



## GLOBAL CLIMATE CHANGE

MAY 2006



*USAID has a vast array of environmental programs in the Philippines addressing multiple areas of concern. Through measures such as renewable energy and natural resources management, USAID has succeeded in implementing and supporting activities that help mitigate the effects of climate change and prevent future environmental degradation.*

**Background.** The Philippines hosts about 3,000 unique and endemic plants species and more than 500 of the world's 700 known coral species, but this uniqueness and diversity is under severe threat from population pressure, over-exploitation, and pollution. In addition, deforestation is a significant problem in the Philippines. In 1991 and 1992, land use changes accounted for almost 70% of carbon dioxide (CO<sub>2</sub>) emissions. The rate of growth in net greenhouse gas (GHG) emissions will be a critical issue in the Philippines, and therefore managing the country's natural resources wisely to protect their supply and quality and to maintain their diversity is critical for sustained economic growth. Also vital to this effort is improving efficiency and productivity in the energy sector. Due to inefficient generation and supply of electricity, the Philippines has one of the highest energy consumption rates in Asia, and the demand is growing exponentially. Over half of the Philippines' GHG emissions are attributed to the energy sector, which continues to be hampered by limited security due to dependence on imported fossil fuels and underdevelopment of indigenous energy sources. Consequently, thousands of communities still lack electricity, particularly in areas affected by conflict and severe poverty. The transportation sector, which now produces as much atmospheric carbon as the power sector, is another significant source of GHG emissions.

Other factors that contribute to these environmental problems are increasing urban and industrial wastes. Such wastes pollute water, air, soil, and coastal resources, and have severe social and environmental impacts. These impacts are reflected in increasing health care costs, a growing natural resources export sector, and reduced workforce productivity. These sources of excessive atmospheric pollution not only contribute to global warming but also discourage foreign investment.

**Sector-Specific Climate Change Activities.** To address these environmental challenges, which directly threaten the ability of the Philippines to develop in a climate-friendly and climate impact-resilient manner, USAID is implementing a variety of environmental programs. They include:

- Strengthening national and local government units and communities to address critical threats to resources
- Improving environmental policies
- Institution building through training and technical assistance
- Environmental advocacy through public awareness campaigns
- Improving the performance of the energy and transportation sectors

**Addressing Climate Change through Renewable Energy Sources.** Meeting the ever-growing population's rising demand for energy continues to challenge

Philippine policymakers for various reasons. The oil crisis of the 1970s showed how pervasive and critical the implications are of energy security to the economic life of nations. Reliance on conventional sources of energy in the past has also caused irreversible damage to the world's ecosystems. At both the international and local levels, mitigation of GHG emissions is gaining recognition as a useful component of energy policy that is consistent with sustainable development. Clean energy technologies are particularly important solutions to the GHG problem because of the opportunity they offer in addressing both the concern for environmental quality and their versatility for adoption in both off-grid and on-grid electrification.

A successful example of the renewable energy electrification program can be seen in the conflict-affected and poverty-stricken areas of the Autonomous Region in Muslim Mindanao (ARMM) through USAID's partnership with the government and the private sector (Mirant Philippines) under the Alliance for Mindanao Off-Grid Renewable Energy Project (AMORE). AMORE has now installed electrical renewable energy systems in more than 227 villages, avoiding almost 2,000 tons of CO<sub>2</sub> emissions. The program also manages a 50-hectare watershed area to ensure the regular flow of water for the micro hydro facility. Renewable sources of energy, as demonstrated through the AMORE project, will be utilized to electrify more remote rural communities in ARMM areas. In addition to the energy benefits of this project, AMORE also promotes peace and economic growth in some of the poorest areas of the country.

Energy efficiency was the focus of USAID's Watergy Program. The program assisted select water districts in developing sustainable measures to reduce the energy requirements related to water delivery to their consumers. Energy audits were conducted by the Alliance to Save Energy (ASE) at the Metro Iloilo Water District (MIWD) in April 2004 and at the Metropolitan Cebu Water District (MCWD) in June 2004. In 2005, ASE continued to monitor the implementation of improvement measures to increase the water and energy efficiencies of the two districts. With ASE's support, the districts have updated old equipment, as well as considered long-term improvements which could lead to potential savings of 613,958 kWh/yr for MIWD and 4,371,487 kWh/yr for MCWD.

In 2005, USAID instituted the Sustainable Energy Development Program which assists the Philippine government in developing and expanding the use of clean and indigenous fuels for transport and power. Support has been extended for the development of such fuels including natural gas, coco-biodiesel and fuel ethanol, as well as renewable energy from solar, wind, geothermal and hydro. The project displaces conventional fuel used for transport and spurs development of renewable, climate friendly energy sources for power such as wind energy. Economic growth and other

**USAID's partners in climate change activities in Philippines include\*:**

- Winrock International
- Alliance to Save Energy (ASE)
- Metro Iloilo Water District (MIWD)
- Metropolitan Cebu Water District (MCWD)
- The Autonomous Region in Muslim Mindanao
- Mirant Philippines
- Development Alternatives, Inc. (DAI)
- PA Consulting
- klima Climate Change Center
- US Department of Energy (USDoE)
- Philippines Department of Energy

\* Because partners change as new activities arise, this list of partners is not comprehensive.

environmental benefits are envisioned with the development of indigenous fuel sources for the Philippines, particularly coco-biodiesel. Over 3.5 million coconut farmers located in conflict affected areas will be given opportunities to identify markets for their products. The distribution and retail side will also create jobs to market alternative vehicle fuels. Local government units, transport groups and other stakeholders play important roles in the development and use of alternative fuels. The project also collaborated with the US Department of Energy's (USDoE) Clean Cities program and the Fuels for Life Movement, which builds coalitions among local stakeholders and the private sector to promote and expand the use of alternative fuels in project sites.

The increased use of clean and indigenous fuels such as natural gas and renewable energy will provide a healthier energy supply mix that will reduce the country's dependence on imported fuel, which is estimated to cost \$700 million a year.

**Land Use.** In 2004, the Environmental Governance (EcoGov) project of USAID assisted 22 local government units (LGUs), many of which were located in conflict-affected areas in Mindanao, Southern Philippines, to complete their forest use plans. These plans included measures to manage and protect approximately 270,000 hectares of existing forest cover and promote public and private investments to further encourage protection and conservation initiatives. Several of these LGUs have initiated forest protection activities to control illegal logging, as well as development of open access and denuded areas to increase forest cover. The project also assisted seven LGUs in integrated coastal resources management planning that included measures to manage mangrove coastal zones properly.

The EcoGov project also worked on a number of policy issues. In particular, it assisted the government of the Philippines in drafting a presidential order on sustainable forest management, later signed by President Macapagal-Arroyo, which called for a holistic, watershed- and ecosystems-based management approach for managing the country's forests. EcoGov also provided technical assistance to representatives of the Regional Legislative Assembly of the Autonomous Region in Muslim Mindanao to draft and hold community-level consultations on a regional sustainable forest management law which was passed in March 2004. The law incorporates provisions respecting Shariah and Adat laws (customary laws), as well as provides for a decentralized, devolved and deregulated framework in protecting, developing and managing the forests and forest lands in the region.

As part of the AMORE project, watershed initiatives resulted in the growth of approximately 17,500 seedlings covering 10 hectares of the 50 hectare

watershed. The project's civil society partners planted assorted seedlings covering more than 200 hectares in areas where they worked.

**Vulnerability and Adaptation.** Overall, the geography and socioeconomic characteristics of the Philippine archipelago require that attention be placed both on climate change mitigation and adaptation. Through the years, USAID has taken concrete steps, such as coastal zone management programs, to reduce long-term vulnerability. The klima Climate Change project focuses attention on these critical issues by disseminating basic information on global warming and its impacts on the Philippines and Asia. Through the klima Climate Change Center, stakeholders gain access to vital information on climate change research, mitigation and adaptation strategies, climate friendly technologies and policy issues. Specifically, the project aims to increase awareness of policy makers, implementers, private sector and academic institutions on potential impacts of climate change, to improve their capability to address realistic solutions and to facilitate linkages among stakeholders in the Philippines and neighboring countries.

Activities for 2005 included:

- Government, private sector and academic institution briefings and workshops on climate change impacts
- Community vulnerability and adaptation assessments
- Training of teachers
- Alternative transport and IEC activities that emphasized climate friendly approaches for the individual

Over 500 students, teachers, corporations and LGUs were trained under the program, resulting in increased awareness and understanding of the impacts from climate change. The training for teachers also included course development and integration of climate science into the curriculum. The klima Climate Change Center will continue to provide information and training on climate change impacts and mitigation. Several Memoranda of Agreement have been signed with private sector and media outfits to further the work on information and education.

For more information on the Philippines, visit  
USAID/Philippines' Mission Web site at:

<http://philippines.usaid.gov/>