At any given time, there are likely to be seven different apple varieties and four different kinds of tomatoes in your local grocery store. However, some 2,500 varieties of apples are grown in the United States—and three times that worldwide. This may surprise you, but it is the norm: about 75 percent of the world’s current food supply is derived from just 12 plant and five animal species despite the fact that more than 6,000 plant cultivars and 7,745 livestock breeds have been cultivated for food. Despite the lack of it in our diets, biodiversity—which the UN Food and Agriculture Organization (FAO) defines as the genetic variability at the species and ecosystem levels that contributes to agriculture and food production—is critical for our ecosystems and sustainable development.

**LOW LEVELS OF BIODIVERSITY MULTIPLY THE EFFECTS OF CLIMATE CHANGE**

While much of the mainstream conversation around biodiversity for food and agriculture is narrowly focused on the dangers of declining pollinator populations, there exists a myriad of man-made risks to the longevity of the global food supply. Changes in land and water use and management, pollution, overexploitation and overharvesting of resources, climate change, and population growth and urbanization all significantly stunt the ability of the current food supply to sustainably scale up production to meet the needs of tomorrow, let alone future generations. A continued decline in biodiversity for food and agriculture will only make the shocks and stresses from extreme weather events more tragic and fragile communities more vulnerable. The damaging reality of a severe lack of biodiversity for food and agriculture is no new foe. The famous Irish Potato Famine of 1845 was the result of an overreliance on a single crop, the potato. When disease hit the country, wiping out large swaths of the main staple crop, the result was severe food insecurity and migration.

Although the Irish Potato Famine may seem like the remnants of a bad dream, contemporary examples of the damaging effects of biodiversity loss are ever
prevalent. Resource-stressed communities affected by climate change-induced droughts suffer from economic instability and can contribute to significant threats to national security. As evidenced by the violent pastoralist-herder conflicts in northern Nigeria or the mass migration of climate refugees from the northern triangle, a lack of biodiversity underpinned by fragile agriculture systems can have dangerous consequences for national security while weakening the global food system. This point is emphasized by the new FAO report, *The State of the World’s Biodiversity for Food and Agriculture*: production systems and climate change are significant threats to biodiversity and thus agricultural livelihoods. Biodiversity for food and agriculture can safeguard production systems and livelihoods from climatic events, and as a result is critical in sowing solid ground for global food and nutrition security and enhancing the resilience of rural and urban livelihoods.

**INTEGRATING WHAT IS KNOWN INTO WHAT NEEDS TO BE DONE**

Current initiatives are at risk of entirely missing the mark on the 2016 UN Paris Agreements on global greenhouse gas emissions and the Sustainable Development Goals (SDG), an international commitment to peace and prosperity for people and the planet, are not on track for their 2030 deadline. Despite such agreements, biodiversity is disappearing at a rate “tens to hundreds times higher than the average over the last 10 million years” due to human activity. Initial commitments are not enough; sustained leadership is undoubtedly required.

The United States government is already a leader in this space. The restructuring of the U.S. Agency for International Development (USAID), as well as the emphasis on the Journey to Self-Reliance, provides a framework for biodiversity for food and agriculture to be integrated into the already existing priorities of climate change adaptation and agriculture innovation programming. Furthermore, the U.S. Global Food Security Act of 2016, and its reauthorization in 2018, provides the legislative framework and accountability measure to push for substantive prioritization.

The goals outlined in the U.S. Global Food Security Strategy emphasize a holistic approach to investing in a more sustainable and equitable future. Biodiversity for food and agriculture is the bridge between existing U.S. policy, strategy, and programming in agriculture development, and provides concrete benchmarks for measuring achievements and outcomes, which are vital to the existence of the sustainably of such programming. There is no better time to plant biodiversity for food and agriculture into the current U.S. Global Food Security Strategy than right now while global attention is focused on where institutions are falling short of their commitments and what areas are ripe for change.

The challenge lies in mainstreaming this practice and integrating it into all policies, strategies, and practices adopted by public and private sectors related to, or affecting, biodiversity for food and agriculture. The U.S. has a history of leaning into new challenges while being supported by lessons learned. As one of the top leaders committed to developing resilient economies and communities abroad,
the United States should implement biodiversity for food and agriculture as a crosscutting global food and nutrition strategy. The global population and food supply is hungry for a framework that accounts for the complexities of the food system at large and takes into account land, fisheries, natural ecosystems, labor, infrastructure, technology, policies, markets, and food culture when tackling the current food production issue. The distinct parts of a more complete strategy exist; the challenge lies in integrating the principles of biodiversity for food and agriculture into the U.S. Global Food Security Strategy in a way that bolsters the existing framework and complements the comprehensive nature of U.S. agency initiatives. Urgent action is required to mitigate the effects of man and climate change on the biodiversity and global food supply to achieve the ambitious goal of global food security. For a successful integration of biodiversity for food and agriculture into the U.S. Global Food Security Strategy, the following must be addressed:

The political trivialization of climate change must stop, and responsibility needs to be taken (and acted on) for substantive change. With the arrival of the Trump administration, terms like “climate change” disappeared from government websites. USAID followed suit as implementing partners noticed subtle shifts in language as “climate change” was replaced by “resilience to environmental impacts.” Resiliency to shocks and stresses from the environment are an important piece in developing and sustaining communities. The data and the science are clear: climate change is at the root of these challenges. Although today these language bans no longer exist, the threat of scientific censorship still lingers. USAID was able to create the Office of Global Climate Change within the Bureau for Economic Growth, Education, and Environment, but simply restoring the name of an office during the restructuring period is not enough and is not a reliable promise. Climate change will only exacerbate vulnerabilities in fragile contexts; the less biodiverse an environment is, the less resilient a community can be. The impacts of climate change on the biodiversity food security nexus must be more widely acknowledged, accepted, and integrated on a federal level, and a commitment to interdisciplinary, science-backed policies is absolutely required as the U.S. government continues to pursue food security as a national security solution.

The United States must continue to harness the power of partnerships and expertise to cultivate an enabling environment geared towards substantive change. Although the U.S. government may be a leader in the food security and resilience space, there still exists a poverty of data and information sharing between global actors. The United States does not have to tackle this global challenge alone. For example,
FAO’s report helps fill a large data gap in linking food security to the conservation of our world’s natural resources and the UN General Assembly recently declared 2020-2030 the Decade on Ecosystem Restoration—nodding to the inherent linkage between biodiversity for food and agriculture and food security. India collects remote-sensing data on land use and infrastructure; China collects data to monitor tipping points in agriculture relating to water use, biodiversity, and ecosystem services. However, lack of harmonized data, especially publicly reported data, poses a significant challenge as partners attempt to quantify and assess the ultimate impact of biodiversity loss on food and nutrition security. International organizations, governments, and implementing partners will be each other’s biggest allies in compiling data libraries to create and implement programs that will preserve and regenerate biodiversity for food and agriculture. USAID’s Bureau for Food Security has the opportunity to build off this strong foundation and work alongside a well-established host of implementing partners and thought leaders to educate and organize global community on the need to quickly diversify subsistence agriculture and adapt to new, biodiversity-friendly farming conditions. Rather than let the opportunity grow stale, USAID can pioneer national models for biodiversity for food and nutrition and can lead by example on U.S. soil as well as in Feed the Future partner countries.

_Elevate tracking and reporting mechanisms for lessons learned and best practices._
Under threat of aid being withdrawn from countries that are suffering from climate-change induced challenges, it is imperative that existing U.S. programs working on increasing food security and bolstering biodiversity are tracking and reporting progress. If managed sustainably, agriculture can contribute to vital ecosystem functions and biodiversity, but tracking progress and metrics is the only way to confirm and prove this result. In Washington D.C., where reporting means funding, these numbers matter. Biodiversity for food and agriculture is highly dependent on factors such as water availability and soil quality, though these variables, among others, must be meticulously assessed through context-specific research and surveys. Although there are programs and organizations such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and Bioversity International that are involved in substantial qualitative and quantitative research, this data is underutilized if it cannot be effectively communicated to policymakers and connected to well-funded programming. USAID has experience in context specific implementation and grant administration through cross-sector initiatives, such as Feed the Future, and this experience should be top of mind when approaching new challenges and paths less traveled. This unique position of power gives USAID the perspective to apply these lessons learned to an integrated Global Biodiversity and Food Security Strategy.

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