

SCIENTIFIC INFORMATION IN NATIONAL COMMUNICATIONS FROM PARTIES TO THE UNFCCC

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Scientific evidence of the far reaching effect of man on the atmosphere was first obtained when Charles Keeling began measuring carbon dioxide in a systematic manner on Mauna Loa in 1958. But it was not until the late 1980s that the Intergovernmental Panel on Climate Change (IPCC) undertook the first comprehensive review of the scientific literature on climate change. Its first report confirmed that the threat of climate change was real and this led to the adoption of General Assembly Resolution 45/212 which formally launched negotiations leading to what became the United Nations Framework Convention on Climate Change. However, even as they ratified the Convention, governments knew from additional reports by the IPCC that its provisions would not be the complete answer, and a new round of negotiations was undertaken, leading to the adoption of the Kyoto Protocol.

To monitor progress in meeting the objectives of the Convention, all Parties must periodically report information on national greenhouse gas (GHG) inventories and, to varying extents, information on emission projections, policies and measures, vulnerability and adaptation to climate change, climate-related research and observation, and public awareness. For reporting and other purposes, the Convention divides countries into three main groups: Annex I (developed), Annex II (developed minus countries with economies in transition (EIT countries)) and non-Annex I (developing) countries. Currently, all Annex I Parties are required to prepare a GHG inventory every year and a national communication every 3 to 4 years. The third national communications of most Annex I Parties were submitted in 2001–2003. Most non-Annex I Parties have provided only initial national communications and GHG inventories. The following sections provide information based mainly on information submitted by Parties.

Trends in greenhouse gas emissions

The total aggregated GHG emissions of Annex I Parties (excluding land-use change and forestry) decreased by 3 per cent from 1990 to 2000. Thus Annex I Parties have jointly attained the aim of Article 4.2 of the Convention – to return their 2000 emissions to 1990 levels, although the extent to which Annex II Parties succeeded in altering the general upward trend in GHG emissions varied widely. The decrease among Annex I Parties is mainly due to a 37 per cent decline in emissions from EIT Parties and is associated with the steep economic decline caused by their move to market economies. Emissions from Annex II Parties increased by 8 per cent. For individual countries, changes in aggregated GHG emissions varied widely: from a decrease of 66 per cent to an increase of 36 per cent. In the same period, global emissions of carbon dioxide increased by about 13 per cent and non-Annex I CO₂ emissions by 36 per cent.

In several Annex II Parties (the European Community, Finland, France, Germany, Sweden, Switzerland and the United Kingdom), GHG emissions (excluding LUCF) were below their 1990 levels in 2000. In 12 other Annex II Parties and Slovenia, emission levels in 2000 were higher than those in 1990. The growth in emissions from some of these Parties slowed or even stabilized after an initial emission increase in the early 1990s, but a number of Parties had clearly rising emission trends at the end of the decade. Carbon dioxide is the main GHG, accounting for 82 per cent of GHG emissions from Annex I Parties in 2000.

Policies and measures are being adopted and implemented

Many Annex I Parties are planning and implementing policies and measures to reverse the increasing trends in GHG emissions. In doing so, they are using integrated approaches to address all gases and sectors, with the involvement of local and regional governments and other stakeholders. Economic and fiscal instruments together with regulations appear to be the most important policy instruments, but several Parties continue to rely on voluntary agreements with industry. Most Parties attach great importance to promoting the development of new technologies. A few Parties reported policies and measures that had adverse impacts on emission trends, noting that energy market reforms reduced prices and encouraged low-cost fossil-fuel-based electricity production. Non-Annex I Parties are also implementing measures with a focus on energy, waste management, agriculture and forestry.

Emission projections and effects of policies and measures in Annex I Parties

Annex I Parties use different models and assumptions to estimate future GHG emissions. From their analyses we note that, after being relatively stable in the 1990s, GHG emissions are expected to be 10 per cent above 1990 levels in 2010, even if policies and measures are introduced by Parties. Emissions are projected to increase from current levels in most Annex I Parties, including the EIT countries, reflecting the economic recovery that began in those countries in the late 1990s. However, for 12 Parties, emissions in 2010 remain below 1990 levels. Parties also provided projections with “additional policies and measures”. Even with the use of such measures, GHG emissions still increase after 2000, but at a lower rate.

Projections of emissions in 2020 are more uncertain, but the information provided by Parties suggests that emissions would be about 20 per cent higher at that time than in 1990. In all cases, CO₂ remains the dominant GHG, but over time the relative share of hydrofluorocarbons (HFCs) increases and the shares of methane (CH₄) and nitrous oxides (N₂O) decrease.

Impacts and adaptation measures

Impacts and adaptation are high concerns, particularly for many non-Annex I Parties likely to be vulnerable to climate change. Parties use a wide range of models to estimate the impacts of future changes in climate on sectors, such as water resources, coastal zones, ecosystems, forests, agriculture, fisheries, tourism and human health. Climate scenarios are drawn from global circulation models. Some Parties have begun to identify adaptation priorities for the coming decades and have been encouraging local and regional governments to take climate change into consideration in their planning processes.

Additional sources of information

The latest national communications of Annex I Parties are available on the UNFCCC web site at <http://unfccc.int/resource/natcom/nctable.html#a1>. Information on emission inventories may be found at <http://unfccc.int/program/mis/ghg/index.html>. The UNFCCC secretariat also prepares a compilation and synthesis report, summarizing the most important information in individual national communications. This information is in documents FCCC/SBI/2003/7 and Add.1–4 and FCCC/SBI/2002/16, which are also publicly available on the UNFCCC web site.

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