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Statement from the Experts' Meeting on Low Carbon Society Scenarios 2050 and the Roles of China, India and Japan

Organized by Ritsumeikan Sustainability Science Research Center (RCS)

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Participants noted with appreciation progress made at COP13 in Bali, Indonesia and submit this statement to support the agreed initiative and future process for long term cooperative action for tackling climate change.

I. Experts' Common Understanding of the Current Situation

1. Climate change due to the anthropogenic emissions of greenhouse gases (GHGs) has already been taking place. Without effective actions by the international community, all countries could face serious consequences in the form of socio-economic disruptions and losses.

2. With exhaustible nature of fossil fuel resources and thereby accelerated increase in oil, coal and natural gas prices, the world energy supply structure is expected to undergo radical change in the long run.

3. In addition, deforestation, change in land use and forest fires have been reducing the potential amount of carbon sink. An increase in the atmospheric concentration of GHGs, in turn, is projected to cause more disasters that threaten ecosystems and biodiversity.

4. Twenty years after the publication of *Our Common Future,* a report by the Brundtland Commission, and ten years after the adoption of the Kyoto Protocol, the international community is still struggling to achieve sustainable development as well as to protect the global environment through instituting a more effective and equitable framework for preserving our climate system.

5. Under these circumstances, industrialized and developing countries must work together to overcome these challenging problems, i.e., climate change and fossil fuel price hikes. One of the medium- as well as long-term goals of our efforts should be to decrease dependency on fossil fuels. The 4th Assessment Report (AR4) of the IPCC indicates that global emissions of GHGs need to peak in the next 10-15 years and be reduced to very low levels, well below half the levels in 2000 by the middle of the twenty-first century in order to stabilize their concentrations in the atmosphere to attain the most stringent mitigation levels assessed by the IPCC in the AR4. Similar target was considered in G8 Summit in 2007. Global GHG emissions should be significantly reduced by the middle of this century.

6. In order to achieve such ambitious targets, we need to establish a *new development model* that allows us to realize sustainability while preserving the local and global environment.

7. While focusing on establishing a new development model it should be encouraging to note that traditionally the conflicts around energy and the environment have always been the springboard of innovation and hence economic growth.

8. As one of the most industrialized nations in the world, Japan is in a position to contribute to development and diffusion of technologies for energy efficiency and environmental

protection. Similarly, as the largest developing economies and the leading CO_2 emitters in the region, China and India can benefit from technological advancement and innovations that further economic growth over the coming decades. A model of sustainable development formulated and agreed upon by these three countries will certainly be a showcase to the international community. Hence, joint efforts can contribute to the mitigation of and adaptation to climate change while pursuing socio-economic development.

II. Three Approaches Towards a Low Carbon Society

A. Technology-Based Measures

9. Technology has an extremely important role to play in making development sustainable in the whole world with an increasing population beyond the current number of 6.5 billion. Technology can contribute in reducing carbon intensity both for energy production and application.

10. On the side of energy production technology that will lead us to a low-carbon society could include the following: selecting low carbon intensive energy sources, such as renewables; clean coal technology; innovative nuclear reactors including thorium utilization with further safety and stability; and carbon capture and storage (CCS).

11. In energy use and application, low carbon intensity can be achieved by: avoiding wasteful energy usage by households and business; and promoting use of highly energy efficient appliances.

12. In addition, in order to secure long-term sustainability, we must also make the wiser use of traditional knowledge of natural ecosystems and focus on harnessing renewable natural energy sources. In principle, most technologies could

be applied for both industrialized and developing countries. However, when we transfer advanced technologies to developing countries, we have to be careful to determine whether or not they are *appropriate* in the sense that they could harmonize with each country's natural resources endowment, cultural and social backgrounds.

13. Some examples of such measures are as follows.

Transfer and diffusion of efficient and clean technologies, in particular:

(i) Efficient and affordable solar photovoltaic cells
(ii) Wind energy
(iii) Energy-efficient production and transmission technologies, such as highly efficient boilers and distribution systems
(iv) Technologies that efficiently use biomass for energy production such as gaifiers, biogas plants
(v) Promoting energy efficiency in building construction and manufacturing

Measures based on the transfer and diffusion of clean technologies for energy use and application

(i) Highly efficient household appliances such as CFLs, Improved Cookstoves, etc.
(ii) Appliances that are based on renewable sources of energy such as solar water heaters, solar water pumps, etc
(iii) Efficient space conditioning appliances and options
(iv) Fuel-efficient and affordable hybrid vehicles
(v) Highly efficient cars such as more advanced electric vehicles.
(vi) Promotion of energy efficient pumpsets for irrigation

Measures improving transportation system and related infrastructures

(i) Promotion of investment in and usage of public transportation, such as subways and light rail transit (LRT) systems in urban areas
(ii) Further improvement of intercity railway services to

facilitate a modal shift from cars and airplanes to trains and ships for passenger and freight transportation

(iii) Other measures aimed at reducing vehicle traffic within and between urban areas

(iv) Usage of highly efficient cars, such as more advanced electric vehicles.

Measures promoting research and development (R&D) of innovative technology including:

(i) Next-generation solar-photovoltaic and energy-storage technology

(ii) Next-generation electric (fuel-cell) vehicles

(iii) Next generation biofuels

(iv) Highly efficient, waste-free production technology based on lessons from natural ecosystems

(v) Development and customization of innovative technology and business models in accordance with Asian culture

B. Financial Mechanism Reforms

14. Achieving the global GHG emissions reduction target will entail measures to facilitate the public and private monetary flow from industrialized to developing countries. In principle, market mechanisms are effective and less costly to navigate the flow of private funds toward GHG emissions reduction. Effective use of other innovative financing instrument beside market mechanisms should be encouraged.

Further Development of CDM Projects and Promotion of Innovative Financing for Energy Efficiency

15. While international framework beyond 2012 has not yet been taking shape., as one of the measures for developing countries to participate in reducing GHG emissions, CDM has proved to be an attractive instrument for joint efforts by both industrialized and developing countries. If industrialized

countries show greater commitment, financial flow from industrialized to developing countries is likely to accelerate and thereby reduce worldwide GHG emissions. One of the options for accelerating CDM based initiatives is to introduce more flexibility in the approval procedures of CDM projects by the CDM Executive Board.

16. It would also be desirable on the application side that multinational financial institutions operating in developing countries are encouraged and convinced to provide credit for adoption of energy efficient measures for enterprises and households. In this context micro-finance that has proved to be successful in countries such as Bangladesh can be an effective instrument for promoting energy efficiency.

Further "Greening" of ODA and Other Assistance for Sustainable Development of Developing Countries

17. Further development initiatives in developing countries while catering to immediate domestic compulsions should be compatible both with local, domestic and global environmental preservation needs. In this context, it would be desirable that developing countries avoid investment in an infrastructure that is dependent on a high–energy consumption as in the case of the urban system in Los Angeles, for the coming half-century.

18. In order to achieve this target, technological and financial assistance from industrialized countries, in form of ODA linked to sustainable low carbon development, enhanced commitment for CDM, contribution to capacity building and technology transfer, is indispensable. Without such assistance, sustainable low carbon development cannot be realized.

C. Socio-Economic, Regulatory and Institutional Reform

19. The conventional paradigm of economic development, established by western countries and followed later by many others including Japan, has been based on the consumption of massive amounts of fossil fuels to overcome natural obstacles and achieve the maximum level of convenience. Such a development model has turned out to be unsustainable. Our common perception envisages that establishing a new paradigm of socio-economic development is indispensable. The new paradigm is essentially inherent in Asian culture, which emphasizes harmonization between nature and human beings. The traditional Asian lifestyle that encourages frugality and has an inherent bias towards sustainability needs to be encouraged and promoted.

20. In principle, high standards in quality of life are attainable without high GHG emissions. Simultaneously, it is imperative to internalize the environmental costs into the market mechanism through reform of the domestic tax systems and other policy measures, such as emissions trading.

III. Post-2012 International Framework and Strengthening Continued Cooperation among China, India and Japan

21. Our ultimate goal is to build a global society that is sustainable as well as *yutaka* (which can be broadly interpreted to mean "affluent," "prosperous" or "abundant," not only in a material but also non-material sense), and in which people of all nationalities enjoy a high standard and high quality of life while retaining their regional identities.

22. The achievement of this goal requires a new international framework—one that encourages industrialized countries to

shift away from energy- and resource-intensive practices and focus on technological innovation aimed at establishing a sustainable low carbon society, while encouraging developing countries to concentrate on transforming their economies to ones that are as resource- and energy-efficient as possible. The conventional paradigm of development should be shifted to that of sustainable low-carbon development. Future framework should recognize and reward developmental co-benefits of climate actions and CDM should be reformed to enhance its developmental dividend.

23. All policy areas in developmental planning and assistance should undergo an adaptation screen in order to reduce current and future vulnerabilities. Subregional and subnational cooperation in adaptation should be promoted to address transboundary issue such as river basin management.

24. Based on the ideas above, we propose the following guiding principles for such an international framework.

(i) All countries and stakeholders should join the framework to avoid catastrophic environmental and economic damage caused by climate change and to establish a new worldwide sustainable society in the future. It is important to establish a monitoring system of climate change impacts and a coordination platform for estimating a regional climate change and its impacts.

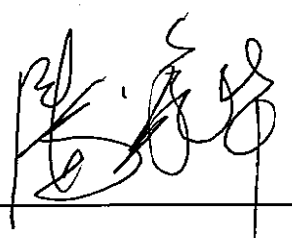
(ii) All parties should contribute to stabilization of the atmospheric concentration of GHGs and adaptation to the unavoidable climate change, according to their own responsibility and capability. Industrialized countries should take the lead in mitigation of and adaptation to the climate change, and developing countries should also make every effort to restrain GHG emissions with necessary technological and financial assistance provided by industrialized countries.

(iii) In order to ensure the activities above based on Asian cultures and traditions, necessary reform of socio-economic systems in each country and area should be encouraged. An effective cooperation mechanism, including financial and technological transfer from industrialized to developing countries, should be established and strengthened.

25. All countries are urged to commit to this framework, and contribute to significant reduction of global GHG emissions by 2050, on the basis of common but differentiated responsibilities and respective capabilities as well as specific national circumstances. By doing so, let us construct a global society that is truly sustainable and *yutaka.* Additional research work on implication of the global emission reduction targets with regard to development policy space to support growing population and associated needs.

26. In addition to efforts to establish an international framework for building a low-carbon society, researchers from China, India and Japan agree to continue dialogue, as exemplified by this symposium, for discussions on topics vital to the pursuit of a sustainable and low-carbon society.

27. Experts recommend that the above statement could be a good basis for discussion on climate change at G8 summit to be held next year in Japan and also for discussion in the framework of "Bali roadmap".



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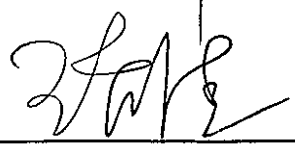

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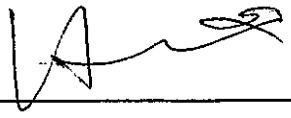

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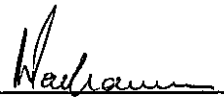

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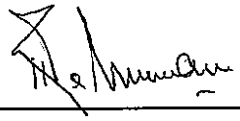

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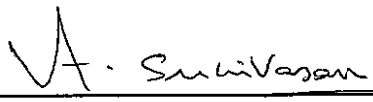

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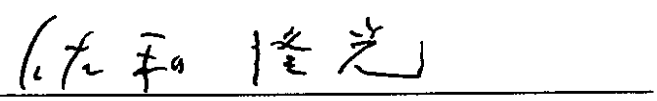

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