

Global scale environmental measures – reduction of green-house gas emissions

Part 1: The Kyoto Protocol and Kyoto Mechanism

Between 1760 and 1994, CO₂ concentration in the air had risen to 358ppmv from 280ppmv. Since the 19th century, the world's average temperature has increased by 0.3-0.6 degrees and the sea level has risen 10-25 cm. According to the IPCC it is predicted that, by 2100, the temperature will have risen by 1-3.5 degrees and the sea level by 50 cm. Presently, 6.2 billion tons of CO₂ (in carbon) is emitted into the air every year.

In 1994, at the first Conference of Parties (COP1) for the United Nations Framework Convention on Climate Change, which was called the Climate Summit, indicators for green house gas reduction were agreed. The Kyoto Protocol, which was adapted at the COP3 in 1997, set numerical green house gas reduction targets for developed nations. For example, it was decided that Japan should reduce the emission by 6%, based on the amount in 1990; i.e. a reduction of 5.796 billion tones in carbon between 2008-2012. In order for the Protocol to enter into force, it is necessary for at least 55 countries to join the Protocol and the reduction amount of developed nations that join the Protocol must exceed 55% of the total CO₂ emission of all the developed nations. As a result, the Kyoto Protocol has not entered into force as yet. In order to achieve the reduction target the “Kyoto Mechanism” based on the market principle was introduced. This mechanism includes a joint implementation (JI) aiming to foster co-operation among developed nations to achieve the agreed reductions, and the “Clean Development Mechanism” (CDM). CDM allows the developed nations to achieve a certain amount of reduction by financially assisting developing nations in reducing their green house gas emissions. Emission trading is another measure under the Kyoto Mechanism which enables the developed nations to trade amounts of reductions.

CDM projects could be joint afforestation activities between developed and developing nations, methane gas power generation using biomass and wastes, and implementation of various measures for energy saving. Any CDM projects must be approved by the CDM boards of directors. In order for a CDM project to go ahead a proposal must be formulated and endorsed by the two nations concerned and a project must be registered. Monitoring systems must be established and emission reduction credits must be issued and allotted to the two countries.

CDM projects could contribute to the development of industries and the improvement of peoples' livelihoods. They could create new energy sources by effectively utilizing local resources that were wasted or unutilized in the past. They could also yield timber products for local people and fix CO₂ through afforestation in degraded land areas. CDM's direction corresponds well to regional development based on key phrases such as resource management, sustainable development and environmental conservation, all fields which AAI has been working in. In addition, joint project implementation in developing countries could also contribute to technology transfer. In the past, individual projects tended to look at regional environment and resource utilization, however, we are increasingly expected to develop projects that also address global concerns such as reduction of green house gasses. We need to recognize that the Earth has stepped into a critical stage so that we have no choice but ensure that not only local areas benefit but that also the global environmental benefits and impacts are considered. With this scope, the next issue will examine projects that AAI has been involved in, from the viewpoint of green house gas reduction.



Slash and burn field on Sumatra Island, Indonesia



Forests on peat bog on Sumatra Island