

# Cashing in on the links between Climate Change and Land Degradation

The Global Mechanism's Strategic Programme on Climate Change  
and Compensation for Environmental Services (CCES)



## Context

Worldwide, countries, multilateral institutions and the private sector are recognizing that climate change is a common, long-term environmental problem. Only through global action with broad participation, can it be addressed.

Climate change is a serious threat, particularly to the developing world where it is a major obstacle to poverty reduction. Developing regions are at a geographical disadvantage. On average, they are already warmer than developed regions, often suffer high rainfall variability and have less resilient ecosystems.

Moreover, these regions depend predominantly on agriculture - the most climate-sensitive of all economic sectors. Low incomes, inadequate healthcare, low-quality public services, and other factors that increase vulnerability, make adaptation to climate change particularly difficult. Further warming will therefore inflict high costs and yield few benefits for poor countries.

Donors and multilateral institutions have been called upon to mainstream and support climate mitigation and adaptation measures as part of their assistance to developing countries. This call found political expression at the last two G8 summits and was recently confirmed by scientific evidence in a report of the International Panel on Climate Change (IPCC). This panel is an international scientific body that informs the global community on the potential impacts of climate change. In the same vein, the 2006 *Stern Report on the Economics of Climate Change* calls for global action to mitigate climate change, in view of the risks of major disruption to economic and social activity.

- **Mitigation:** the objective is to stabilize GHG concentrations in the atmosphere at a level that prevents further human-induced global warming. The Kyoto Protocol introduces two project-based mechanisms that industrialized countries can use to meet their emission reduction targets, through the purchase of carbon credits from developing countries or economies in transition.
- **Adaptation:** describes actions taken to help communities and ecosystems cope with changing climate conditions, such as the construction of flood walls to protect property from stronger storms and heavier precipitation, or the planting of agricultural crops and trees more suited to warmer temperatures and drier soil conditions. Socio-economic and ecological systems display varying degrees of resilience and differing capacities to cope with climate change. Vulnerable systems are those that will suffer changes that go beyond their adaptive capacity. Sustainable land management (SLM) is one of the measures that can enhance their adaptive capacity.
- **Reducing Emissions from Deforestation and Degradation (REDD):** also known as 'avoided deforestation', REDD refers to the reduction of emissions derived from the conversion and degradation of forests, which currently account for approximately 20% of global GHG emissions. In 2005, a call was made to include REDD in future climate regimes. The proposal suggests creating a mechanism for compensating countries that reduce their deforestation rates, and thus their GHG emissions.

## Synergies between the Rio Conventions

The three so-called 'Rio Conventions' – the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD), and the Convention for Biological Diversity (CBD) – are all relevant to the prevention and control of land degradation. There are strong synergies between the efforts to tackle all three environmental problems. The complementary nature of the three conventions underscores the need to take a holistic, coordinated approach.

**The objective of the UNFCCC is to stabilize GHG concentrations in the atmosphere at a level that prevents further human-induced global warming.**

**The goal of the UNCCD is to combat desertification, which is likely to be augmented by climate change in affected countries, and to promote sustainable land management (SLM).**

**The CBD aims to conserve biological diversity, encourage the sustainable use of its components and promote the equitable sharing of benefits from the use of genetic resources.**

While climatic changes threaten marginal lands by increasing the risk of desertification, land degradation - particularly deforestation - is a major contributor to increased atmospheric GHG concentrations that are responsible for human-induced climate change. As vegetation cover and soils are denuded and ecosystems degraded or fragmented, land degradation also has an adverse impact on biological diversity.

Many of the implementing programmes and regulations under the umbrella of the above-mentioned multilateral environmental agreements (MEAs) recognize the relationship between climate change, land degradation and biodiversity. Preserving biological diversity is an essential part of SLM practices that aim to combat land degradation and desertification.

Adaptation to climate change is another field of activity within the mandate of the UNFCCC. Many adaptation measures in the rural, agricultural and forestry sectors provide synergies with the UNCCD and the CBD. The UNFCCC calls specifically for integrated management plans for water resources and agriculture and for the protection and rehabilitation of areas affected by drought and desertification - particularly in Africa. Response measures are also required for countries with areas that are arid, semi-arid, forested and/or liable to forest degradation.

The Conferences of the Parties (COPs) to all three conventions have officially recognized that their mandates are interlinked and that synergies are important for achieving their objectives and ensuring that resources are used efficiently.

The GM's Strategic Programme on Climate Change and Compensation for Environmental Services (CCES) seeks to promote an overall increase in financing also for UNCCD implementation by promoting synergistic approaches that address the objectives of the UNFCCC and the CBD.

### **Relevance for UNCCD financing strategies**

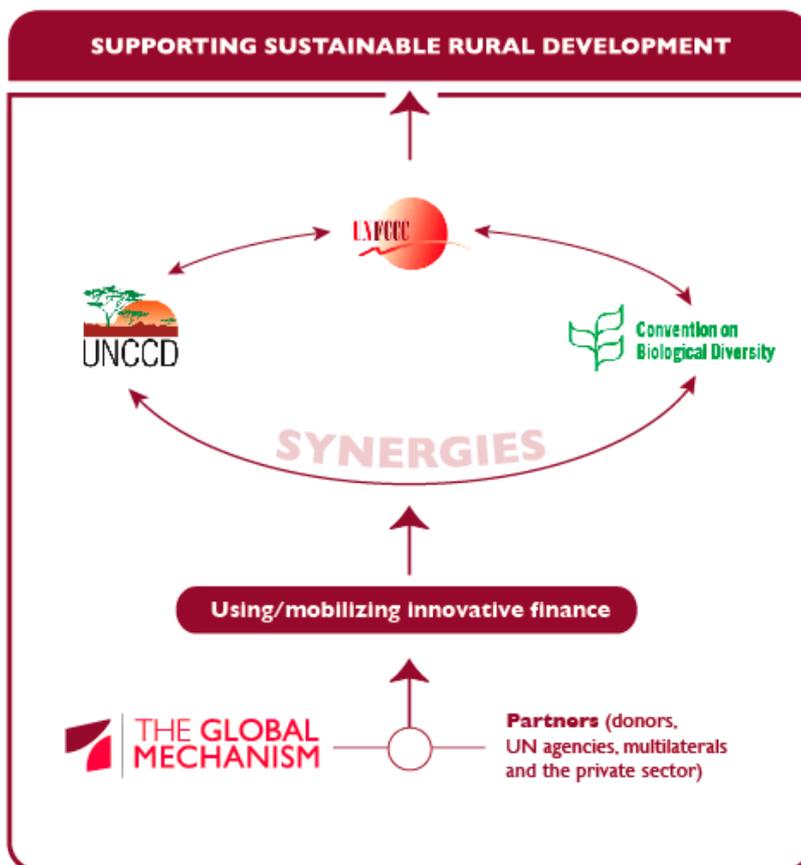
The instruments and mechanisms available under the UNFCCC provide opportunities for mobilizing financial resources that directly benefit UNCCD implementation. Particularly relevant are:

- opportunities to generate carbon credits in the land-use, rural and agricultural sectors through the mechanisms of the Kyoto Protocol;
- voluntary carbon markets that offer emerging opportunities to gain carbon credits through avoided deforestation/conservation activities; and
- financing from climate change adaptation programmes and funds.

Opportunities also exist to complement investments through the development of compensation mechanisms related to other environmental services, such as watershed protection and biodiversity conservation. The aim is to promote more synergistic implementation of the MEAs.

## The GM's response

In response to decisions of the Conference of the Parties (COP) to the UNCCD and recommendations from previous GM evaluations to investigate the opportunities for resource mobilization from innovative sources of funding, the GM has established a Strategic Programme on Climate Change and Compensation for Environmental Services (CCES). The Programme now has three years' experience of facilitating access to innovative financing from the public and private sectors to support UNCCD implementation at the national and regional levels. The GM and its partners are assisting UNCCD developing country Parties in accessing funding from CCES mechanisms, as an incentive for SLM and a contribution to wealth creation.



## Financial mechanisms and opportunities

How can SLM projects supporting the UNCCD benefit from climate change-related financial sources? How can they enhance synergies with the other Conventions? What kind of mechanisms and opportunities exist? Which are the most relevant for the UNCCD?

The Kyoto Protocol approved the use of three flexible mechanisms to reach reduced GHG emissions targets:

- **Emissions trading** allows for the international transfer of national emission rights between industrialized countries. Under the Kyoto Protocol, there are additional national and international trading schemes, such as the European Union's (EU's) Emissions Trading Scheme (ETS).
- **Joint Implementation (JI)** is based on the creation of Emission Reduction Units (ERUs) through transnational investments between countries and/or companies from industrialized nations and economies in transition, in projects promoting clean energy and in land-use change activities.
- **The Clean Development Mechanism (CDM)** is an instrument under the Kyoto Protocol whereby industrialized countries with greenhouse gas reduction commitments can invest in emission-reducing projects in developing countries, as an alternative to emission reductions in their own countries, which is generally considered more costly. The CDM allows for Certified Emission Reduction (CER) credits in developing countries, regulated by the CDM Executive Board.

Carbon trading is the most advanced international environmental service payment scheme. It includes Kyoto compliance markets and other voluntary initiatives, markets and schemes for carbon credits.

To complement the commitments made under the Kyoto Protocol, parallel national and international mechanisms have emerged in the form of voluntary markets through which **Verified Emission Reductions (VERs)**, can be obtained via voluntary mechanisms and other approaches not based on emission targets. These schemes help organizations comply with reduction targets or contribute to climate change mitigation in compliance with corporate or local level policies.

**In terms of specific opportunities supporting UNCCD implementation, the following GHG mitigation services may generate carbon credits and revenues for the avoidance of land degradation and desertification:**

- **Carbon sequestration.** Afforestation, reforestation and restoration of degraded lands; agro-forestry; cropland and grazing management; and silviculture; promote increased carbon stocks in biomass and enhance soil carbon (e.g. through alternative tillage practices).
- **Carbon conservation.** By conserving biomass and soil carbon in protected areas, improving forest management practices (e.g. sustainable selective logging), enhancing fire protection, and promoting more effective use of prescribed burning both within forest and agricultural systems, carbon is conserved.
- **Carbon substitution.** Increased conversion of forest biomass into durable wood products to replace energy-intensive materials (e.g. steel), the sustainable use of biofuels, and greater use of harvesting waste as biofuel (e.g. sawdust), are effective methods of carbon substitution.
- **GHG reduction or avoidance.** Through bio-digestion (the decomposition of organic matter and animal waste) and other methane-based projects in the agricultural and rural sectors, and through energy-related projects that earmark financial resources (e.g. from carbon credits) to finance community or land-use management activities supporting UNCCD goals, GHG reduction or avoidance is achieved.

### Compensation for avoided deforestation

Compensation for avoided deforestation is already possible under voluntary schemes. It is also being negotiated under the UNFCCC with the ultimate aim of generating additional funding or creating a trading mechanism for REDD. Those developing SLM projects in which forest conservation could play a role, should therefore investigate the possibility of incorporating an avoided deforestation component into their project design and resource mobilization strategy.

### Adaptation funding

Three specific funds have been created to support the implementation of measures that facilitate vulnerability assessments and adaptation: the Least-Developed Countries Fund, and the Special Climate Change Fund, both managed by the Global Environment Facility (GEF); and the Adaptation Fund. The Adaptation Fund stands out for its support for developing countries in meeting the costs of adapting to the adverse effects of climate change. Measures to adapt social and economic systems to the changing climate need to be taken for all systems that are directly or indirectly affected by climate change.

Examples relevant to SLM include:

- **Agriculture and forestry.** In agriculture, climate change threatens the suitability and productivity of crops and livestock. In forestry, it jeopardizes wood and non-wood production. Concrete measures in these sectors often aim to combat soil erosion and desertification by promoting agro-forestry and preventing woodland destruction. In the context of forestry, adaptation focuses on enhancing natural regeneration in degraded forest lands, supporting reforestation, and promoting the adoption of sustainable forest harvesting and management approaches.

- **Natural resources and ecosystem services.** Climate change can intensify land erosion, especially in arid and semi-arid areas; alter the natural regeneration of forests; destroy and fragment habitats; harm wildlife and biodiversity; and have a detrimental impact on water resources. The identification, restoration, protection, recovery and linking of conservation areas play an important role in the in-situ protection of biodiversity. This can be combined with the ex-situ conservation of threatened plant and animal species. In many cases however, the continuing availability of sufficient quantities of high-quality ecosystem services can best be assured by working towards adaptation in other sectors, particularly forestry and agriculture.
  
- **Coastal zones.** Coastal zones are vulnerable to land loss from sea level rise and increased storm occurrence. Many large population centres are built along the coast. With productive capacities in jeopardy, there is a demand for measures to address sea level rise, salinization of farmland, and storm occurrence.

Special priority should be given to: least-developed countries; those with low-lying coastal areas vulnerable to flooding; small island states; countries with arid and semi-arid regions that are susceptible to drought and desertification; and those with fragile, mountainous ecosystems.

## **Biodiversity, watershed protection and other environmental services and markets**

Improved forest or land management, afforestation and reforestation, forest protection and related activities, are often included in payment agreements between water users and watershed managers. Payments or other forms of compensation are also used to reward the provision of biodiversity protection services.

The majority of watershed protection services and the related seller-buyer arrangements, normally take place at the local level, unless a trans-boundary scheme is involved. Such services include: water flow regulation; water quality maintenance; erosion and sedimentation control; and the reduction of land salinization.

Biodiversity protection services, to the contrary, bridge national borders and can be incorporated into international compensation schemes. Such services include: provision of habitat conditions; maintenance of ecosystem functionality; and conservation of genetic resources. Non-governmental organizations (NGOs) and public or private bodies purchase high-value habitat/land explicitly for biodiversity conservation. Access to species or habitats, and biodiversity conservation management practices are purchased. Rights can be traded under cap-and-trade regulations.

Of all the services, conserving or renewing soil fertility probably has the greatest direct impact on avoiding land degradation and restoring degraded areas. However, soil fertility or renewal activities are usually part of, or are a positive side-effect of activities related to watershed protection, carbon sequestration and biodiversity conservation. One of the oldest environmental services is providing landscape beauty. For a long time, land stewards have been paid by 'consumers' (i.e. tourists and tour operators) for providing access to beautiful landscapes.

## The GM's CCES Programme

### Mission

Through its strategic programme on CCES, the GM aims to facilitate access to new and additional financial resources for UNCCD implementation and related activities at the national and regional levels. This is achieved in collaboration with international and national partners from the public and private sectors.

The Programme provides technical and financial assistance for the identification, design, negotiation and implementation of CCES initiatives to promote SLM and contribute to wealth creation. This financial assistance is linked directly or indirectly to the implementation of SLM practices, through the provision of incentives for avoidance of harmful land management practices or through the implementation of sustainable practices indirectly financed by other non-land-use-based projects.

### Activities

The CCES Programme has been operational for three years. The first pilot project activities, which tested the suitability of the CDM for supporting UNCCD implementation, were launched in Latin America in 2004. Based on the lessons learned, the programme went global, initiating climate change mitigation and adaptation activities, and compensation for environmental services at the national and regional levels, in Africa, Asia and Latin America and the Caribbean.

Programme activities also include knowledge provision. This takes the form of information briefings, toolkits and workshops, policy advisory services to establish structures to utilize innovative environmental finance, and conceptual and strategic work to inform the political agenda of relevant international processes, with a view to mobilizing further resources from CCES financing options.

## Approach

The CCES Programme focuses on:

- developing and consolidating strategic approaches and methodological tools;
- generating and disseminating knowledge and information on innovative sources of finance;
- promoting mutually-beneficial, public–private partnerships with multiple stakeholders;
- facilitating through partnership the development of targeted CCES initiatives, by providing technical and/or financial assistance in GM priority areas in Africa, Asia and Latin America and the Caribbean; and
- contributing with partners to the convergence of the UNCCD and the UNFCCC policy dialogue, by developing conceptual arguments, particularly on issues related to the future of compensation measures for GHG mitigation, adaptation funding, carbon trading and other compensation mechanisms beyond 2012.

## Intervention and labelling criteria

The CCES Programme has established a set of intervention criteria to ensure that the activities it promotes and facilitates eventually support UNCCD implementation. It has also developed a UNCCD 'label' for projects and activities generated by the initiatives it supports. This UNCCD label is applied to all projects that support at least two (the UNCCD and the UNFCCC) if not all three (with the CBD) Rio Conventions, through the generation of carbon credits and other environmental services. This can be done without project developers incurring additional costs. Labelling also facilitates discussions with the private sector and other potential partners.

### **Facilitating of market access**

In collaboration with GM partners, the CCES Programme facilitates the screening of projects stemming from the programme itself or proposed by third parties. It facilitates market access (e.g. the sale of credits) by bundling project activities and initiating and supporting negotiations with public and private buyers.

### **Intervention areas**

The CCES Programme operates in the land use, forestry, agriculture and rural sectors, and covers all development-related interventions where a link to the UNCCD can be made. A distinction must be made between support for the development of project activities on the ground and country-wide initiatives that introduce carbon finance and adaptation as new finance mechanisms to support UNCCD implementation. Areas of intervention related to project activities (CDM/JI, voluntary carbon projects, adaptation and ecosystem services projects), are:

#### **Forestry-related**

- afforestation/reforestation;
- avoided deforestation;
- sustainable forest/land management; and
- agro-forestry and silvopastoral systems.

#### **Agricultural and rural sectors**

- cropland and grazing land management; and
- biogas and other methane-based projects in the agricultural sector.

#### **Biodiversity, watershed and soil protection**

- biodiversity conservation; and
- watershed protection and management.

#### **Energy-related**

- (small) hydro projects (possibly combined with forestry activities as watershed protection);
- biofuel, bio-energy projects contributing to SLM;
- other (renewable) energy projects; and
- other/new project types that are compliant with the intervention criteria.

## **Programme outlook**

### **Identification and facilitation of other national and regional climate change and Compensation for Environmental Services (CES) funding and investment opportunities**

The CCES Programme will continue to identify countries and regions where it can assist in exploring carbon finance and other climate change-related funding or investment opportunities through, for example, the CDM/JI and adaptation or compensation for avoided deforestation mechanisms. The programme will also identify CES activities related to biodiversity and watershed protection services.

### **UNCCD-relevant climate change project activities in the agricultural and rural sectors**

The Programme's first pilot experiences and initiatives, particularly those on carbon finance, focused on CDM projects in the fields of land-use change and forestry. As the Programme developed, it became clear that other project types in the agricultural and rural sectors could serve the dual purpose of mitigating/adapting to climate change and contributing to UNCCD implementation. Further analysis of specific project types within these sectors and of how projects should be designed to benefit the UNCCD, is required. Likewise, opportunities will continue be identified through adaptation mechanisms, particularly through the KP's Adaptation Fund, once the operational modalities and guidelines have been finalized and approved.

### **Strategic and conceptual work on market development and access**

To leverage more funding for climate change and other CES-related initiatives, strategic and conceptual work on market development and access is needed in areas such as: the underlying causes of land degradation; how CES can be used effectively, particularly in Africa; the development of quantifiable indicators for the valuation of biodiversity loss; and the future potential for carbon trading and CES in the agricultural/rural sectors. In particular, Africa still needs to acquire the basic capacities for engaging effectively in carbon trading. Therefore, CES and relevant tools must be developed to empower African stakeholders to participate in these markets.

### **Contributing to policy dialogue on the future of climate change funding and environmental services markets**

Taking a longer-term perspective on the use of financing for climate change adaptation and mitigation, there is a need to examine such issues as the future of the CDM, the overall frameworks and strategies for future GHG mitigation, and related trading schemes, including voluntary ones. Special emphasis will be placed on the international dialogue on adaptation measures and funding options under the framework of the UNFCCC post-2012 negotiations.

The GM, in collaboration with relevant partners, will seek to contribute to the convergence of the policy dialogues of both the UNCCD and the UNFCCC. This will be done with the premise of promoting synergistic implementation approaches by developing conceptual arguments on how to upscale financing, particularly through financial mechanisms related to adaptation, avoided deforestation and mitigation. Emerging compensation mechanisms under the CBD will be followed closely.

## **Conclusion**

While not a panacea for alleviating rural poverty, financial mechanisms related to CCES – when inserted into broader financing strategies geared towards expanding the whole basket of assets (natural, social-political, human, physical, and financial) in the hands of poor communities – can help improve rural livelihoods, while advancing environmental goals.

The GM will continue its leading innovative role by embedding CCES into the array of financial mechanisms and instruments identified in national financing strategies for UNCCD implementation. Together with its partners, the GM will contribute to mobilizing innovative financing through SLM-related programmes and projects that promote synergistic implementation approaches as a result of the inherent linkages between climate change, land degradation and biodiversity protection.

To learn more about this programme,  
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# GLOSSARY

**Cap-and-trade system:** Cap-and-trade systems draw on the power of the marketplace to reduce emissions in a cost-effective manner by creating a financial incentive for emission reductions by assigning a cost to polluting. First, an environmental regulator establishes a cap that limits emissions from a designated group of polluters to a level lower than their current emissions. The emissions allowed under the new cap are then divided up into individual permits - usually equal to one ton of pollution - that represent the right to emit that amount. Companies are free to buy and sell permits in order to continue operating in the most profitable manner. A key advantage of a cap-and-trade system is that it gives companies flexibility in the manner in which they achieve their emissions targets.

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**Greenhouse gases (GHGs):** The Kyoto Protocol defines 6 gases as being responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Less prevalent – but very powerful – greenhouse gases are hydrofluorcarbons (HFCs), perfluorcarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>).

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**Carbon credits:** Carbon credit is the generic term for an allowance to emit one metric tonne of carbon dioxide equivalent (tCO<sub>2</sub>e) or the achieved reduction or removal of one tCO<sub>2</sub>e. Carbon credits are allocated to countries in the form of Assigned Amount Units (AAUs) under the Kyoto Protocol and surpluses can be traded among Parties to the Protocol and entities within signatory countries, can be allocated by governments to their industries and traded among public or private entities (EU Allowances), or can also be acquired from various mandatory or voluntary emission trading schemes.

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**Carbon sequestration:** Carbon sequestration is the removal and storage of carbon from the atmosphere in carbon sinks (such as oceans, forests or soils) through physical or biological processes. Forests sequester carbon by removing carbon dioxide from the atmosphere through photosynthesis.

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**Climate change:** Climate change refers to the variation in the Earth's global climate or in regional climates over time. These changes can be caused by processes internal to the Earth, external forces (e.g. variations in sunlight intensity) or, more recently, by human activities. In the context of environmental policy, the term often refers only to changes in modern climate, including the rise in average surface temperature known as global warming. In some cases, the term is also used with a presumption of human causation, as in the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC uses 'climate variability' for non-human caused variations.

**Emission Reduction Units:** Emission Reduction Unit (ERU) is the name for emission reductions or emission removals from JI projects. One ERU is equal to one metric ton of CO<sub>2</sub> equivalent.

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**European Union's (EU's) Emissions Trading Scheme (ETS):** In January 2005, the European Union Greenhouse Gas Emission Trading Scheme (EU ETS) commenced operations as the largest multi-country, multi-sector greenhouse gas emission trading scheme world-wide. The EU ETS is one of the policies being introduced across Europe to tackle emissions of carbon dioxide and other greenhouse gases and combat the serious threat of climate change. The scheme works on a cap-and-trade basis whereby EU Member State governments are required to set an emission cap for all installations covered by the scheme.

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**Kyoto Protocol (KP):** The Kyoto Protocol to the United Nations Framework Convention on Climate Change that entered into force on 16 February 2005, is an amendment to the international treaty on climate change, assigning mandatory emission limitations for the reduction of greenhouse gas emissions to the signatory nations. The objective of the Protocol is to stabilize greenhouse gas concentrations in the atmosphere at a level that prevents dangerous interference with the climate system. As of December 2006, a total of 169 countries and other governmental entities had ratified the Protocol.

