

# INTEGRATING CLIMATE CHANGE INTO DEVELOPMENT



NOVEMBER 2008





## A Complex Challenge

Climate change is one of the great global challenges of our time, affecting each and every nation. Melting glaciers are changing water supply patterns, with random floods in the near term leading to water shortages for downstream communities. Rising sea levels will increase storm damages and could inundate Small Island Developing States. Changes in rainfall patterns and amounts will aggravate water and food insecurity in Africa. These are just some of the impacts of climate change that scientists expect to take place in the developing world. Moreover, when one considers that three-quarters of the world's poorest citizens, those living on less than \$2 per day, are dependent on the environment for a significant part of their daily livelihoods, climate change presents a serious, multifaceted development challenge.

## Multiple Solutions

USAID sees climate change and development as inextricably linked. Since 1991, USAID's Global Climate Change Program has implemented "win-win" solutions that provide climate-related benefits while meeting sustainable development objectives. These solutions include:

- reducing growth in greenhouse gas (GHG) emissions through clean energy
- reducing deforestation and improving land management
- strengthening the ability of developing and transition countries to respond to the challenges posed by climate-related impacts and risks





## Addressing Climate Change by Reducing the Growth in Greenhouse Gas Emissions

In the developing world, 1.6 billion people lack access to modern energy services such as electricity, more than 2 billion people rely on traditional fuels for cooking, and energy demand is expected to increase by more than 50 percent by 2020. As energy consumption grows, greenhouse gas emissions will grow as well. There is broad international consensus that climate change is best addressed as part of an integrated agenda that promotes economic growth, advances energy security, reduces pollution, and eradicates poverty – as well as mitigates greenhouse gas emissions. Adoption of modern energy technologies can enable new opportunities for competition, choice, and accountability. However, energy is a capital and information intensive business, and adoption of technology can only be accomplished as part of a broader effort to improve governance, regulation, and management of service providers in developing countries.

To minimize their associated growth in greenhouse gas emissions while helping countries develop their

economies, USAID targets climate friendly interventions in the energy sector through investments in the energy, industry, and urban areas. For example, in Mexico, USAID has been a leader in clean energy development efforts, including technology transfer, for over 15 years. USAID's energy program has catalyzed sustainable efforts, with pilots replicated at a larger scale by Mexican institutions, which serve as models for other international organizations. Small-scale renewable energy applications, including solar and wind water pumps for off-grid farm use, have been actively promoted through USAID. Private sector companies have been trained to design and install better energy systems and to provide better maintenance services.

USAID's approach to emissions reduction is to develop markets in developing countries that enable the commercially sustainable transfer of clean technology. Strengthening markets will enable technologies to take root where the market conditions are favorable, thus ensuring economic sustainability. Technologies

will be transferred through private investment where there is economic opportunity as evident in the form of effective legal/regulatory frameworks, functioning commercial markets, and prices that cover the use of service.

USAID also adopts a holistic approach, focusing on the policy and regulatory framework, furthering sector and commercial reforms, institutional development, innovative business and financing modalities, public-private partnerships, and training. In Brazil, USAID's "Productive Energy" (or Energia Productiva) Program focused on the use of appropriate renewable and solar energy systems to facilitate community economic development. USAID supported a consortium of eight non-governmental partners, which promoted the use of sustainable and clean energy technologies in North and Northeast Brazil. Training initiatives and information dissemination reached more than 60,000 beneficiaries, while direct income-generating and improved quality-of-life interventions reached over 8,000 people.





## ECO-Asia Clean Development and Climate Program

As the world's most populous region, Asia continues to experience unprecedented rates of economic growth. As a result, the region's energy, industrial, forestry, agricultural, and transport sectors must undergo significant transformation to reduce greenhouse gas emissions if the international community is realistically expected to reach emissions stabilization in the coming decades. Recognizing these challenges and opportunities, USAID's Regional Development Mission for Asia (RDM/A) launched the Environmental Cooperation-Asia Clean Development and Climate Program (ECO-Asia CDCP), which seeks to promote market transformation for increased investment in clean energy technologies and practices that mitigate greenhouse gas emissions, while promoting improved economic productivity, air quality, and energy security. ECO-Asia CDCP works in China, Indonesia, Philippines, Thailand, and Vietnam, as well as in India in four primary areas:

- Improving the efficiency of coal power generation through cleaner coal technology and practices
- Increasing the use of high quality energy efficient lighting by harmonizing product quality and testing standards
- Facilitating increased financing for clean energy by promoting international best practices in energy efficiency procurements
- Regional knowledge sharing to build capacity and replicate best practices





## Addressing Climate Change by Reducing Deforestation and Improving Land Management

### Congo Basin Forest Partnership

The Congo Basin Forest Partnership (CBFP), which includes more than 35 governments, international organizations, private sector and civil society representatives, is working to strengthen the sustainable management of the world's second largest tropical forest. The partnership promotes economic development, poverty alleviation, and improved local governance through natural resource management across 13 landscapes in six Central African countries. USAID has invested over \$100 million since 2002 to targeted conservation programs as part of the Congo Basin Forest Partnership.

Approximately 30 percent of the Earth's land surface is covered by forests, which provide critical ecosystem goods and services, including food, fodder, medicines, water, shelter, nutrient cycling, and cultural and recreational value. In addition, forests also store carbon, provide habitat for a wide range of species, and help alleviate land degradation and desertification. The rapid destruction of tropical forests is of great concern to many people globally. Slash-and-burn agriculture, forest clearing for cattle ranchers and new settlements, and unsustainable logging practices all contribute to the challenge of climate change. Yet, forests are profoundly affected by climate change along with development pressures, such as increasing damage to forest health caused by proliferation of fire, pests, and diseases. Moreover, climate change has the potential to significantly undermine efforts at addressing future food security and the sustainable management

of agricultural land through higher temperatures, more frequent and more severe extreme events, and changes in the distribution and timing of rainfall.

Some 20 percent of global greenhouse gas emissions come from tropical deforestation, and its reduction represents a significant mitigation opportunity in addition to the multiple benefits from conserving tropical forests. As part of its broader economic development goals, USAID seeks to reduce deforestation, increase sequestration, and enhance sustainable forest management, all of which help to mitigate climate change. These programs also help local communities to be resilient to climate variability and change, while providing for sustainable livelihoods.

Indonesia's forests rank among the largest and most biologically diverse in the world. Deforestation is the country's largest source of emissions,





amounting to five times its emissions from non-forestry sources. Through collaborative efforts, USAID is working with Indonesia to provide technical, scientific, and financial assistance to help the country reduce deforestation and promote sustainable forest management.

Similarly in Russia, USAID has helped the country combat illegal logging by improving sustainable forest management through economic growth, identifying forestry reform issues, and assisting with greater civil participation in the forestry sector. As a result, USAID's efforts contributed to the development of a new Forest Code in Russia.

On a global effort, USAID has invested in field research and web tool development to enable carbon accounting of results of the Agency's forest sector and soil conservation programs.

### Applying Space-Based Assets to Development Assistance

For a number of years, USAID and NASA have been collaborating on a project to develop tools that apply space-based observations to development assistance. SERVIR is a U.S. led high-tech regional satellite visualization and monitoring system for Central America that supports decision-making in the areas of climate change adaptation, environmental management, and early warning for disasters, among others, providing historical data, information on current environmental and weather conditions, forecasts, and future scenarios. In operation since 2005, SERVIR consists of a regional hub in Central America and a suite of web-based tools, providing public access to information products in a variety of formats, tailored to a range of decision makers, from scientists to the general public. Products available via SERVIR include a high resolution climate change scenario database, climate change maps indicating impacts on Central America's biodiversity, a fire/smoke mapping and warning system, red tide alerts, and weather alerts. The SERVIR regional hub has enabled the training and capacity building of hundreds of Central American scientists, technicians, and government employees. Based on the successful SERVIR program, the U.S. Government is developing regional hubs in Africa and beyond to apply remotely sensed information to help track and combat wildfires, improve land use and agricultural practices, address climate change in development, and help local officials respond faster to natural disasters.





## Addressing Climate Change by Increasing the Resiliency of Vulnerable Populations

### Famine Early Warning Systems Network

USAID and other U.S. Government agencies are collaborating with local, regional, and international partners to provide early-warning and vulnerability information on food security and malaria issues, including information relating to variability and changes in regional climate conditions. The Famine Early Warning Systems Network (FEWS NET) program aims to produce high-quality information for disaster prediction, and provides demand-driven information products that pinpoint and assess emerging or evolving food security problems. Program professionals in the United States and Africa monitor data and information – including remotely sensed as well as ground-based data on meteorological, crop, and rangeland conditions – for early indications of potential threats to food security.

Climate change creates both risks and opportunities worldwide. By understanding, planning for, and adapting to a changing climate, individuals and societies can take advantage of opportunities and reduce risks. Developing countries are already vulnerable to current climate variability; by increasing the resilience of economies to economic and environmental changes, we can better ensure an end to dependence on assistance. Well-governed societies with diverse, robust, and open economies are inherently more resilient and adaptable to changing economic, social, or environmental conditions, including those related to climate events.

USAID has broadened its climate change portfolio to include activities aimed at strengthening the ability of developing and transition countries to respond to the challenges posed by climate-related impacts and risks. USAID seeks to strengthen the capabilities of program managers, host-country institutions, project

implementers, and sectoral experts to assess relative vulnerabilities to climate change, and to evaluate and implement adaptation options for agriculture, water, forest, and coastal zone management projects within USAID's development assistance portfolio. Adapting to climate change requires a hierarchy of linked efforts. USAID is working to make Earth observation information readily applicable to development decisions, including creating innovative applications and appropriate tools to then communicate that information to stakeholders and decision makers. Adaptation actions will vary depending upon the sector and location, and can include activities ranging from improving the use of weather forecasts, to changing planting dates or seed varieties, to modifying water harvesting approaches or key infrastructure. USAID has developed several tools and programs to help assess adaptation options, and is leveraging efforts of other U.S. Government agencies.







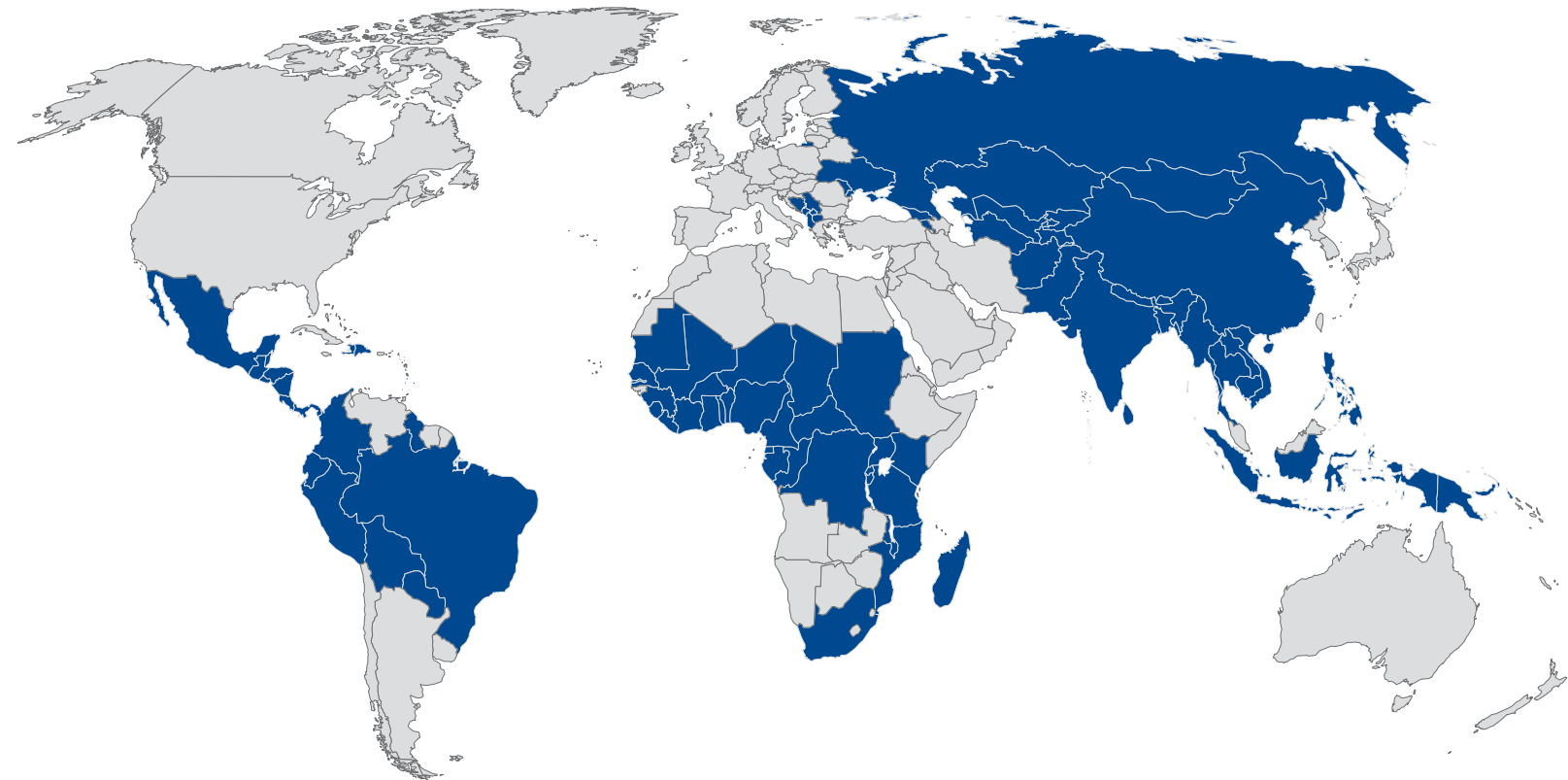
## Climate Change Adaptation Guidance Manual

To facilitate the process of adapting development projects, USAID developed a Climate Change Adaptation Guidance Manual to provide USAID staff, other donor organizations, and developing country planners, with the tools to understand how climate change may affect their projects. The manual draws on lessons learned in four pilot projects (Honduras, Mali, South Africa, and Thailand) that assessed impacts and vulnerability to climate variability and change, and developed adaptation implementation plans for urban and coastal flooding; municipal water; rainfed agriculture; and fisheries and agriculture. These pilot projects and the Guidance Manual are helping to improve the resilience and sustainability of USAID's development efforts by integrating climate change adaptation into project planning. The Adaptation Guidance Manual provides a stepwise process for evaluation of climate change impacts applicable in the field, including a primer on climate-related risks, a framework for determining if a specific project is vulnerable, and guidance on interventions to increase project resilience. Training courses for USAID staff and partners are being developed, and have been requested by other donors. The Adaptation Guidance Manual is also being applied independently for education, training, and project improvement.





## Where USAID Works to Address Climate Change



Afghanistan • Albania • Armenia • Asia Region • Bangladesh • Bolivia • Brazil • Caribbean Region • Cambodia • Central Africa Region • Central America Region • Central Asia Region • China • Democratic Republic of the Congo • Ecuador • El Salvador • Europe and Eurasia Region • Georgia • Guatemala • Haiti • Honduras • India • Indonesia • Kazakhstan • Kenya • Kosovo • Kyrgyz Republic • Latin America and Caribbean Region • Liberia • Macedonia • Madagascar • Malawi • Mexico • Moldova • Mongolia • Mozambique • Nepal • Nicaragua • Paraguay • Peru • Philippines • Regional Development Mission for Asia • Rwanda • Senegal • South Africa • South Asia Region • Sudan • Tajikistan • Tanzania • Uganda • Ukraine • West Africa Region





RICARDO BRIONES, PESCADORS DE SANCHE

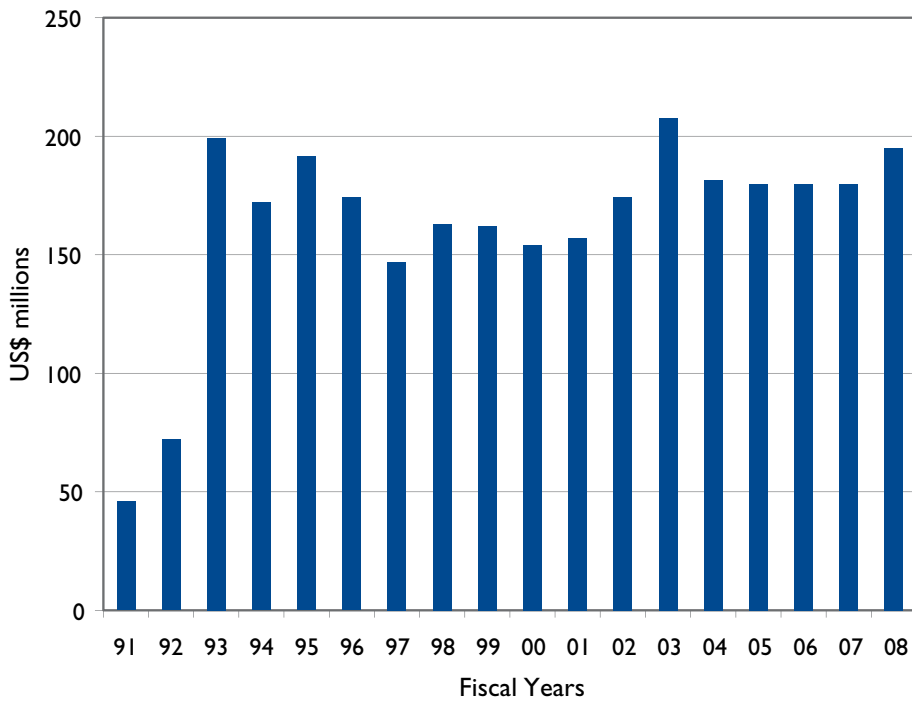


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## U.S. Commitments to Address Climate Change in Development Assistance



As the foreign assistance arm of the U.S. Government, USAID plays a key leadership role in delivering climate change related international assistance to developing and transition countries through the Agency's Global Climate Change Program. Active in over 40 developing and transition countries, USAID commits about \$195 million each year to support climate change related development activities.



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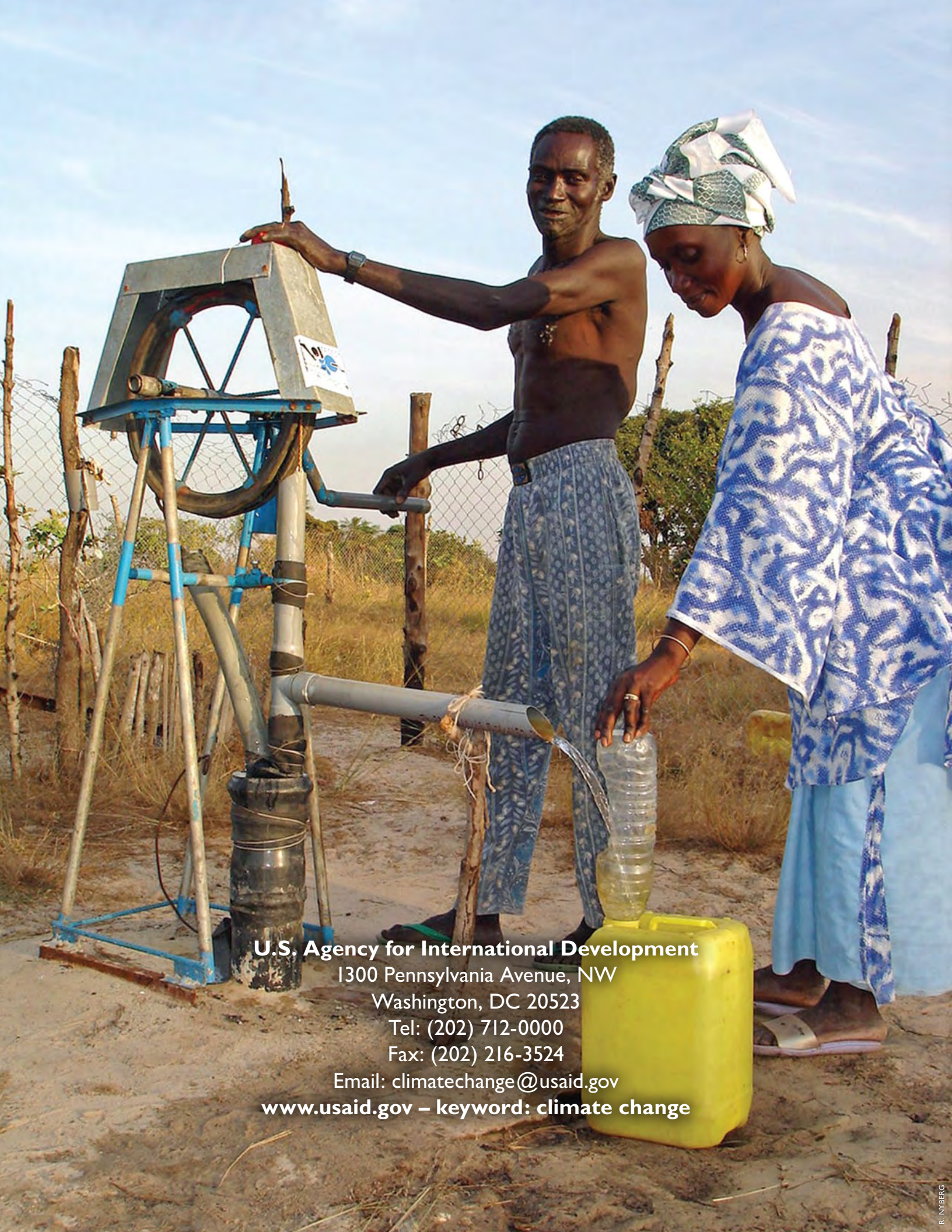
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