

Views on the Scientific Findings of IPCC Assessment Reports

September 30, 2010

1. Objective of This Statement

The IPCC (Intergovernmental Panel on Climate Change) has published a large volume of reports on climate change in a series of four assessment reports since it was established in November 1988. Authored by experts of climate change science, these reports have been the most reliable and comprehensive documents representing scientific knowledge in this field available at the time of their publications. They have been quoted on various occasions, at the Conferences of the Parties to the UNFCCC (United Nations Framework Convention on Climate Change) and at the G8 Summit conferences, among others. However, contents of the reports have not always been fully and properly understood and nature of the IPCC Reports is not always correctly recognized by people outside of the scientist community related to the IPCC. It seems that some have risen unreasonable doubts about credibility of the IPCC Reports, especially in the wake of two recent events described below (see Section 2 below). The IPCC Reports have also been quoted improperly for political decision-making in some instances (see Section 3 below). In these few months, we, a group of concerned scientists (see the Note below), have discussed these issues and decided to make our views on the two points open to the public. It is our strong wish that this paper contribute to a better understanding of what the past and future IPCC Reports intend to say.

Note: Names of concerned scientists (in alphabetical order)

Seita EMORI, Hisashi ISHITANI, Yoichi KAYA, Akio KITO, Taroh MATSUNO, Taikan OKI, Shigetaka SEKI, Taishi SUGIYAMA, Akimasa SUMI, Mitsutsune YAMAGUCHI

2. Credibility of the Content of IPCC Reports

The first point discussed here is the credibility of the scientific findings in the IPCC Reports. Since the late 2009, several points related to credibility of the IPCC reports have been raised. Here we shall focus on the following two points:

(1) About data manipulation

Emails stolen from a climate scientist were disclosed in the media which were taken to suggest that the scientist had intentionally manipulated data in the process of preparing the IPCC Third Assessment Report in 2001, making global warming appear more obvious. This is often called “Climategate”.

(2) About doubtful statements

On the Working Group II Report “Impacts, Adaptation and Vulnerability,” of the IPCC Fourth Assessment Report published in 2007, there is a statement to indicate that Himalayan glaciers are very likely to disappear by 2035. It was pointed out that the statement had no sound scientific basis to meet the IPCC’s criteria for referencing. Then the IPCC chair acknowledged that the statement was actually incorrect. In addition to this other minor errors, inappropriate quotations, and an improper sense of balance have also been raised.

As to the item (1), investigations into the issues were conducted in the UK, where the event took place. A special committee set up by the House of Commons Science and Technology Committee and two committees commissioned by related universities inquired into the facts. Then they concluded that, although some problems were found regarding disclosure of the original data, no serious error demanding the change of major conclusion was found in the scientific findings. As for the issues mentioned in item (2), the IPCC commissioned a third party, Inter Academy Council (IAC) to review the IPCC’s report preparation processes and organizational management system for increasing the credibility and transparency of IPCC structure and processes. Their review report was published at the end of August 2010.

Our views on credibility of the IPCC reports are as follows.

Most of the errors that have been pointed out are insignificant and have little effect on major scientific findings described in the IPCC Report. The two most important points in the IPCC Fourth Assessment Report;

- Warming of the climate system is unequivocal,
 - It is *very likely* that most of the observed increase in global average temperatures since the mid-20th century is due to the observed increase in anthropogenic GHG concentrations,
- have never been undermined.

Many scientific organizations and international research programs around the world (ICSU: International Council for Science, WCRP: World Climate Research Programme, IGBP: International Geosphere-Biosphere Programme) have made statements to support the major conclusions. In discussions at a symposium sponsored by the Science Council of Japan held on April 30, 2010, no specific scientific questions were raised in terms of these conclusions.

It is regrettable that such issues to question the credibility of IPCC Reports have occurred. IPCC-related parties must make efforts to prevent any recurrence of such problems. However, raising doubts about the scientific findings presented by the IPCC as a whole are unsound and unacceptable. Climate change caused by anthropogenic greenhouse gases is undoubtedly taking place, and prompt measures need to be taken.

3. On Decision-Making based on the findings of IPCC Reports

The second point to be discussed here is that the IPCC provides scientific findings and makes no recommendations or suggestions on policy options. Recently, however, in the mass media and other sectors, including some of government officials and politicians, it is often said that the IPCC recommends, as a scientific requirement, that “global mean temperature rise should be kept within 2°C from the pre-industrial level,” and also said that a CO₂ emissions reduction target should be set to achieve this scientifically required goal, and governments should develop policies based on these recommendations. This is a complete misrepresentation of the IPCC’s position.

The IPCC Fourth Assessment Report touched on the effects of global temperature increase in several places. The Technical Summary of the Report of Working Group II, for example, states as follows:

- (1) “Substantial changes in structure and functioning of terrestrial and marine ecosystems are very likely to occur with a global warming of 2 to 3°C above pre-industrial levels and associated increased atmospheric CO₂ (high confidence).” (Source: “Climate Change 2007: Impacts, Adaptation and Vulnerability,” p. 38, Technical Summary, IPCC Fourth Assessment Report)
- (2) “Global mean temperature changes of 2 to 4°C above 1990-2000 levels would result in an increasing number of key impacts at all scales (high confidence), such as widespread loss of

biodiversity, decreasing global agricultural productivity and commitment to widespread deglaciation of Greenland (high confidence) and West Antarctic (medium confidence) ice sheets.” (Source: ditto, p. 73)

The report merely mentions the possible effects of global temperature rise, and makes no requests or recommendations whatsoever that the increase of global average temperature should be kept within 2°C from the pre-industrial level.

The IPCC primarily produces its reports based on the principle of being “policy relevant” but not “policy prescriptive.” Since its establishment, the IPCC has adhered to the concept of summarizing scientific findings and has recommended no specific measures. The IPCC reconfirmed this policy at the scoping meeting on the Synthesis Report of AR5 held in August 2010.

Strategies and targets for greenhouse gas emissions reduction cannot be deduced from scientific basis alone. In addition to the effects of global temperature rise, judgment criteria include scientific risk assessment of climate change, options for response measures and their costs, potential socio-economic changes, and the evaluation of social values. Measures against global warming should be developed based on comprehensive consideration of these factors.

From the above perspective, the proposal for keeping temperature increase within 2°C and emissions reduction strategy to achieve the target (e.g., 50% reduction of global greenhouse gas emissions by 2050), as expressed in the G-8 statement and some others, should be considered as political decision primarily proposed by developed countries. They should never be misunderstood as scientific requirements.

Each nation should decide its policy on measures against global warming based on various factors such as those mentioned above, taking findings of the IPCC into consideration. On the basis of such policy-based arguments, nations should seek to build a global consensus to set a globally shared common target.

List of the concerned scientists

| Name | Affiliation | Relation with IPCC |
|----------------------|--|--|
| Hisashi ISHITANI | New Energy Promotion Council | ● Domestic IPCC association in Japan, WGIII-Chair |
| Seita EMORI | National Institute for Environmental Studies | ● IPCC-AR5-WG2 Chapter 9, LA |
| Taikan OKI | The University of Tokyo | ● IPCC-AR4-WG2 Chapter 3, LA ● IPCC-AR5-WG2 Chapter 3,C LA |
| Yoichi KAYA | Research Institute of Innovative Technology for the Earth | ● Domestic IPCC association in Japan, Chair |
| Akio KITO | Meteorological Research Institute | ● IPCC-AR4-WG1 Chapter 10, LA ● IPCC-AR4-WG1 Chapter 14, LA |
| Taishi SUGIYAMA | Central Research Institute of Electric Power Industry | ● IPCC-AR4-WG3 Chapter 2, LA ● IPCC-AR4-SYR CWT ● IPCC-AR5-WG3 Chapter 15, CLA |
| Akimasa SUMI | The University of Tokyo | ● IPCC-AR4-WG1 Chapter 8, LA |
| Shigetaka SEKI | National Institute of Advanced Industrial Science and Technology | ● IPCC-AR4-WG3Chapter 7, RE |
| Taroh MATSUNO | Japan Agency for Marine-Earth Science and Technology | ● Domestic IPCC association in Japan, Chair ● IPCC-AR4-WG1 Chapter 8, RE ● IPCC-AR4-WG1 SPM/TS, DA ● IPCC-AR4-SYR CWT |
| Mitsutsune YAMAGUCHI | The University of Tokyo | ● IPCC-AR4-WG3 Chapter 1, LA ● IPCC-AR5-WG3 Chapter 1, LA |