

Climate Change

Making Sure That the Earth Will Continue to Be a Livable Place for Humans



Of the eight Millennium Development Goals (MDGs), relevant goals are shown in color.

Climate change has impacts on the basis of human life, including the ecosystem, society, and economies. It is a global challenge that poses an enormous threat to equitable and sustainable economic growth, poverty

reduction and human security. JICA incorporates climate change considerations into its projects and programs in various sectors and makes the most of its diverse aid schemes to meet the needs of each partner country.

● Overview of the Issue

Climate change manifests in various forms, including sea level rise, more frequent extreme weather and natural disasters, and changes in food production and water availability. Eventually it affects the entire basis of human life, including natural ecosystems, societies, and economies. These are the results of the rising mean temperature due to increasing emissions of greenhouse gases (GHGs) associated with anthropogenic activities such as fossil fuel use and deforestation, which then affect the global cycles of energy and materials such as water. Recent years have seen increasing reports of phenomena that are deemed to be affected by climate change from many parts of the world. These phenomena are expected to become more intense in the future.

Measures against climate change are largely divided into adaptation and mitigation measures. Adaptation measures are undertaken in such sectors as disaster risk reduction (DRR), water and sanitation, and agriculture to make societies more resilient to changes associated with climate change. Mitigation measures, on the other hand, are designed to reduce GHG emissions or increase GHG removal from the atmosphere through carbon sinks in such sectors as energy, transport, solid waste management, and forestry in order to promote low-carbon societies.

Both adaptation and mitigation measures are important to address climate change. In addition, these sectors are essential for sustainable development. Climate change measures in developing countries therefore need to be implemented together with efforts to address challenges for sustainable development.

● JICA Activities

1. Supporting the Efforts for Reduction of GHG Emissions

In recent years, GHG emissions from developing countries have been increasing rapidly. In order to minimize the negative impacts of climate change, it is essential that the ongoing efforts to reduce emissions of GHGs or “mitigation measures” involve not only developed countries but also developing countries.

For those developing countries faced with various issues such as poverty reduction, it is important to take an approach that both reduces GHG emissions and bears benefits such as improvements in livelihood and economic development.

JICA extends cooperation in development projects, including the introduction of renewable energy, promotion of energy saving, improvement of urban public transportation system, solid waste

management, forest management and support for afforestation. JICA also provides extensive support for policy and capacity development, such as development of national greenhouse gas inventories,¹ establishment of energy-saving laws and low-carbon urban development planning [→ see the Case Studies on pages 49, 55, 88, and 108].

2. To Protect People in Developing Countries from the Negative Impacts of Climate Change

Developing countries, and the poor in particular, are extremely vulnerable to the impacts of climate change.

JICA provides assistance to adaptation measures in accordance with each country’s needs. These include developing capacity in protection against storm and flood damage, construction of water supply facilities, development and appropriate management of water resources, ecosystem protection, promoting irrigated agriculture and dissemination of drought-resistant agricultural crops [→ see the Case Studies on pages 31 and 51]. Such assistance is expected to become increasingly important in the coming years.

3. Climate Change Measures That Accommodate Differences in Regions and Development Stages

Climate change measures need to accommodate differences among regions, most notably small island states and Africa, and the development stages of partner countries (low-income, middle-income, etc.).

Africa is considered highly vulnerable to climate change and particularly prone to drought. Small island states face extremely high risks associated with climate change in terms of sea level rise, coastal erosion and inundation, and water scarcity; nevertheless they often lack land, human, financial, and other resources to adapt to them. In other words, they are in particular need of international assistance. Although small island states are not large emitters of GHGs, they have strong needs for renewable energy resources and energy saving technologies, since they depend on costly imported fossil fuels for most of their energy needs.

Emerging economies in Asia require support for promoting low-carbon growth so that they can achieve economic development while reducing GHG emissions as they emit rapidly increasing amounts of GHGs associated with their remarkable

1. An inventory of the estimated amounts of GHGs a country emits or removes in one year.

economic development. From the perspective of energy security, it is also important to support them in diversifying their energy sources, including renewable sources.

JICA offers comprehensive options on climate change measures with a flexible combination of various schemes to accommodate the realities of these regions and countries.

In northern Kenya, for example, JICA is supporting local pastoralist communities to manage water resources more appropriately and improve the market chain of livestock in order to enhance their resilience to droughts [→ see the Case Study below]. JICA assists small island states on issues such as region-wide DRR and solar power generation in the Caribbean, the Pacific, and elsewhere [→ see the Case Study on page 104]. In Asian countries,

JICA supports the formulation of low-carbon growth plans, the introduction of renewable energy, and energy-saving efforts.

4. Concurrently Targeting Climate Change and Sustainable Development

By drawing on past experiences and achievements in supporting sustainable development, and reflecting on international discussions on climate change, JICA provides support for climate change measures in developing countries from policy-level support to field-level implementation of projects and research, while collaborating with both domestic and international stakeholders.

Case Study

Kenya: The Project for Enhancing Community Resilience against Drought in Northern Kenya

Building the Capacity of Pastoralist Communities to Cope with Droughts

JICA supports the development of an integrated model designed for pastoralist communities in northern Kenya to enhance their resilience to droughts.



Community members discuss drought risks and measures to address them in a seminar held in Marsabit County.



A total of 11 livestock water points have been constructed or improved. These JICA-made “oases” can supply water to many head of livestock even during the dry season or drought.

Community-Based Approach

The Horn of Africa, which includes northern Kenya, is hit by droughts or food shortages more every few years, as most of the region is arid or semi-arid, with little precipitation. The major drought of 2011 took a heavy toll on many parts of the region, where many people raise livestock for a living. The water and pasture deficiency resulted in the deaths of many animals, putting these people in a state of crisis.

Similar droughts are expected in the future and there are growing concerns that climate change will likely increase the intensity and frequency of droughts. To address such risks, local communities need to strengthen their resilience to droughts through medium- and long-term development efforts.

In this particular project, JICA works with the Kenyan government to encourage pastoralist communities in northern Kenya to consider DRR activities in accordance with the four pillars of the project: (1) sustainable natural resources management, (2) improvement of the livestock value chain, (3) livelihood diversification, and (4) capacity development of the government.

Under the project, a total of 40 wells and livestock water points have been constructed or improved, and water facilities are now under the management of local pastoralists.

The project also involves providing guidance on activities aimed at securing various sources of income in anticipation of droughts, conducting such activities on a trial basis, and strengthening local markets so that livestock are raised and sold more effectively. The idea is to make the lives of local nomads more resilient to droughts.

Through these measures, the project aims to enhance community resilience to droughts over the medium- to long term, thereby improving the living conditions for people in northern Kenya.