

**H-5 Studies on Communication and Countermeasure-Making Procedure  
concerning the Risk Management of the Global Environment  
(Abstract of the Final Report)**

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**1. Introduction**

The climate change problem presents some environmental security issues, and the difficulties to make numerical prediction of the change urge us to develop some advanced simulation scheme. In ironing out a national policy to cope with the burden of greenhouse gas curbing, the recognition and action of local communities toward energy saving and power generation through natural energy are essential to meet the curbing target in the civil sector.

On the other hand, as possible damages caused from acid rain are considered to become serious, political, social and economical factors of the fate of the problem should be made clear to establish efficient countermeasures. Furthermore, an efficient system for risk communication on the acid rain problem in East Asia is to be organized.

In these global environment problems, we usually encounter difficulties in determining strategies because of the lack of 'solid evidence' of the relationship between causes and results, and the way to solve this embarrassment is sought.

**2. Research Objectives**

On environmental national security, necessary viewpoints are scrutinized to make clear the national strategy in this area, especially relating to international conflicts caused by food and water shortages, and resulting refugees. In order to develop an efficient prediction method of climate change, an adaptive simulation procedure is desirable to be invented. To help the national government determine a reasonable policy to curb emissions of greenhouse gases, behavior of local communities concerning the climate change problem is to be examined, and power generation activities through natural energy in remote villages and towns are surveyed and analyzed. Moreover, some interpretation of scientific discourses based on social constructivism is sought to give an appropriate risk communication.

Patterns of national cognition by our nation and China are surveyed and scrutinized, and the development of our nation's policy toward China in this issue is examined to identify the

essential factors determining the acid rain policy change of China. Furthermore, the desirable ways of risk communication in the East Asia region are discussed to build an efficient proposal to make communication network on the issue.

### 3. Results

Among three major aspects of the environmental security, it is found that fears of international conflicts caused by food shortage, water scarcity and resulting floods of refugees have been paid little attention in international arguments such as at the IPCC. To make an efficient and meaningful prediction of climate change, an adaptive simulation tool continuously employing backward looking and forward looking estimation models has been established.

Environmental protection programs made by some advanced municipalities are examined. Though their risk recognition toward the climate change seems to be lukewarm, citizens are found to be eager to build an environmentally sustainable society. As for the possibility to make nonfossil and nonnuclear power, wind and solar power generation in several local communities are surveyed, and such activities are found to be promising to make the share larger and to be efficient in their community development.

To overcome scientific uncertainties on the findings and the actual cause of the climate change, social constructivism approach has made clear that the notion of 'science' has been used misleadingly and deceitfully, and that science has various aspects of its development. Therefore science activity should be labeled on the basis of its aspects of developments. Thus, we will never fall again into confusion stemming from illusions on science.

As for international agreements on acid rain prevention, Europe is found to be pushed toward agreements because of the detante in those years. Since 1980s in Asia, especially in China, damages caused by acid rain became evident, and various countermeasures were carried out. China recognized its acid rain issues since 1970s, and made itself surveys on the subject. In 1990s, in the rising concern on the global environmental problems, our nation strengthened the cooperation with China in this field. In the same decade, China felt it was important to improve relationship with other nations, and thus, it is natural to consider that China desired to remove its own image of an environment pollution superpower, and therefore became aggressive in taking measures toward acid rain reduction.

Furthermore, the way to promote an acid rain prevention regime has been presented on the basis of surveys on risk recognition of the issue in the area. Finally, a desirable system of risk communication of acid rain and its feasibility are examined and formulated into a proposal.

### 4. Discussions

The historical development of negotiations concerning acid rain prevention is quite informative in foreseeing the fate of talks on climate change prevention. It took nearly three decades to have settlements of the acid rain disputes, which were only international pollution cases in local regions such as Europe and East Asia, and were able to be overcome by pouring money, energy and technologies. It suggests that the climate change problem, the consequence of our civilization itself, will never be resolved in diplomatic negotiations in few years. It is the matter of philosophy, which is completely lacking in the political circle in this nation.