast. A rise of 0.2 meters in sea level could risk billions of dollars in assets, including oil wells near the coast. Even without a rapid rise in sea level, Nigeria's coastal areas could experience erosion and significant land loss by 2100, as the IPCC has reported.

Map of Nigeria



Source: Map Resources. | GAO-19-166

Nigerian refugees at the Minawao camp in Cameroon.



Source: © UNHCR/D. Mbaiozem. | GAO-19-166

Migration Trends

The effects of climate change on livelihoods in northern Nigeria may contribute to migration to the south according to UNEP, while conflict in the north drives separate migration trends. As the effects of climate change make farming and fishing more challenging elsewhere in Nigeria, migration to southern coastal cities may increase. Traditionally, farmers, herders, and fishery workers migrated for temporary employment during the off season, including migration to Nigeria's cities to work in the oil industry. Permanent migration south as well as to cities may become more common if land suitable for farming decreases. As fish habitats like Lake Chad dry up, fishery workers may also migrate. Larger urban populations on the coast will put more people at risk of sea level rise, water inundation, and erosion, according to the IPCC. A rise in sea level of 1 meter could put over 3 million people at risk of displacement as the IPCC has reported. Herders have also moved further south due to increased drought in northern Nigeria, as UNEP and USIP have reported. A 2010 survey of herdsmen in Nigeria, for example, found that nearly one-third of them had migrated southeast as a result of changes in the natural environment, according to the UNEP. The ongoing conflict with Boko Haram, while not caused by climate change, has further resulted in millions of displaced people across the Lake Chad region, including many Nigerians who have fled to Cameroon, Chad, and Niger.

Challenges in Stability and Security

The effects of climate change, migration, and conflict are interconnected in Nigeria, as USIP has reported. The country is ranked 14th of 178 countries on the Fragile States Index. Events in northwest Africa, including Boko Haram's attacks in Nigeria, have underscored concerns about the region's vulnerability to the spread of violent extremism.²⁰ The effects of climate change may exacerbate these concerns, according to USIP. Nigerians fleeing attacks from Boko Haram in the north have gone to communities in neighboring Chad, Cameroon, and Niger that are already experiencing food shortages due in part to climate change. These neighboring countries as a result have fewer resources to support both their own residents and the newer refugees. Non-state actors may also take advantage of government inaction on the effects of climate change. Boko Haram, for example, has justified its acts of violence by pointing to government failures, according to the USIP. Separately, increased drought in the north may aggravate historic tensions over land and water use between farmers in the south and herders migrating from the north, according to UNEP. Nigeria's oil fields on the coast, which represent a significant part of the economy, are also at risk from sea level rise. Potential losses in oil revenue could impact Nigeria's ability to respond to humanitarian crises and conflict at home. Increased violence within its borders could also affect Nigeria's ability to support regional peacekeeping missions, such as the United Nations Mission in Liberia from 2003 to 2018, where Nigerian troops worked to restore security after a civil war.

²⁰GAO, *Combating Terrorism: U.S. Efforts In Northwest Africa Would Be Strengthened By Enhanced Program Management*, [GAO-14-518](#) (Washington, D.C., June 24, 2014).



Source: Map Resources. | GAO-19-166

MIDDLE EAST AND NORTH AFRICA

The effects of climate change in the Middle East and North Africa, including on its desert regions, may impact water access and compound migration and stability challenges, according to the United Nations Environmental Programme (UNEP). Over 60 percent of the population already experiences high or very high water stress, according to the World Bank. Coupled with unsustainable water use, climate change may further exacerbate challenges with water security. The region continues to experience rising temperatures and declining annual rainfall, trends that contribute to the severity and length of drought, land degradation, and desertification. Decreased water security affects the livelihood and quality of life of farmers in the region, contributing to an increase in their migration to the cities and more urbanization, according to the World Bank. In contrast, many people are expected to migrate away from coastal cities as a result of sea level rise, according to UNEP. These potential migrations would be taking place in a region that already hosts large numbers of migrants such as those displaced by conflict and violence, including 18 percent of the world's refugees, according to the International Organization for Migration. Challenges in water security may put greater pressure on unstable governments in the region, by intensifying existing tensions and conflicts between populations and their governments as well as between countries that share sources of water. The conflict in Syria illustrates the complex nature of climate change, migration, and conflict in the region, and the challenges to accurately assessing the links among the three, as noted in a technical paper commissioned by the U.S. Agency for International Development (USAID).

Syria: Climate Change, Migration, Stability and Security

Total Population

18,300,000

Fragile States Index

#4 out of 178

A lower number indicates greater instability.

Human Development Index

Low

Gross Domestic Product (GDP) per Capita

Not available

Remittances as % of GDP

Not available

Agriculture, Fishing, Forestry as % of GDP

Not available

% Population in Cities

53.5

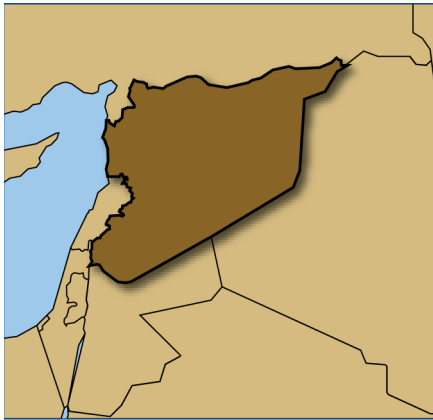
Net Migration Rate per 1000 people

-41.8

Observed and Projected Effects of Climate Change

Rising temperatures and declining rainfall have contributed to recent droughts in Syria, a trend that may continue. The country underwent an extended drought from about 2006 until 2011. During the drought an estimated 60 percent of Syria experienced severe crop failure, and accompanying impacts on food security. Some studies have linked the length and severity of the drought in Syria to climate change, as USAID has reported. Others, however, have pointed to government land and water use policies, combined with the effects of climate change, as responsible for the severity of the drought. Agricultural policies, for example, encouraged farmers to grow water intensive crops like wheat, and supported inefficient irrigation practices, policies which further depleted ground water and made the region more vulnerable to decreases in rainfall linked to climate change. Across the Middle East, the rising temperatures and declining rainfalls of recent decades may worsen, according to the World Bank. If these trends continue, countries in the Middle East, including Syria, could continue to experience periods of severe drought and reduced crop yields.

Map of Syria



Source: Map Resources. | GAO-19-166

Za'atri camp in northern Jordan



Source: © UNHCR/A. McDonnell. | GAO-19-166

Migration Trends

The ongoing conflict in Syria, in which migration due to climate change may have been a contributing factor, has caused large-scale migration to neighboring countries in the Middle East and to Europe. Leading up to the civil war, prolonged drought, among other factors, had increased migration to Syrian cities. Because of the drought, in 2009, over 800,000 Syrians lost their livelihoods in the agricultural sector, while nearly 1 million experienced food insecurity. In 2010, an estimated 200,000 people migrated from farms in rural areas to cities, according to a UN report. The conflict in Syria, which began in 2011, has further displaced large numbers of people within the country and across the Middle East, as we have previously reported.²¹ At the beginning of the conflict, Syrians, as well as Iraqi and Palestinian refugees who had been residing in Syria, fled mainly to Jordan, Lebanon, and Turkey. As the conflict persisted, refugees fled in larger numbers to Turkey, with the UNHCR reporting that nearly 1 million Syrians sought protection in that country in 2015. Starting that year, a growing number of Syrians risked dangerous sea voyages to reach countries in Europe, such as Greece, Germany, and Sweden. As of June 2017, more than 5 million registered Syrian refugees were living in neighboring countries, including more than 3 million in Turkey, and more than 1 million in Lebanon.

Challenges in Stability and Security

Sources agree that the Syrian conflict is a significant security challenge that has resulted in large scale migration across the Middle East and to Europe. Yet the link between prolonged drought, rural to urban migration, and the current conflict in Syria is uncertain. Some academic sources argue that the increased strain on urban infrastructure and resources due to the rural to urban migration played a role in Syria's growing instability. Others highlight the complex nature of the Syrian conflict, pointing to broader political factors that exacerbated resource scarcity and inequality. For example, as the drought intensified, the Syrian government downplayed the severity of the humanitarian crisis, as described in research cited in a technical report commissioned by USAID.²² As a result, appeals to the international community for emergency aid received minimal support. Combined with existing sectarian divisions, ongoing revolutions across the Middle East, and other factors, the government's response to the drought may have contributed to the current conflict. Migration and displacement are a concern in the region, according to the Department of Defense and others. The U.S. government has provided significant humanitarian assistance for Syrian refugees in the Middle East, including in Lebanon and Jordan, as we have previously reported.²³ However, a technical report commissioned by USAID has cautioned that the ongoing conflict in Syria makes it difficult to conduct research and draw conclusions related to climate, migration and conflict.²⁴

²¹GAO, *Syrian Refugees: U.S. Agencies Conduct Financial Oversight Activities for Humanitarian Assistance but Should Strengthen Monitoring*, [GAO-18-58](#) (Washington, D.C.: Oct. 31, 2017).

²²Schuyler Null and Lauren Herzer Risi, Woodrow Wilson International Center for Scholars, USAID Office of Conflict Management and Mitigation Discussion Paper, *Navigating Complexity: Climate, Migration, and Conflict in a Changing World* (November 2016).

²³[GAO-18-58](#).

²⁴Null and Risi.



Source: Map Resources. | GAO-19-166

OCEANIA

The effects of climate change on Oceania, particularly rising seas, may significantly impact coastal populations and increase migration in the future, as the Asian Development Bank (ADB) and the Intergovernmental Panel on Climate Change (IPCC) have reported. Rising temperatures and declining rainfall may also contribute to lower yields from fisheries and agriculture, and a significant decrease in coral reef cover. Extreme weather events, including higher temperatures, wind, and rainfall, have already increased in number and intensity across the region. In the majority of Pacific island nations, of those who migrate, more people leave than come, according to the African, Caribbean, and Pacific Observatory on Migration. The majority of migration in the region is economically driven. In the future, climate change may further impact these migration patterns across the region, according to the IPCC. Climate change has already exacerbated challenges that aid-dependent nations in the region face, restricting livelihoods and resources and contributing to pressures to migrate. The costs of climate change, including a decline in crop yields, a rise in energy demands, and a loss of coastal land, are predicted to be significant. The ADB estimates these costs will reach 12.7 percent of the Pacific regions' GDP by 2100. Increased migration may also impact political stability and play a role in geopolitical rivalries within the region, according to the IPCC. The effects of climate change, especially rising sea levels, may result in forced migration from the Republic of the Marshall Islands (the Marshall Islands) and have additional impacts on the U.S. defense infrastructure on the islands.

Marshall Islands: Climate Change, Migration, Stability and Security

Total Population

100,000

Fragile States Index

Not Available

Human Development Index

High

Gross Domestic Product (GDP) per Capita

\$3,819

Remittances as % of GDP

14.8

Agriculture, Fishing, Forestry as % of GDP

15.9

% Population in Cities

76.7

Net Migration Rate per 1000 people

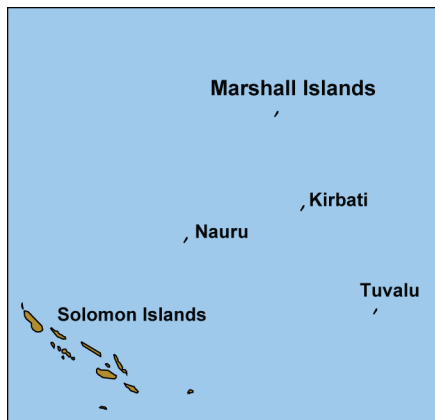
Not Available

Observed and Projected Effects of Climate Change

Rising sea levels are a grave threat to the Marshall Islands. The country consists of islands, low-lying atolls—coral caps sitting on top of submerged volcanoes—making it particularly vulnerable to rising sea levels. On average, the Marshall Islands are 2 meters above sea level. In Majuro, the country's most populous atoll, observed rates of sea level rise are already twice as fast as the global average. Population centers experience significant flooding, with damage to roads, houses, and infrastructure, especially during La Niña years, which are significantly wetter and more prone to extreme rainfall. Flooding is expected to worsen with rising sea levels, with consequences for the availability of drinking water. On Roi-Namur island, for example, a 0.4 meter rise in sea level combined with wave-driven flooding is predicted to make groundwater undrinkable year round as early as 2055. This salt water inundation may contaminate already limited groundwater across the Marshall Islands. Lastly, during the 1940s and 1950s, the Marshall Islands was the site of 67 U.S. nuclear weapons tests on or near Bikini and Enewetak Atolls. Projected increases in frequency of flooding may negatively impact efforts to contain radioactive material stored on Runit Island.²⁵

²⁵Storlazzi, C.D., et al., 2017, The Impact of Sea-Level Rise and Climate Change on Department of Defense Installations on Atolls in the Pacific Ocean (RC-2334): U.S. Geological Survey Administrative Report for the U.S. Department of Defense Strategic Environmental Research and Development Program.

Map of Marshall Islands



Source: Map Resources. | GAO-19-166

Wave-driven flooding and overwash on Roi-Namur Atoll, Republic of the Marshall Islands



Source: U.S. Geological Survey. | GAO-19-166

Migration Trends

A number of factors have increased migration from the Marshall Islands, including to the United States. In 1986, the United States entered into a compact of free association with the country that allowed its citizens to migrate to the United States, as we have previously reported. As a result, more than 20,000 Marshallese now live in the United States.²⁶ People are more likely to migrate abroad as the effects of climate change on the Marshall Islands—including rising sea levels—increasingly impact livelihoods.²⁷ The threat of mass displacement and forced migration is also a concern, as the International Organization for Migration has reported. However, Marshallese culture has a strong connection to the land, which means that many view migration as a last resort. For people still living in the Marshall Islands, they face overpopulation in urban centers and displacement by sudden-onset disasters like cyclones and flooding. Factors influencing people deciding to move abroad include displacement, lack of economic opportunity—sometimes exacerbated by climate change—and limited access to health care. Climate change is likely to increase risks to public health in the country.²⁸ Increased rainfall, for instance, may expand mosquito breeding grounds, raising the risk of diseases like dengue fever. The country's limited health care system may further contribute to migration from the islands.

Challenges in Stability and Security

In the future, the Marshall Islands may become uninhabitable. This prospect threatens the existence of the Marshall Islands as a sovereign state, as well as the United States defense facilities located on the islands. The total loss of land could result in the Marshall Islands being uninhabitable, which raises problems of migration, resettlement, cultural survival, and sovereignty. Relocation of the population of the Marshall Islands, and of other Pacific Island nations at risk of rising seas, could cause significant geopolitical challenges.²⁹ The Marshall Islands are also of strategic importance for the United States. Under the Compact of Free Association, the United States has permission to use several islands—including Kwajalein Atoll, the location of the Ronald Reagan Ballistic Missile Defense Test Range—until 2066. The country's proximity to the equator makes the Marshall Islands ideal for missile defense and space work. Yet the island's defense infrastructure and operations are at significant risk due to rising sea levels, flooding, and diminishing supplies of potable water. As the Department of Defense has noted, climate change will have serious implications for the department's ability to maintain its infrastructure and ensure military readiness in the future.³⁰

²⁶GAO has previously reported on migration from the Marshall Islands. See GAO, *Compacts of Free Association: Improvements Needed to Assess and Address Growing Migration*, GAO-12-64 (Washington, D.C., November 14, 2011).

²⁷International Organization for Migration, *Republic of the Marshall Islands IOM Country Strategy 2017-2020* (Delap, Majuro, Republic of the Marshall Islands: 2017).

²⁸Republic of the Marshall Islands, *Joint National Action Plan for Climate Change Adaptation and Disaster Risk Management 2014-2018*.

²⁹Storlazzi, C.D., et al., 2017.

³⁰DOD, 2014 Climate Change Adaptation Roadmap (Alexandria, VA: June 2014).



Source: Map Resources. | GAO-19-166

CENTRAL AMERICA AND THE CARIBBEAN

The effects of climate change on Central America and the Caribbean may increase migration and exacerbate poverty rates, as the National Intelligence Council has reported. The climate in Central America and the Caribbean is predicted to be warmer and dryer. The Caribbean’s extensive coastlines and low-lying areas are vulnerable to sea level rise and an increase in sudden-onset disasters, including hurricanes and storm surges. Drought is a particular concern in Central America, where declines in rainfall have reduced crop yields and threatened livelihoods in recent years. Some evidence shows that drought in parts of Central America has contributed to migration north, including to the United States. Population growth, especially in coastal cities, has increased the number of people at risk during hurricane season, and the number and intensity of hurricanes have grown in recent years. Some attribute the increase in intensity to higher sea surface temperatures caused by climate change. However, there remains debate about long term hurricane trends. Recent hurricanes have caused displacement, and significant losses and damages—including to infrastructure—across the region. The depletion of coral reefs and mangrove trees, natural barriers to coastal erosion and flooding, has exacerbated vulnerability to storms in coastal areas. Climate change is likely to have negative impacts on tourism in the Caribbean, where the industry is an important part of the economy, according to Inter-American Development Bank. Climate change impacts on the economy may make it increasingly difficult for governments to reduce poverty and move towards environmental sustainability. Haiti’s geography, location, and high poverty rates make the country especially vulnerable.

Haiti: Climate Change, Migration, Stability and Security

Total Population

11,000,000

Fragile States Index

#12 out of 178

A lower number indicates greater instability.

Human Development Index

Low

Gross Domestic Product (GDP) per Capita

\$1,653

Remittances as % of GDP

29.3

Agriculture, Fishing, Forestry as % of GDP

17.6

% Population in Cities

54.3

Net Migration Rate per 1000 people

-2.9

Observed and Projected Effects of Climate Change

Haiti is highly vulnerable to climate change effects, partly due to its long coastline.³¹ Hurricanes routinely make landfall in the country, and increases in rainfall and wind speeds associated with hurricanes are likely. Severe hurricanes, including Hurricane Matthew in September 2016, have hit Haiti in recent years. Hurricane Matthew was the first category 4 storm in Haiti since 1964. Damage from severe flooding and severe winds during the hurricane affected over 2 million people and created significant food security and public health challenges. Significant deforestation has further exacerbated Haiti’s vulnerability to hurricanes, as trees previously provided a natural barrier to the erosion that strong winds and more rainfall can cause. Rising temperature and highly variable rainfall have led to extreme drought and flash flooding, according to the U.S. Agency for International Development (USAID).³² These trends decrease crop yields, affecting the livelihoods of farmers, and threaten water access. Projected increase in temperature and decreases in rainfall are likely to intensify drought in Haiti’s interior.

³¹International Organization for Migration, *The Atlas of Environmental Migration* (New York: Routledge, 2017).

³²USAID, *Haiti: Environment and Climate Change Fact Sheet* (January 2016).

Map of Haiti



Source: Map Resources. | GAO-19-166

Flooding in Cité Soleil, a neighborhood in Port-au-Prince, Haiti



Source: UN Photo/Logan Abassi. | GAO-19-166

Migration Trends

Slow-onset climate events, such as drought, and rising sea levels, and sudden-onset events, including earthquakes, affect Haiti, according to the International Organization for Migration (IOM). Haiti is also particularly exposed to extreme weather events, such as hurricanes, which can lead to displacement. In January 2010, a catastrophic earthquake in Haiti killed an estimated 230,000 people and left close to 1.5 million people homeless. According to IOM, the recurrence of environmental disruptions increases risks and vulnerabilities. When Hurricane Sandy struck Haiti in October 2012, the country had still not recovered from the 2010 earthquake. The worsening of climate change effects around the world, particularly in low-income countries, may increase the number of people wanting to immigrate to the United States, where approximately 700,000 Haitians live today.³³ Remittances from family members living outside Haiti make up a significant portion of the economy, at 24.7 percent of GDP. The majority of these remittances come from the United States, as we have previously reported.³⁴ Remittances may support resilience to climate change effects as migrants send money home for disaster recovery and adaptation.³⁵

Challenges in Stability and Security

Haiti, the poorest country in the western hemisphere, has experienced political instability for most of its history, and ranks 12th of 178 on the Fragile States Index. The government has a low capacity to respond to additional challenges like those related to climate change, according to USAID. The Ministry of Environment, for example, is a relatively new organization within the Haitian government, and local and regional governments have a limited ability to enforce environmental laws and regulations. The United States has provided substantial aid to Haiti, both in disaster response and broader development projects. Official development assistance for Haiti in 2015, for instance, totaled slightly more than \$1 billion. According to a January 2018 UN report, 2.8 million people were still in need of humanitarian assistance.

³³The Department of Homeland Security (DHS) designated Haiti for Temporary Protected Status (TPS) in the aftermath of the 2010 earthquake, allowing eligible Haitian nationals to apply for TPS. The TPS designation for Haiti was set to expire on January 22, 2018. On November 20, 2017, DHS determined that conditions in Haiti no longer supported its designation for TPS, and decided to terminate the designation for Haiti. Subsequently, in October 2018, a federal court enjoined DHS from implementing and enforcing the decision to terminate TPS for Haiti pending further resolution of the case, an order that DHS has appealed.

³⁴GAO, *Remittances To Fragile Countries: Treasury Should Assess Risks from Shifts to Non-Banking Channels*, [GAO-18-313](#) (Washington, D.C., March 8, 2018).

³⁵Kanta Kumari Rigaud, Alex de Sherbinin, Bryan Jones, Jonas Bergmann, Viviane Clement, Kayly Ober, Jacob Schewe, Susana Adamo, Brent McCusker, Silke Heuser, and Amelia Midgley. 2018. *Groundswell: Preparing for Internal Climate Migration*. Washington, DC: The World Bank.

Appendix III: Department of State Global Climate Change Initiative Adaptation Activities Funded in Fiscal Years 2014 through 2017

The Department of State’s Bureau of Oceans and International Environmental and Scientific Affairs (State/OES) provided about \$78 million in adaptation funding from the Global Climate Change Initiative for eight projects for fiscal years 2014 through 2017 (see table 2).¹ State/OES officials said that these projects aimed to help countries prepare for the impacts of climate change, potentially reducing the pressure to migrate, but to their knowledge, none of these projects directly supported activities related to migration. The president’s budget for fiscal year 2018 did not include a request for funding for the Global Climate Change Initiative and State officials said that the agency does not plan to fund additional adaptation activities and has not requested additional funding for the activities.

Table 2: Department of State Global Climate Change Initiative Adaptation Activities Funded in Fiscal Years 2014 through 2017

Activity name	Countries in which activity occurred	Funding	Time period	Activity description
Adapt Asia-Pacific	Federated States of Micronesia, Fiji, Marshall Islands, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu	\$2,000,000	September 2015 through November 2017	Implemented through the U.S. Agency for International Development, this project aimed to increase human and institutional capacity to mobilize and leverage international climate funds to improve adaptation and resilience in the Pacific region.
Increasing Private Investment in Landscape Restoration: A Pathway to Enhanced Resilience	Ethiopia, Niger, and Malawi	\$197,530	August 2017 through March 2019	This project aims to enhance resilience by increasing countries’ ability to attract investment in forest landscape restoration—a major pathway for achieving climate change resilience. The project will work with private sector investors, project developers, small- and medium-sized enterprises, governments, and communities to improve focal countries’ ability to attract investment in adaptation.

¹The Global Climate Change Initiative was established in 2010 to promote resilient, low-emission development, and integrate climate change considerations into U.S. foreign assistance and was divided into three main programmatic initiatives: (1) Adaptation assistance, (2) Clean Energy assistance, and (3) Sustainable Landscapes assistance.

**Department of State Global Climate Change
Initiative Adaptation Activities Funded in Fiscal
Years 2014 through 2017**

Activity name	Countries in which activity occurred	Funding	Time period	Activity description
Least Developed Countries Fund (LDCF)	Global	\$51,175,000	September 2015 through August 2017	The primary purpose of these contributions to the LDCF was to address the adaptation needs of the least developed countries, which are especially vulnerable to the adverse impacts of climate change. The LDCF financed the preparation and implementation of National Adaptation Programs of Action, which identify a country's priorities for adaptation actions.
National Adaptation Plans Global Network, Initial Grant	Albania, Belize, Benin, Botswana, Brazil, Cambodia, Colombia, Côte d'Ivoire, Dominica, Ethiopia, Fiji, Ghana, Grenada, Guinea, Guyana, Jamaica, Kenya, Kiribati, Liberia, Madagascar, Malawi, Mexico, Morocco, Nepal, Peru, Philippines, Samoa, Senegal, Sierra Leone, Saint Lucia, Saint Vincent and the Grenadines, South Africa, Suriname, Tanzania, Thailand, Togo, Uganda, and Vanuatu	\$4,000,000	September 2015 through 2020	Initial grant to the National Adaptation Plans Global Network. The network is focused on increasing the capacity of national and subnational governments to identify and assess climate risks, integrate these risk considerations in sector planning, develop a pipeline of projects to address risks, identify and secure funding for projects, and track progress toward resilience targets.
National Adaptation Plans Global Network, U.S. in-country programs, Grant Cost Amendment	Colombia, East Caribbean (Guyana, Saint Lucia, Saint Vincent and the Grenadines), Ethiopia, Peru, South Africa, Uganda, West Africa (Côte d'Ivoire, Ghana, Guinea, Sierra Leone, Togo) and, under current consideration, East Caribbean (Dominica, Suriname), and Pacific (Fiji, Kiribati, Tuvalu)	\$5,900,000	July 2016 through 2020	The cost amendment intensified the technical support on National Adaptation Plans to select countries dependent upon specific country adaption needs. In addition, the cost amendment continued the learning and progress from the initial grant.
Pacific Catastrophe Risk Assessment and Financing Initiative	Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu	\$8,000,000	September 2016 through September 2017	Implemented through the Department of Treasury, this funding supported a Treasury grant to the Pacific Catastrophe Risk Assessment and Financing Initiative Multi Donor Trust Fund at the World Bank. This activity established the Pacific Catastrophe Risk Insurance Foundation and the Pacific Catastrophe Risk Insurance Company, among other things.

**Department of State Global Climate Change
Initiative Adaptation Activities Funded in Fiscal
Years 2014 through 2017**

Activity name	Countries in which activity occurred	Funding	Time period	Activity description
Private Investment for Enhanced Resilience (PIER)	Bangladesh, Ghana, Guyana, Indonesia, Mozambique, Peru, Tanzania, and Vietnam	\$5,382,715	September 2017 through September 2020	The goal of PIER is to increase private sector investment in resilience to climate change in eight developing countries. The first phase of the project will assess and identify opportunities for private investment in resilience, as well as build public and private capacity for climate risk assessment in all the countries. In the second phase, public and private sector partners will develop and pilot climate risk-reduction investment models in four of the countries. The third phase will publicize the piloted investment models and lessons learned among the eight countries.
U.S.-India Partnership for Climate Resilience	India	\$1,150,000	September 2015 through September 2019	Implemented through the National Oceanic and Atmospheric Administration, this activity aims to implement a capacity-building partnership with India to promote effective climate resilient decision making at national, state, and local levels.

Source: GAO analysis of Department of State project information from the Bureau of Oceans and International Environmental and Scientific Affairs. | GAO-19-166

Appendix IV: Comments from the Department of State



United States Department of State
Comptroller
Washington, DC 20520

December 21, 2018

Thomas Melito
Managing Director
International Affairs and Trade
Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548-0001


Dear Mr. Melito:

We appreciate the opportunity to review your draft report, "CLIMATE CHANGE: Activities of Selected Agencies to Address Potential Impact on Global Migration, GAO Job Code 102302.

The enclosed Department of State comments are provided for incorporation with this letter as an appendix to the final report.

If you have any questions concerning this response, please contact Chris Caredeo, Strategy Analyst, Office of U.S. Foreign Assistance Resources at (202) 647-8453.

Sincerely,


Christopher H. Flagg

Enclosure:
As stated

cc: GAO – David Gootnick
F – Eric Ueland
OIG - Norman Brown

Department of State Comments on GAO Draft Report

**CLIMATE CHANGE: Activities of Selected Agencies to Address Potential
Impact on Global Migration
(GAO-19-166, GAO Code 102302)**

Thank you for the opportunity to comment on the GAO draft report "*Climate Change: Activities of Selected Agencies to Address Potential Impact on Global Migration.*"

GAO Recommendation: The Secretary of State should ensure that the Director of the Office of U.S. Foreign Assistance Resources provides missions with guidance that clearly documents the department's process for climate change risk assessments for integrated country strategies.

The Department does not oppose this recommendation. By June 30, 2019 we will update our Integrated Country Strategy (ICS) guidance and will specifically note that missions have the option to provide additional information on a variety of topics such as Climate Resilience, in the form of Annexes to their strategy.

In parallel to the above, F and BP will begin working with stakeholders to consider whether to recommend that the Secretary ask the President to rescind Executive Order 13677 – Climate-Resilient International Development.

Appendix V: Comments from the U.S. Agency for International Development



December 18, 2018

David Gootnick
Director, International Affairs and Trade
U.S. Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548

Re: CLIMATE CHANGE: Activities of Selected Agencies to Address Potential Impact on Global Migration (GAO-19-166)

Dear Mr. Gootnick:

I am pleased to provide the formal response of the U. S. Agency for International Development (USAID) to the draft report of the U. S. Government Accountability Office (GAO) entitled, "*CLIMATE CHANGE: Activities of Selected Agencies to Address Potential Impact on Global Migration*" (GAO-19-166).

USAID appreciates the draft report's recognition of our Agency's ongoing efforts to support governments, civil society and the private sector in our partner countries to build resilience and manage risk that, if left unaddressed, could lead to costly humanitarian disasters and related displacement or migration. As the report indicates, the relationship between migration decisions and climate and extreme weather events is complex, mediated by a host of economic, political, social, and demographic factors.

USAID works to build local and national capacity to address this potential area of risk through four types of programs or initiatives: (1) humanitarian assistance and response to disasters, for which USAID serves the U.S. Government's lead coordinator; (2) programs that reduce the risk of disasters, such as by supporting the development of early-warning systems and response capacity; (3) efforts to build resilience to climate-related shocks and stresses, such as through the *Pastoralist Areas Resilience Improvement through Market Expansion* activity in Ethiopia; and, (4) institutional requirements that protect taxpayer investments across USAID's development portfolio by assessing, addressing, and adaptively managing risks that may be anticipated to arise from weather- and climate-related events and conditions.

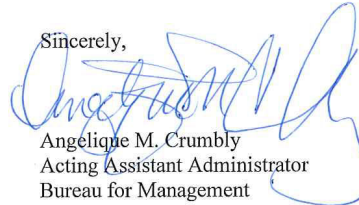
In addition, USAID's Transformation, which has proposed to create three new Bureaus (for Resilience and Food Security, Conflict-Prevention and Stabilization, and Humanitarian Affairs), under the leadership of a new Associate Administrator for Relief, Response, and Resilience, will organize and elevate our work on the resilience-to-relief continuum, enhancing

**Comments from the U.S. Agency for
International Development**

our ability to anticipate future crises, and work with public and private actors in partner countries to put in place the conditions to avoid or manage them.

I am transmitting this letter and the enclosed USAID comments for inclusion in GAO's final report. Thank you for the opportunity to respond to the draft report, and for the courtesies extended by your staff while conducting this engagement. We appreciate the opportunity to participate in the complete and thorough evaluation of our risk-management and resilience-building activities, and how they affect global migration.

Sincerely,



Angelique M. Crumbly
Acting Assistant Administrator
Bureau for Management

Enclosure: a/s

**COMMENTS BY THE UNITED STATES AGENCY FOR INTERNATIONAL
DEVELOPMENT (USAID) ON THE U.S. GOVERNMENT ACCOUNTABILITY
OFFICE (GAO) DRAFT REPORT – CLIMATE CHANGE: Activities of Selected
Agencies to Address Potential Impact on Global Migration (GAO-19-166)**

The U. S. Agency for International Development (USAID) would like to thank the U. S. Government Accountability Office (GAO) for the opportunity to respond to this draft report. We appreciate the extensive work of the GAO engagement team.

The report contains no recommendation for USAID's action.

We are grateful for the report's recognition of USAID's programs that address the complex relationships among migration, disasters, climate and extreme weather-related events. These include the following:

- USAID's role as the lead Federal coordinator for international disaster assistance. The proposed Bureau for Humanitarian Assistance would advance our goal of delivering food and non-food international disaster aid seamlessly, which would serve the U.S. Government's foreign-policy interests and the people in need of humanitarian assistance more effectively. Specifically, the new Bureau would strengthen USAID's role in disasters overseas by consolidating core capabilities—including technical, policy, and operational expertise—into one, seamless entity, well-positioned to achieve maximum efficiency, effectiveness, and accountability, as well as elevate and strengthen USAID's lead humanitarian voice in the U.S. Government interagency, and with all international partners.
- USAID's programs to support the ability of other countries to withstand severe weather-related events. These activities, known as Disaster-Risk Reduction (DRR), are aimed at preventing new risk, reducing existing risk, and managing residual risks, all of which contribute to strengthening resilience and helping nations on their Journey to Self-Reliance. DRR investments include early-warning systems to notify vulnerable populations of imminent disasters; training programs for first-responders; changes to policies on disaster-response and risk-reduction at the national level; and strengthening shelters and other settlements to help withstand hazards, such as hurricanes or earthquakes.
- USAID's activities that support communities in building capacity and resilience to climate-related shocks and stresses. Examples include the *Pastoralist Areas Resilience Improvement through Market Expansion* activity in Ethiopia, which has been supporting pastoralist communities to manage the risk of drought, while building self-reliance, enhancing food security, and promoting private enterprise; as well as USAID's recent activity for *Climate-Resilient Ecosystems and Livelihoods* in Bangladesh; and an activity in Mali that strengthens the capacity of the country's national meteorological agency. We appreciate that the GAO highlighted these activities in the report.

- USAID's requirement, codified in Automated Directives Series Chapter 201, that nearly all new development strategies, projects, and activities assess climate-related risks, and that those with moderate or high levels of risk address and manage those risks adaptively. The objective of the management of climate risk is to ensure that development results and U.S. taxpayer investments are resilient to extreme weather and climate impacts. In Fiscal Year 2017, USAID assessed the climate risk of \$6.3 billion of planned investments; as a result, many projects have incorporated approaches that will improve service-delivery, while enhancing sustainability and resilience.

In addition, we note that the proposed Transformation of USAID includes a proposal to elevate our work on building resilience under a new Bureau for Resilience and Food Security (BRFS), which would incorporate our climate-adaptation team. This new Bureau would better position USAID to integrate planning for risks, such as those highlighted in this report, into broader efforts to build resilience in our partner countries. The new BRFS would work with two other redesigned Bureaus—Conflict-Prevention and Stabilization, and Humanitarian Affairs—under the leadership of a new Associate Administrator for Relief, Response, and Resilience. This would position the Agency to elevate our work on the issues that arise along the resilience-to-relief continuum, and enhance our ability to anticipate future crises and work with governments, civil society and the private sector in partner countries to put in place the conditions to avoid or manage shocks. Complementing the climate-adaptation and resilience efforts of BRFS, other climate-related technical-leadership functions, including the management of climate-related risks, would reside in the proposed Bureau for Development, Democracy, and Innovation (DDI).

The answer to addressing and managing the complex set of factors that lead people to migrate is building safer, more resilient, and more prosperous societies, as well as responding effectively to disasters when they do occur. The programs described above contribute to the ability of USAID and the wider U.S. Government to do this work.

Appendix VI: GAO Contact and Staff Acknowledgments

GAO Contacts

David Gootnick, (202) 512-3149 or GootnickD@gao.gov and Brian Lepore, (202) 512-4523 or LeporeB@gao.gov

Acknowledgments

In addition to the contacts named above, the following individuals made key contributions to this report: Miriam Carroll Fenton (Assistant Director), Kristy Williams (Assistant Director), Rachel Girshick (Analyst-in-Charge), Nancy Santucci, Miranda Cohen, Aldo Salerno, Neil Doherty, and Judith Williams. Alexander Welsh, Justin Fisher, and Joseph Thompson provided technical and other support.

Related GAO Products

Climate Change Adaptation: DOD Needs to Better Incorporate Adaptation into Planning and Collaboration at Overseas Installations. [GAO-18-206](#). Washington, D.C.: November 13, 2017.

Compacts Of Free Association: Actions Needed to Prepare for The Transition of Micronesia and the Marshall Islands to Trust Fund Income. [GAO-18-415](#). Washington, D.C.: May 17, 2018.

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