RIO+20
United Nations Conference
on Sustainable Development

Input to the Rio+20 Outcome Document

The Government of Japan

October, 2011

Proposal of the Japanese Government to achieve Sustainable Development

◆At Rio+20, renewed political commitments should be announced toward the establishment of the world where all three pillars of Sustainable Development, which are economy, society and the environment, could function in a well-balanced manner.

◆The outcome document should be concise and clear in order to convey robust global message toward the transition to a Green Economy and reinforcement of the governance of Sustainable Development.

◆The outcome document should consist of "Overview", "a Green Economy in the context of Sustainable Development and Poverty Eradication" and "the Institutional Framework for Sustainable Development".

I. Setting goals for Sustainable Development

In order to deal with various global challenges such as planetary boundaries and widening disparity, it is indispensable for each individual to fulfill their potential and to participate in building a better society.

(1) Green Economy

➢ Japan proposes the transition to a Green Economy as an important tool to realize Sustainable Development.

- The significance of Green Economy is to be described as "an economic system which promotes sustainable growth while improving human well-being, by pursuing economic growth and the environmental conservation in tandem, properly utilizing and conserving natural resources and ecosystem services".
- All stakeholders should take part and play roles depending on their capabilities, taking account of the diversified international community of today. Above all, focus should be on the roles and responsibilities of emerging economies and private sectors.
- In order to achieve a Green Economy, various means and experiences including green innovation should be shared by each country. Establishing a framework to form a green economy strategy, which corresponds with individual country's stage of development should be agreed upon.

(2) New International Development Strategy and Goals

➢ Japan proposes that a new international development strategy should be prepared, with the formulation of the international development goals beyond 2015 (Post-MDGs) in mind.

- In order to achieve Sustainable Development, the concept of Human Security should be the main guiding principle of the new international development strategy.
- In addition to GDP, "happiness / well-being" measure should be considered.

➢ In order to realize Sustainable Development, Japan proposes that the concentrated process to formulate comprehensive post-MDGs should start with the involvement of a variety of stakeholders, to be finally agreed on at UN.

- Discussions at Rio+20 should be the building blocks used in the formulation of comprehensive post-MDGs.
- Post-MDGs should reflect the new situations of today's international community.

II. Nine Proposals to achieve Sustainable Development

(1) Disaster risk reduction

Adoption of a Post "Hyogo Framework" and its Integration to Development Policy

Japan will host the 3rd World Conference on Disaster Reduction in 2015, in order to share with the international community the lessons and experiences from the Great East Japan Earthquake and other disaster experience. To integrate disaster risk reduction into development policy, a new international agreement should be formulated to substitute the "Hyogo Framework" which was adopted in 2005.

(2) Energy

Toward a Bold Energy Shift

Japan proposes that each country agree to start working to promote energy-efficiency, renewable energy and clean energy, in order to build a low-carbon society.

(3) Food Security

Achievement of Food Security through Sustainable Agriculture

Japan proposes that the international community should agree on a comprehensive approach including increase of agricultural investment, promotion of responsible agricultural investment, and collective and effective actions in developing countries to increase food production.

(4) Water

Nexus of Sustainability: Integrated Water Resources Management

Japan proposes that consideration of goals for a integrated water resource management to replace the "Hashimoto Action Plan II", which shows priority areas to solve problems on water and sanitation should be started.

(5) Future City

The City Everyone Wants to Live

Japan presents a model of "Future City" to the international community. A "Future City" is a city which continuously creates economic, social and environmental values through building low-carbon cities and dealing with aging society with a declining birth rate. Japan tries to disseminate and evolve a model of "Future City" through utilizing international inter-city cooperation networks. Japan proposes that Sound Material-Cycle cities spread widely, by sharing Japan's 3R initiative.

(6)Education for Sustainable Development

Initiative to Cultivate "Sustainable Citizens"

Japan proposes that the importance of Education for Sustainable Development be emphasized, in order for each citizen to play the leading role as a participant in a sustainable society. Each country should agree to work on promoting and sharing efforts regarding Education for Sustainable Development and cultivating sustainable citizens domestically and internationally.

(7)Global Earth Observation System of Systems (GEOSS)

Strengthening the "Global Earth Observation Network"

Japan proposes further strengthening of global earth observation network through GEOSS, in order to deal with global challenges such as climate change and large scale natural disasters.

(8) Technological Innovation and Green Innovation

Realization of Comfortable Next-generation Environment

Each country reassures the importance of technological innovation and green innovation and agrees to initiate its efforts depending on its growth stage.

(9) Biodiversity

Realization of the Aichi Biodiversity Targets toward Life in Harmony with Nature

Japan proposes that each country should reaffirm the importance of the Aichi Biodiversity Targets and agree to promote its participation in international actions to enhance efforts to realize the Aichi Biodiversity Targets.

III. Institutional Framework

◆Efforts to promote Sustainable Development are indispensable at all levels. Japan emphasizes that problems we are facing and measures to take should be identified first, before standing on the assumption that a new institution should be established as a foregone conclusion

◆Japan proposes measures to strengthen the function of Commission on Sustainable Development (CSD), through i)Enhancing the reviewing function, ii) Improving theme setting, iii)Strengthening ties with development-related organizations. In providing assistance, it is beneficial for each country to establish a framework focusing on Sustainable Development.

◆Japan proposes a step-by-step approach be taken to strengthen international environmental governance by enhancing integration and efficiency of United Nations Environment Programme (UNEP) and Multilateral Environmental Agreements (MEAs), taking into account the viewpoint of future establishment of a specialized agency as one of options.

Green Economy

in the context of sustainable development and poverty eradication

Current Situation

Diversified actors of the global society

→Need to share roles based on capacities

Planetary boundaries:

- Population growth
- Food, water and energy scarcity
- Environmental degradation

→Need to review the existing growth model

Widening disparity

→Need to create society where people can share benefits of economic growth

Natural disasters

→Need to build resilience

<u>Comprehensive Approach is Important</u>

All stakeholders taking part and playing appropriate roles

→From the dichotomy of developed / developing countries to role-sharing among all players including emerging countries, private sectors, etc

"Human Security" as Guiding Principle

→Every individual realizes their rich potential, and participates in building a better society.

Transition to Green Economy

Sharing "policy toolbox"

<u>Innovation is the most important</u>

- Technology is the key:
  - Smart-grid, heat pump, solar power, geothermal power, eco-house, energy-saving home electronic, LED light, waste management (3R), global earth observation, climate change projection, data integration and analysis, renewable energy. etc.
- Other methods: market mechanisms, green procurement, enlightenment education, collection of knowledge and technology, etc.

Each country:

- **learns from each other's good political measures and practices**
- **builds mechanism for creating national <u>green economy strategy</u>**

Achievement of Sustainable Development - Path toward post-MDGs -

Creating new international development strategy

- First, create new international development strategy to present prospects and principles for the 21st century type development policy
- Next, create goals of post-MDGs based on the strategy
- Propose "well-being indicators" as a standard of wealth other than GDP

Agreeing on the full-scale process for creating post-MDGs

- Discussions at Rio+20 should form important building blocks toward the adoption of the post- MDGs

Japan's 9 Proposals to Achieve Sustainable Development

1. Disaster Risk Reduction ✿ Adoption of a Post "Hyogo Framework" and its Integration to Development Policy ✿

Japan will host the 3rd World Conference on Disaster Reduction in 2015 to share with international community the lessons and experiences from the Great East Japan Earthquake and other disaster experience. To integrate disaster risk reduction into development policy, a new international agreement should be formulated to substitute the "Hyogo Framework" adopted in 2005.

2. Energy ✿ Toward a Bold Energy Shift ✿

Each country agrees to launch of work to promote energy-efficiency, renewable energy and clean energy to realize a low-carbon society.

3. Food Security ✿ Achievement of Food Security through Sustainable Agriculture ✿

Agreeing on a comprehensive approach including increase of agricultural investment, promotion of responsible agricultural investment, and collective and effective actions in developing countries to increase food production.

4. Water ✿ Nexus of Sustainability: Integrated Water Resources Management ✿

Starting consideration of goals for an integrated water resources management plan to replace the "Hashimoto Action Plan II", which shows priority areas to solve problems in water and sanitation.

5. Future City ✿ The Place Everyone Wants to Live ✿

Presenting a model of "Future City" to the international community through building law-carbon cities and dealing with aging society with a declining birth rate. Spreading Sound Material-Cycle cities by sharing Japan's 3R initiative.

6. Education for Sustainable Development ✿ Initiative to Cultivate "Sustainable Citizens" ✿

Emphasizing the importance of education for each citizen as a participant in a sustainable society. Agreeing to work on promoting Education for Sustainable Development and cultivating sustainable citizens domestically and internationally.

7. Global Earth Observation System of Systems (GEOSS) ✿ Strengthening the "Global Earth Observation Network" ✿

Further strengthening global earth observation network in order to deal with global challenges such as climate change and large scale natural disasters.

8. Technological innovation and Green Innovation ✿ Realization of Comfortable Next-generation Environment ✿

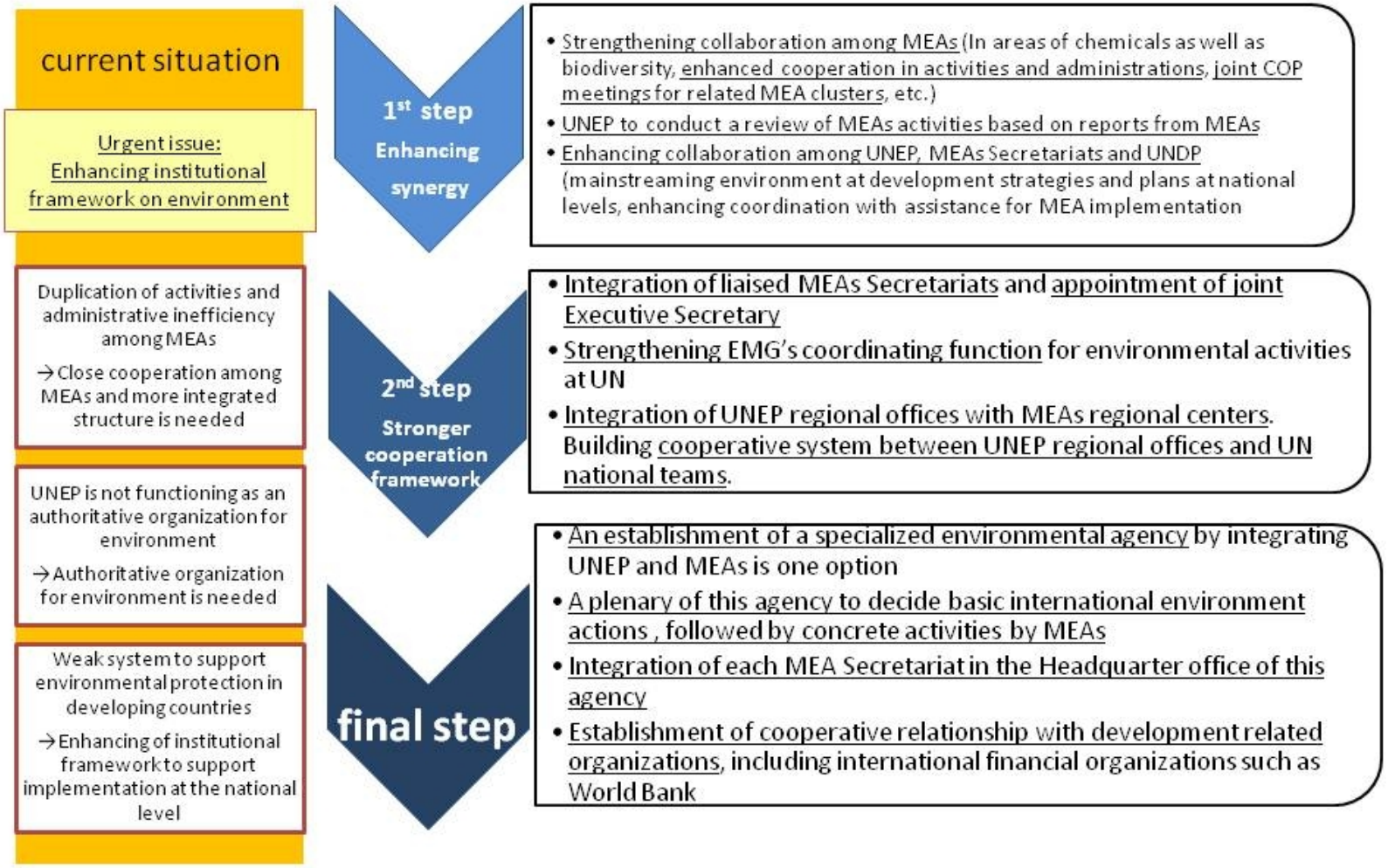
Each country reassures the importance of technological and green innovations and agrees to initiate its efforts depending on its growth stage.

9. Biodiversity ✿ Realization of the Aichi Biodiversity Targets toward Life in Harmony with Nature ✿

Reaffirming the importance of the Aichi Biodiversity Targets and agreeing to promote its participation in international actions to enhance the efforts to realize the Aichi Biodiversity Targets.

Institutional framework for Sustainable Development

Step by step approach toward the enhancement of international environmental governance



Part 1: Japan's Basic Views on the Compilation Document

I. General Remarks（Direction to be indicated at Rio+20, based on new emerging challenges）

1. The outcome document should:

Convey a concise and clear message

Japan considers the "Focused Political Document" should be concise and clear, to convey a robust global message toward Sustainable Development.

Japan proposes that the political declaration should consist of the following three parts:

(1) Overview

(2) Green Economy in the context of Sustainable Development and poverty eradication

(3) Institutional Framework for Sustainable Development

2. The Aim of Rio+20:

New political commitment toward the establishment of the world where all three pillars of Sustainable Development, which are economy, society and the environment, function in a well-balanced manner

After the UN Conference on Environment and Development in 1992 and the UN Millennium Summit in 2000, a certain direction has been set within the international community about the way Sustainable Development should be. Since then, however, the situation in the international community has drastically changed. New challenges have emerged, which has not been fully addressed by existing frameworks and goals.

Under such circumstance, it is important that each party in the international community plays its respective role depending on individual capabilities, in order to achieve Sustainable Development for a society as a whole, by reducing disparities while keeping the burden on the environment minimum.

For this purpose, Japan considers that the 21st-century style of harmonization among economy, society and the environment should be discussed at Rio+ 20, and shared with the international community.

Government leaders at Rio+20 are expected to drive the transition to a Green Economy, which is a paradigm shift appropriate for the new era.

They are also expected to exercise leadership to ensure the effectiveness of international institutional framework which enables Sustainable Development.

3. Basic background:

Changes during the 20 years since 1992

(1) Diversification of actors in the international community

The structure of the international community has drastically changed in these 20 years since the Earth Summit in 1992, including such changes as the larger presence of emerging economies, civil society, NGOs, private sectors and local administrations. In order to achieve Sustainable

Development, these varieties of stakeholders are required to play roles depending on their respective capabilities. It is necessary to realize an international community in which developed and developing countries can cooperate with each other, overcoming the differences between them. It is the time to review the dichotomy of developed and developing countries.

(2) Planetary Boundaries

Global population growth is expected to give more serious implications with regard to the issues of energy, water and food. We need to look at the reality that resources on our planet are limited. A new growth model should be sought to meet the needs of the present without compromising the ability of future generations to meet their own needs.

(3) Widening disparity between the rich and the poor

Multi-faceted disparity has been widening not only between developing and developed countries, but also among and within developing countries. In light of social aspect, one of the pillars of Sustainable Development, we need to narrow the wealth gap and create a society in which the benefit of growth is shared by all. The issue of domestic disparity cannot necessarily be measured by macroeconomic indicators. This particularly indicates the significance of the concept of human security which focuses on persons and the necessity of a new indicator in addition to GDP.

(4) Intensifying natural disasters

We have been experiencing natural disasters which seem to have been caused by extreme weather events such as heat waves, flood, drought, heavy rain and larger scale tropical cyclones such as hurricanes.

Japan learned the lesson from the painful experience of the Great East Japan Earthquake on 11th March, 2011 that a large scale natural disaster has huge negative impacts not only on the national economy, but also on the global economy. In order to minimize the adverse effects of large scale natural disasters on the economic development and to promote Sustainable Development, we need more social resilience and risk mitigation of disaster-related damages. In the reconstruction process, the participation of every generation and gender including women is necessary.

Since the aforementioned elements are interconnected, comprehensive approaches need to be discussed at Rio+20, based on these understandings. In this context, it is important to position human security as the main guiding principle. Sustainable Development can be achieved only when each individual fully exercises their rich potential and take part in building a better society. It is necessary to awaken each and every individual, and to create a future based on the cooperation among all stakeholders. This is the direction heads of states are expected to show and exercise leadership to lay the groundwork to materialize the concept of human security at Rio+20.

The world population is expected to reach 70 billion as of October 31th 2011, and will continue to increase even further in the future. The population problem is an important issue which is the basis of imminent challenges such as Sustainable Development and poverty eradication. The international community should be united and take enhanced measures in order to respond it properly.

II. Green Economy in the context of Sustainable Development and Poverty Eradication

1. Significance of a Green Economy:

Sustainable Development through the transition to a Green Economy

Given the background described in Section I, the world needs to be united to achieve Sustainable Development. A Green Economy / Green Growth is the new growth model and essential means to achieve this. A Green Economy could be understood as "an economic system which promotes sustainable growth while improving human welfare, by pursuing economic growth and the environmental conservation in tandem, properly utilizing and conserving natural resources and ecosystem services". A Green Economy is a key to success and a useful tool to achieve Sustainable Development while paying attention to the environment and society.

The transition to a Green Economy presents technological innovation and industries of all countries with new perspectives, and greatly contributes to the realization of a low-carbon society, energy security, life in harmony with nature (Aichi Targets) and enhancing resilience against natural disasters including those related to climate change. The transition to a Green Economy will also create new job opportunities and enable economic growth.

Although concerns have been raised about possible new burdens associated with the introduction of a Green Economy, its benefits including the creation of new growth opportunity is clearly expected to outweigh such concerns. The understanding should be shared by all that introducing the elements of a Green Economy from an early stage of growth will lead to Sustainable Development.

2. Wider participation of stakeholders to realize Sustainable Development through a Green Economy:

Establishing the system in which all stakeholders themselves act appropriately

The Rio Declaration of 1992 made clear that states have "common but differentiated responsibilities" on the deterioration of global environment. What this principle means is that all states should work toward Sustainable Development by taking responsibility for the global environment in view of their respective capabilities. This principle does not intend to divide the international community into the fixed categories of developed and developing countries. Compared with the time of the Rio Declaration of 1992, the situation of international society and economy has drastically changed. The role of not only nations but also new players such as private sectors, NGOs,

women[1] and the elderly is becoming important. With the diversification of stakeholders in the international community, Rio+20 is required to focus on their roles. Securing participation and ensuring their access to resources for stakeholders including women at all levels in the process of policy formation and its implementation are also important. The leaders are expected to take initiative to build a partnership between variety of stakeholders, overcoming the traditional pattern of assistance from developed to developing countries. Funds, expertise and experiences of emerging economies, private sectors, and philanthropies should be utilized effectively. Otherwise, we would not be able to deal with the challenge for Sustainable Development.

3. Sharing Policy Toolbox to realize Sustainable Development

(1) A Green Economy is the most important tool to realize Sustainable Development. In order to realize a Green Economy, Green Innovation is extremely important. The burden on the environment could be reduced by utilizing advanced environmental and energy technologies. This would also encourage economic development driven by new demand stimulation and the creation of new employment. Technology is the key to Green Innovation. Such technologies include smart-grid system, heat pumps, solar power generation, geothermal power generation, ecological housing, energy-saving electric appliances, light-emitting diodes (LED) lighting, technologies for appropriate resource management and the 3Rs, global observation and climate change projection, and data integration and analysis. Investment to such innovation should be facilitated in order to promote technological development and dissemination, and legitimate legal instruments including measures to protect intellectual property rights should be prepared. Other measures for the transition to a Green Economy, for instance, are as follows.

Market-Based Instruments

- Introduction of systems which verify the reduction of CO2 emissions as credits and promote facilities with lower environmental burden by utilizing private resources.
- Subsidies to forest management
- Eco-point systems to promote energy-efficient electric appliances and houses.
- Gross metering scheme in feed-in-tariffs for renewable energy

Green Procurement

- Promotion of government procurement of products with less burden on the environment
- Prioritized procurement from the companies which acquired ISO14001

Greening Finance

- Promotion of investment in the field of environment by using interest subsidy and leasing subsidies
- Establishment of “Principles for Financial Action towards a Sustainable Society,” signed by

[1] Japan expects the active role of women, by targeting the rate of women in executive position to be at least 30% in all sectors by 2020.

financial institutions voluntarily

Dissemination of environmental corporate management and environmental reporting

- Promotion of environmental corporate management in small and medium-sized enterprises
- Promotion of environmental reporting

Utilizing private funds

- To introduce a system to promote facilities with low environmental burden by utilizing private resources.

Awareness raising and education

- To increase awareness of lifestyle changes that reduce the daily environmental burden

Consolidating knowledge and technology

- Utilizing knowledge-hubs in each sector and region[2]
- Technological development through daily research and development, sharing past experiences and developing appropriate networks

(2) In addition to the transition to a Green Economy, it is significant to learn good practices of nations each other in order to achieve Sustainable Development.

Major sectors for achieving Sustainable Development could be: disaster risk reduction, energy, food security, conservation and utilization of water resources, sustainable urban planning, education for sustainable development and GEOSS. Specific proposals on these sectors are as described in the paragraph 5 below. Sustainable Development could be achieved by applying such measures as aforementioned in 3. (1), taking each character of the sectors into consideration.

(3) At Rio + 20, Japan proposes that the participants should agree to utilize the aforementioned policy tool box upon developing green economy strategy. Establishing a framework to form a green economy strategy which corresponds with individual countries' stage of development should be agreed upon.

4. To realize Sustainable Development :

Toward the post-MDGs

The international community has been making efforts to tackle such challenges as poverty eradication since 2001, under the Millennium Development Goals (MDGs). We need to continue and further strengthen our efforts beyond 2015, the final year of the current MDGs' timeframe. In doing so, it is important for us to take measures based on the new situation that the international community faces, considering the role of the transition to a Green Economy in Sustainable Development. These

[2] In the transition to a Green Economy, expertise and technology of expert organization should be effectively utilized. For example, Asia-Pacific Water Forum acknowledges such organizations as knowledge- hubs, which include Japan's Integrated Coastal Area and River basin Management (ICARM) in the field of disaster risk reduction, and Japan Sanitation Consortium (JSC) in the field of Sanitation. Investment organizations on international development assistance are encouraged to utilize such knowledge-hubs.

viewpoints should be the basis in formulating comprehensive international development goals beyond 2015 (post-MDGs). The leaders at Rio+20 are expected to (a) formulate a new development strategy (or its pillars) (b) launch a formal process toward the adoption of the post-MDGs, with the involvement of variety of stakeholders, to reach a final agreement on the post-MDGs at UN by UN member states. This should be the strong basis for the post-MDGs.

Although the term "Sustainable Development Goals" (SDGs) is often mentioned, the term sustainability implies various meanings, and there are diversified opinions on the scope and target of SDGs. Some say SDGs should supplement the current MDGs, understanding sustainability in a narrow meaning which is not covered in the current MDGs. Others say SDGs are similar to the post-MDGs. SDGs could be interpreted in various ways, but eventually they need to converge into the post-MDGs. Japan therefore does not use the term SDGs, in order to avoid confusion. The discussion at Rio+20, regardless of such backdrop, should form an important building block toward the adoption of the post-MDGs.

(1) New international development strategy: *The way the post-MDGs should be*

Although the MDGs has been playing a critical role as a compass of international community on poverty eradication, it does not have underlying consistent principles. Therefore, MDGs seem to be divided into section by section, under respective goal. Before setting concrete targets of the post-MDGs, an international development strategy should be developed which would clarify the 21st-century style vision and concept of development. With such a strategy, the leaders at Rio+20 will be able to show their determination and vision for Sustainable Development.

(2) The principles of new international development strategy: *Human Security*

Sustainable Development is the main element of the new international development strategy, and a Green Economy is regarded as an effective tool to achieve Sustainable Development. Japan proposes that the concept of "human security" should be located as the main guiding principle of the new international development strategy.

The concept of human security focuses on individuals and aims at building a society where each human being can realize their rich potential , through protection and empowerment,. It is important to tackle social challenges such as alleviating poverty and narrowing disparities with cross-sectoral, comprehensive and people-centered approaches. Building a resilient society, which leads to the realization of Sustainable Development, is possible only when the vulnerable and threatened people such as the aged, women, children and the poor are protected and empowered, so that they can cope with threats by themselves with the ability to decide and act on their own.

Japan would like to point out that the concept of human security is closely related to other important elements such as equity and mutual support, to be included in the new international development strategy.

(3) The concept on the new international development strategy

The new international development strategy should cover not only developing countries but also developed countries, and promote partnership not only among nations but also among variety of stakeholders including private sectors, civil society, and philanthropies. Such a 21st-century style partnership can be built only with strong political leadership.

The importance of economic growth should be reaffirmed as a driving force of "wealth creation", which is the capital of Sustainable Development. "Wealth creation" will be supported by comprehensive, shared and knowledge-based growth, in addition to a Green Economy.

The new strategy is required to cover resource security / food security, climate change / environment, resilience / disaster risk reduction, which are the areas not fully covered by the current MDGs, bearing planetary boundaries, such as the population problem fully in mind.

(4) A measure of well-being other than GDP

In order to achieve Sustainable Development, environmental, social and economic sustainability need to be considered. Therefore, some viewpoint other than relying on the convention of GDP as a measure of economic and social progress is needed. Such indicators can be the basis of concrete targets under the post-MDGs. The new international development strategy should consider the development of such indicators. For example, "happiness / well-being"[3] could be one of the meaningful indicators, based on i) economic and social conditions, ii) physical and mental health, and iii) human and social relationships. The outcomes of Global Project on Measuring Wellbeing and Social Progress by OECD should also be utilized.

Domestic disparity should also be a focus in setting the new indicators. Again, human security could provide important signpost in this regard.

(5) What Rio+20 should achieve: *A path toward the adoption of the post-MDGs*

Japan proposes that the followings are the possible outcomes to be agreed at Rio+20

(a) To formulate a new international development strategy (or its pillars) with the shape of the post-MDGs in mind.

(b) Toward the adoption of the post-MDGs, an intensive process should start with the involvement of variety of stakeholders, to reach a final agreement on the post-MDGs at the UN by the UN member states

(c) To promote the work to establish happiness / well-being indicators

In these processes, hearing of expert opinions will be conducted.

5. Nine proposals from Japan to achieve Sustainable Development

Japan proposes the following nine initiatives to realize Sustainable Development. They are all major sectors to realize Sustainable Development and also the areas Japan has strong expertise.

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[3] "Committee on Well-being", the Cabinet Office

(1) Disaster risk reduction

Adoption of a Post "Hyogo Framework" and its Integration to Development Policy

Natural hazards such as earthquakes, droughts, floods, forest fires and volcanic eruptions not only deprive people of their lives but also threaten economic and social foundation and bring serious environmental destruction. Recent increase in intensity and frequency of natural hazards have become a great barrier against the realization of Sustainable Development and poverty eradication. Based on the idea of "disasters derail development", now is the time to locate disaster risk reductions one of the major pillars of Sustainable Development policies.

Japan has consistently advocated for the importance of disaster risk reduction, by hosting the 1st (Yokohama: 1994) and the 2nd UN World Conference on Disaster Reduction (Kobe: 2005). The "Hyogo Framework for Action 2005-2015", adopted at the 2nd conference in Kobe stipulates the priority actions for disaster risk reduction, and has been the guidepost for each country as the single international agreement in this field.

The Great East Japan Earthquake gave Japan lessons and further expertise on disaster risk reduction. Japan's efforts to build a more resilient and sustainable society will provide important inputs to a new international agreement to replace the "Hyogo Framework for Action", which will expire in 2015. Together with the discussion on the review of the current MDGs whose final year is 2015, Japan proposes that disaster risk reduction be clearly placed within the post-MDGs, and the post "Hyogo Framework for Action" be set out which includes concrete tools and methodologies to realize the mainstreaming of disaster risk reduction into development policies.

In order to contribute to this new framework, Japan proposes that a high level international conference on large scale natural disasters in 2012 and the 3rd World Conference on Disaster Reduction be held in Japan to agree the post "Hyogo Framework for Action" at the international level.

(2) Energy

Toward a Bold Energy Shift

To build a low-carbon society which emits the minimum amount of CO2 (carbon minimum), all sectors of society including industry, administration and the general public are required to act to encourage energy conservation and renewable energy.

UN-Energy proposes that i)universal access to modern energy should be achieved by 2030, ii)modern energy efficiency ratio to be raised to 40% by 2030, and iii) the share of renewable energy in the global energy supply should be raised to at least 30% by 2030.

To realize a low-carbon society, energy-efficiency, renewable energy and clean energy need to be promoted. Japan considers the measures need to be taken to promote clean energy technology and systems, including i)the reduction of trade and investment barriers against energy efficient products , ii) joint international research and capacity building, iii) the promotion of government-private sector cooperation and the supply of efficient and low-carbon energy, and iv)adequate incentive for construction, industry and transportation sectors.

Japan proposes that the Rio+20 agree on the launch of work by each country to realize a

low-carbon society for promoting energy efficiency, renewable energy and clean energy.

Energy-efficient technologies are widely available in Japan both in the private and public sectors, and a low-carbon type life style is also widely spread. Various measures have been introduced, including the Top Runner standard which sets a target for each electric appliance that consumes a large amount of energy, in order to promote energy efficiency. These energy-saving efforts greatly helped Japan to deal with power shortages after the Great East Japan Earthquake.

(3) Food Security

Achievement of Food Security through Sustainable Agriculture

Considering the global population growth, resource limitations and intensified extreme weather events, food security has become a pressing global challenge. At the same time it is necessary to promote a sustainable agricultural system and diversified crops, which would contribute to positive externalities of agriculture as well as sustainable use of natural resources such as land, water and biodiversity.

Japan proposes that food security be realized through sustainable agriculture, which includes the followings:

- Agricultural production and productivity need to be enhanced and will need to be raised by 70% in order to feed the world's population, which is expected to reach 9 billion in 2050.
- co-existence of diverse agricultural patterns, improvement of disaster response, and rural development are needed. In this regard, assistance and expertise sharing will be needed in the least developing countries (LDCs) to encourage regional dispersion of agricultural production to deal with disaster risks caused by climate change.
- International policy coordination such as responsible agricultural investment, improvement of market transparency, improvement of agri-business and increasing investment to agricultural sector to increase food production is also urgent. In order to harmonize and maximize the interest of investors, recipient countries and local residents, Japan has been promoting the "Responsible Agricultural Investment (RAI)" with related international organizations such as World Bank, Food and Agricultural Organization (FAO), United Nations Conference on Trade and Development (UNCTAD) and International Fund for Agricultural Development (IFAD) etc. RAI needs to be promoted.

To realize food security, the following measures are extremely important:

- the reducing of post-harvest loss
- facilitating trade in food and agricultural products
- organizing farmers and human resource development for the purpose of resource management

In developing countries, it is indispensable to promote intensive and efficient measures while encouraging proper agricultural investment (in irrigation facilities, land improvement, agricultural research, fertilizers, agricultural chemicals and market access) by utilizing regional resources. Developed countries are especially required to reduce excessive investment which places a heavy burden on the environment.

(4) Water

Nexus of Sustainability: Integrated Water Resources Management

Water is the nexus of Sustainable Development to bridge social benefits such as food, energy and human health, and the atmosphere and natural water circulation process. 100% of agricultural production and 95% of energy generation (firepower, hydropower, tidal power, nuclear power: solar power also needs massive pure water) rely on water in the process of production to disposal.

On the other hand, there are many people who do not have access to safe drinking water and sanitation facilities. One of the MDGs targets aims to halve the proportion of the people without sustainable access to safe drinking water and basic sanitation by 2015. With population growth and urbanization, rising demand for water and severer water pollution are expected. With the rising frequency of floods and water depletion due to climate change, water environment has been deteriorated. Given this trend, more efficient management of water resources and water environment is required. Japan has been conducting projects to domestic and overseas projects to apply advanced technologies and know-hows, including advanced wastewater treatment using membrane treatment technology, the energy utilization system for sewage biomass, and asset management systems. Japan has been working on international standardization, in order to disseminate water-related technologies and systems to overseas.

The UN Secretary-General's Advisory Board on Water and Sanitation (UNSGAB) announced "Hashimoto Action Plan" at the 4th World Water Forum in 2006, followed by "Hashimoto Action Plan II" in 2010. These Plans have played important roles in the utilization of water resources, by setting goals such as improving access to water and sanitation, integrated water resource management, and disaster response. These plans will expire in 2012. In the recommendation of UNSGAB to Rio+20, as announced in September 2011, the additional goals of waste water management and more efficient use of water in agriculture have been introduced. To share these Japanese measures with the international community, Japan proposes that the discussion should start at Rio+20 on the goals for water resource management after 2013, from the viewpoint of Sustainable Development. This will be an important element of the post-MDGs.

(5) Future City

The City Everyone Wants to Live

While more people are expected to live in urban areas, especially in emerging economies, developed countries are experiencing a seriously declining birth rate and aging society. Energy and environment have become urgent and common global issues. In order to deal with such challenges, Japan proposes that newly born cities as well as existing cities aim to become a model of "Future City", which realizes the transition to the Green Economy.

Future cities are cities in which not only the three pillars of Sustainable Development, namely, economy, society and the environment are well balanced up to a certain level: but also can keep continuously creating new values from these pillars. In order to create values from those three

pillars, it is essential to make an intensive effort to tackle challenges of building a low-carbon city and dealing with aging society with a declining birth rate, within a city which possesses integral functions in certain areas. Such efforts would combine technologies and services in various different fields strategically and transform social and economic systems into sustainable direction, while inducing synergistic and positive secondary effects. Through this process, it is expected to expand demand, to create jobs and to invite private investment. Moreover, it is important that each city involves multiple stakeholders to design a desirable future from the viewpoint of citizens and realize it, while utilizing regional characteristics such as natural and social conditions. Through such undertakings , a city where everyone wants to live and with stronger social bonds will be realized. Japan is to realize such a city ahead of others and presents it to the world through international municipal networks. When Japan realize it, it is expected that cities friendly to local residents, communities and ultimately friendly to global environment will be created in many places throughout the world.

Japanese local administrations and communities are playing leading roles in actively promoting the 3Rs (Reduction, Reuse and Recycle). A model of “Future City" is Sound Material-Cycle cities, which include the elements of the 3Rs by reducing, reusing and recycling wastes, while utilizing environmentally-friendly alternative materials to the maximum extent.

Such Sound Material-Cycle citiesor “3R cities” could spread throughout the international community, by transferring Japan’s expertise on waste management and recycling to countries in need, through global partnerships on waste.

It is important to promote projects in which each stakeholder voluntarily cooperates with each other in cities and local administrations, and assist international cooperation between local authorities, including assistance from international organizations.

(6) Education for Sustainable Development

Initiative to Cultivate “Sustainable Citizens”

In order to achieve a sustainable society, it is indispensable for each one of us to be aware of the limited resources on earth and to play a leading role in the creation of such society. From this viewpoint, Japanese education connects issues such as the environment, disaster risk reduction, biodiversity, climate change, international understanding, peace, welfare, development, gender, children’s human rights, AIDS, poverty reduction, and conflict prevention, using the principles of Sustainable Development. Japan promotes such education within and outside school, in cooperation with a variety of sectors including international organizations, foreign governments, educators, NGOs, and enterprises. Japan thinks “sustainable citizens” can be fostered through such efforts. Education for Sustainable Development (ESD) is something to be shared not only among children but also within the society as a whole, across generations[4].

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[4] Japan proposed the concept of “Education for Sustainable Development (ESD)” in the Johannesburg Summit in 2002. The concept of ESD connects individual issues such as environmental education, basic education, and international understanding in the holistic manner. Japan also proposed that the decade from 2005 to be designated as the “Decade of Education for Sustainable Development (DESD)” in the same Summit. Japan plans to host the “UNESCO World conference on ESD ” in

Especially after the Great East Japan Earthquake, the recognition of the importance of education on disaster risk reduction and energy has increased. The promotion of human resource development has gained importance in order to solve the global issues such as large scale disasters and climate change, and to contribute to building a sustainable society.

Each country has endeavoured to promote Education for Sustainable Development, it is clear that Sustainable Development cannot be achieved unilaterally. Toward the end of the "United Nations Decade of Education for Sustainable Development (UNDESD)" in 2014, it is necessary to further promote ESD and to share such efforts and encourage inter-sectoral works at regional and global levels in cooperation with UNESCO, the leading agency of UNDESD.

Japan, hosting the international conference on Education for Sustainable Development in 2014, proposes that the Rio+20 be an occasion to agree on disseminating such education in each country and foster citizens who can support Sustainable Development by sharing the efforts domestically and internationally.

(7) Global Earth Observation System of Systems (GEOSS)

Strengthening "Global Earth Observation Network"

In order to achieve Sustainable Development, innovation in science and technology is indispensable. In order to deal with global challenges such as climate change and large scale natural disasters, timely, quality long-term data on the globe should be obtained and shared.

After the importance of the global observation activities was emphasized in the World Summit on Sustainable Development (WSSD) in 2002, the international community aims at building GEOSS in the ten years from 2005 to 2015, by achieving comprehensive, coordinated and sustained observations of the Earth system. It also aims at generating information necessary as a basis for sound decision-making in the nine fields of social benefit[5].

"GEOSS 10-Year Implementation Plan[6]" was adopted as an indicator to measure this goal. Japan has been contributing to the construction of GEOSS by conducting various observations through satellites such as Greenhouse gases Observing SATellite "IBUKI (GOSAT)", which can improve understanding of global carbon cycle dynamics and accuracy of future climate forecast, for monitoring atmospheric CO2 and CH4, and Advanced Land Observing Satellite "DAICHI (ALOS)" for monitoring volcanic eruptions and the situation in earthquake hit areas. In order to achieve green economy, it is extremely important to invest in technological innovation in developed and emerging countries and share the fruits of sophisticated technologies by creating international networks of science and technology, as seen by the example of GEOSS.

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the final year of UNDESD. Japan places education on sustainable development as "one of the most important education principles" in the Basic Plan for the Promotion of Education, and includes the concepts in the Courses of Study, Government Curriculum Guidelines.

5 Disaster, health, energy, climate, water, weather, ecosystem, agriculture, and biodiversity

6 This was formulated at the 3rd Earth Observation Summit in 2005. The 5th Earth Observation Summit (GEO Ministerial Summit) was held in 2010, marking the middle year of this plan, set out "GEOSS Strategic Targets" to articulate the plans in the latter half of the decade.

The importance of networks has been increasing in the 21st Century. Universal sharing of accurate data on the globe is extremely important in terms of reducing digital divide. Japan proposes that the network on the global earth observation system though GEOSS should be further strengthened by upgrading basic geospatial information, such as that on water system and geographic features, which covers the whole planet. In order to do so, Japan proposes that global earth observation systems be improved in nations and organizations, related data be disclosed as much as possible, and user-friendly database be constructed.

(8) Technological Innovation and Green Innovation

Realization of a Comfortable Next-generation Environment

The transition to a Green Economy is the key to achieving Sustainable Development. Technological innovation and green innovation are extremely important for the transition to a Green Economy. It is the very technological innovation through everyday research and development that supports the elements needed to achieve Sustainable Development, such as: renewable energy, energy conservation, building smart grids, technological innovation for proper resource recycling, communication technology innovation, zero-emission houses, and sophisticated global earth observation, climate change projection and data integration and analysis. Japan hopes to further develop these cutting-edge Japanese technologies, and share them with the international community to improve the environment for fostering Green Innovation.

In the "Strategy for becoming an environment and energy power through "green innovation" of 2010, Japan announced the "Strategy for becoming an environment and energy power through "green innovation", which lines up the following six elements.

i) Making use of Japan's world-leading technologies

ii) Becoming the world's top environment and energy power through a comprehensive policy package

iii) Promoting growth by green innovation and securing support resources[7] for the growth

iv) Lifestyle reforms through improving the comfort and quality of life[8]

v) Creating green cities by promoting the rebuilding and remodeling of superannuated buildings

vi) Developing model to reform the socioeconomic structure from local areas

In "The Guideline on Policy Promotion for the Revitalization of Japan" announced after the Great East Japan Earthquake, an innovative strategy for energy and the environment is mentioned to

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[7] To speed up the development of innovative technologies including storage batteries, next-generation vehicles, improved thermal power plant efficiency, and information and communications systems with lower electric power. To achieve comprehensive greenhouse gas emissions reductions in the transportation and household sectors by promoting modal shifts, encouraging the use of energy-conserving consumer electronics. To leraise efficient electric power supply and demand through a Japanese-version smart grid linking electric power suppliers and electricity users via information systems, and spark new demand through related equipment in households, promoting this as a growth industry. Through such measures, Japan aims to build independent and decentralized energy system which excels in both low-carbon and disaster reduction aspect. Japan also promotes complete cyclical use of domestic resources by further focusing recycling and technological development of alternative materials to substitute rare metals and rare earth.

[8] To promote zero-emission homes, offices, and other facilities through the spread of eco-housing, the expanded use of renewable energies, the spread and expansion of heat pumps, and the 100% adoption of LEDs.

be considered, as a measure toward “Redesigning and Refortifying National Strategies towards New Growth”.

In the light of the global resource limitation, green innovation is expected to gain its importance as a significant element to provide technological innovation and job opportunities through creation of new markets. Japan proposes that each country reassure such importance and initiate its efforts depending on its growth stage.

(9) Biodiversity

Realization of the Aichi Biodiversity Targets toward Life in Harmony with Nature

In order to realize Sustainable Development, it is indispensable to maintain rich biodiversity and to maximize ecosystem services (benefits from food, water, timber, medicine, etc.).

At the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD/COP10) held in October 2010, the long-term vision to be achieved by 2050 was adopted to create a world of “Living in harmony with nature” where “By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people”. Human beings have accumulated wealth upon benefits from nature. Japan considers the world living in harmony with nature will create the basis of true Sustainable Development.

The human-influenced natural environment (socio-ecological production landscape) has been formed and maintained by human use and management. Such environment has resilience against large scale natural disasters and contributes to the maintenance and development of sustainable society and economy. From this viewpoint, Japan has proposed “*Satoyama* Initiative”, to promote the conservation of such environment worldwide. The value of such environment should be appreciated under the vision of “living in harmony with nature”.

As concrete targets for actions to realize the long-term biodiversity vision, twenty “Aichi Biodiversity Targets” have been adopted at CBD/COP10, to be achieved by 2020 or 2015. These targets include the conservation and expansion of protected areas and revision and steady implementation of the National Biodiversity Strategies. To achieve these targets, it is necessary to promote relevant policies and measures at national, regional and global levels, and to provide assistance to developing countries for necessary capacity-building.

In order to promote concrete actions to achieve the Aichi Biodiversity Targets by all sectors, the UN General Assembly decided to stipulate the year from 2011 to 2020 as “the UN Decade on Biodiversity”. During this decade, wide-ranging stakeholders such as business communities, local authorities, and NGOs should be encouraged to take part in relevant activities (mainstreaming of biodiversity).

Japan proposes that each country should reaffirm the importance of the Aichi Biodiversity Targets at Rio+ 20, which is expected to be the opportunity to contribute to the realization of those Targets by encouraging each country to share, support and participate in measures to promote them (eg. through “International Partnership on *Satoyama* Initiative” and regional partnership for protected

areas".

III. Institutional Framework for Sustainable Development

1. Basic Background and challenges ahead:

Sustainable Development should be promoted at all levels. Institutional reform is not a precondition.

In order to achieve Sustainable Development, it is necessary to promote integrated effort at all levels including national, regional, and international levels, while striking a balance among economy, society and the environment. It would be beneficial for the international community to share such basic understanding and to agree to concrete measures to improve international frameworks including those of international organizations at the Rio+20, as a basis for tangible actions. In doing this, Japan considers present problems should be defined first, rather than standing on the assumption that a new institution should be established.

Firstly, it would be effective if the international organizations related to the three pillars of Sustainable Development, namely, economy, society and the environment, strengthen collaboration with each other at the field level, and enhance the structure to support implementation of Sustainable Development at the national level. Japan appreciates the effort to enhance collaborations between UN institutions at the national level, under "One UN" initiative. After analyzing past successes and failures in precise, this initiative could be made for example "One UN for Sustainable Development Initiative", in order to further promote the mainstreaming of the environment in national development plans and strategies.

Secondly, it could be pointed out that the officials in the environment sector and the development sector are not fully collaborating and cooperating with each other, both in government offices and in international organizations. For this reason, there is a tendency that discussions are often duplicated and lack understanding on each other's arguments. Therefore, a framework should be established to harmonize these two sectors at all levels, including national, regional, and international levels. For example, it is beneficial for each country to establish a framework focusing on Sustainable Development.

2. CSD Reform:

Focus should be on the improvement of functions

The following points have been discussed on CSD, the only high-level committee on Sustainable Development: i) discussions at CSD usually center on environmental policies and are often duplicated with those in other for such as UNEP and various MEAs. CSD lacks originality in its discussion. ii) CSD only reviews the implementing situation of Agenda 21, without being able to secure actual implementation of it. For example, the review meeting which is held in the first year of each CSD cycle is the occasion for countries only to present their policies, and not functioning as review for ensuring their implementation. The policy conference in the second year usually spend great deal of time negotiating without adopting a decision, or leaving MEAs to make decisions.

These meetings do not produce meaningful outcome so far. iii)The participants to CSD meetings are mainly ministers and officials from environmental ministries, who do not have a close collaboration with those in development sector.

The following points would provide concrete solution:

(1) Strengthening Review function of CSD

Actual problems in implementation should be attached more importance, in order for each country to learn from each other's experiences. Japan proposes the introduction of peer reviews on each country's policies and follow-ups toward the achievement of international goals on Sustainable Development. Based on such peer reviews, periodic report would be needed to comprehensively evaluate global measures for Sustainable Development.

(2) Improvement of CSD agenda setting

It would be necessary for CSD to decide not to take up the issues which have already discussed at Conference of Parties (COPs) of MEAs.

(3) Further collaborations with development agencies

It would be beneficial to enhance the collaboration between the discussions on environment and economic/social development, by holding the United Nations Economic and Social Council (ECOSOC) substantive session together with CSD meetings. Japan considers it to be beneficial for each country to establish a framework focusing on Sustainable Development, in conducting development assistance.

3. Strengthening Institutional Framework on the environment:

Improving efficiency of administrative and financial managements

Strengthening of institutional framework on the environment is an urgent task in the three pillars of Sustainable Development. Since there are numerous MEAs and related organizations in the field of the environment, duplications of activities and administrative inefficiency are the issues to be addressed.

Therefore, Japan considers that it would be significant if leaders at the Rio+20 agree on the manner in which international environment organizations should be to exercise true effectiveness and leadership. However, only discussions on institutional reforms preceding the scrap and build of duplicated organizations could result in fragmentation thus not desirable. Japan considers that step-by-step approaches are realistic. Only after taking each step by promoting synergies[9] among

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[9] Coordination has been enhanced among the three conventions related to chemicals and wastes, including joint activities, joint management, and joint services. In order to strengthen assistance to national-level implementation, capacity building and technical assistance have been encouraged to be done jointly. Capacity-building programmes and the development of clearing house mechanism will be done jointly, as well as collaboration among scientific advisory organizations and joint national reporting, in 2012-2013. The budget for these joint activities will be divided among the three conventions. On joint management and joint services, the Joint Executive Secretary of these conventions was appointed last spring, and the joint secretariat is under preparation. A joint secretariat will be composed of joint convention service unit (legal issues, administration and budget, knowledge management and IT, awareness raising, conference services, resource mobilization) and individual technical unit. Through the integration of secretariat functions,

MEAs and rationalizing their administration, the possible creation of an ideal specialized organization may be envisaged as one of options. This could be achieved in the following steps.

(1) The first step

- Strengthening collaboration among MEAs activities and administrative arrangements, holding joint COPs in each field (especially in the area of biodiversity)
- Conducting a review based on UNEP's report on the activities of MEAs
- Enhancing collaboration among UNEP, MEA Secretariats and United Nations Development Program (UNDP) at national levels

(2) The second step

- Integrating MEA Secretariats associated with each other and appointing joint executive secretary
- Strengthening coordination within the Environmental Management Group
- Integrating UNEP regional offices and regional centers of MEAs, building cooperative system between UNEP regional offices and UN national teams

(3) The third step

On the condition that the first and second steps are fully ensured, an establishment of a specialized environmental agency by integrating UNEP and MEAs could be considered as a final step. The plenary of this agency would make decisions on international actions on environment, to be followed by concrete activities by MEAs. Each MEA Secretariat should be integrated in the Headquarter office of this agency. Cooperative mechanism should be built with development related organizations, including international financial institutions such as the World Bank. If a restructuring including these were realized, environmental governance could be enhanced, with administrative procedures and financial management further rationalized.

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budget has been rationalized. The fixed costs such as office equipment, translation and printing have been reduced by the third to the half in the 2012-2013 budgets. Secretariat staff members will be reappointed in the manner not to exceed the personnel cost of each convention.

Part 2: Global challenges and effort in major sectors and Japan's experience toward the transition to a Green Economy

In order to promote the transition to a Green Economy, it is important that global challenges and necessary measures in major sectors are shared, with each country taking appropriate actions depending on individual circumstances.

Japan is a "Green Economy Advanced Nation[10]", which has been implementing various measures toward the greening of its economy. Sharing Japan's experiences, therefore, would be beneficial for the countries which are to make the transition to a Green Economy.

This section describes the global challenges and efforts in the sectors Japan considers to be prioritized, together with Japan's experiences and undertakings in such sectors.

1. Mitigating risks related to natural hazards

(1) Challenges and goals to be shared

Needless to mention the Great East Japan Earthquake, the recent increase of disasters shows that the reduction of the risks related to natural hazards and early recovery from disasters are extremely important for the international community. From the Sustainable Development viewpoint, it is indispensable for the international community to raise awareness on the common challenges and goals to reduce the risks related to natural hazards.

Once taking place, disasters not only take many people's lives but also lead to the separation of people and the destruction of communities, destroying the long-term development outcome in a matter of seconds. On the other hand, disaster risk reduction has not been regarded as a major development agenda because it is difficult to access and foresee the outcome of actions.

However, it is quite possible to make rational judgments on how much resources should be allocated to recover the damage brought by disasters, based on objective data analysis and verification of past disaster records. As recommended in the Global Platform for Disaster Risk Reduction in 2009, the promotion of some additional investment to disaster prevention could play an important role in protecting human lives and development outcome.

After the Great East Japan Earthquake, international activities have been vigorously

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[10] Japan aims at creating 1.4million new jobs in the environmental field, through Green Innovation. The Chair's conclusion of the G8 Labour and Employment Ministers Meeting in Niigata in May 2008 recognizes "that Governments, employers and workers should work together to achieve a coherent balance of growth, employment, productivity and concern for the environment", and the following measures were agreed.
- helping displaced workers caused by environmental changes make a transition to new jobs
- encouraging skills development that responds to environmentally-friendly innovations and industrial changes
-promotion of environmentally-friendly way of working, by adjusting to new patterns of natural resources use and conservation in workplaces. Japan provides assistance to Asian countries which have achieved industrialization to a certain extent through International labour Organization (ILO). The assistance includes the promotion of environment-related employment by strengthening partnerships between workers and employers to realize environmentally-friendly corporate activities, and the pilot programme to cultivate model companies. Japan has promoted vocational training in new areas such as environment and energy.

conducted to utilize Japan's experiences to strengthen global measures against disasters. The World Bank Report in November 2010 points out the importance of actions to avoid catastrophic damage from less frequent but larger scale disasters such as the one experienced by Japan. The OECD is proposing stronger measures against global-scale shocks and the creation of a resilient society by conducting disaster risk assessments.

(2) Necessary measures

The 2nd UN World Conference on Disaster Reduction in 2005 in Kobe adopted the "Hyogo Framework for Action 2005-2015", which includes the following priorities.

i) Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation

ii) Identify, assess and monitor disaster risks and enhance early warning

iii) Use knowledge, innovation and education to build a culture of safety and resilience at all levels

iv) Reduce the underlying risk factors

v) Strengthen disaster preparedness for effective responses at all levels

In developing countries, the following measures would be needed.

- measures straightly before the disasters to protect human lives, such as early warning and evacuation instruction
- measures to prevent catastrophic economic damage considering the seriousness of such damage by recent intensified disasters
- regional cooperation in conducting emergency assistance for recovery which would lead to international efforts

It is also necessary for the international community to raise the sense of emergency on large scale disasters which rarely take place in each country. With the accident of the Fukushima Dai-ichi Nuclear Power Plant triggered by the Great East Japan Earthquake which involved an exceptionally large scale earthquake and tsunami, the perpetual necessity of nuclear power plant safety assessment has been reconfirmed. It is important for all the countries which intend to use or introduce nuclear power plants to conduct a comprehensive assessment on risks and safety of nuclear facilities.

(3)Japan's approach

While promoting the Hyogo Framework for Action, Japan proposed and established the International Recovery Platform as an international joint project, in order to materialize the Hyogo Framework. This enables Japan to summarize and disseminate international expertise and lessons on recovery and reconstruction, and develop human resources for "build back better". In order to further contribute to international disaster cooperation activities, Japan announced that Japan would like to host the 3rd World Conference on Disaster Reduction in 2015, to share the expertise and lessons learned from the Great East Japan Earthquake with the international community. To prepare for this conference, Japan is going to host a high level international conference on large scale disasters in 2012.

Japan committed to the contribution of more than 2.5 billion dollars in five years for disaster risk reduction and reconstruction in the Asia-Africa Summit in 2005. Japan has steadily disbursed this assistance, and has actively extended assistance for disaster risk reduction.

Japan promotes "Sentinel Asia[11]", a project to share disaster-related information such as satellite pictures in Asian countries via internet. As we have witnessed after the Great East Japan Earthquake, many tsunamis have been historically triggered by earthquakes in Japan. Based on the experiences and lessons learned from the Great East Japan Earthquake, Japan decided to review its overall measures against earthquakes and tsunamis. The basic direction was announced by the Experts Committee of the Central Disaster Management Council in September. Japan promotes "building cities resilient to disasters and tsunamis" through both logistic and substantial measures based on the concept of "reducing risks" to minimize disaster damages, and maintaining protecting human lives as the top priority. Basic lifelines such as sewage systems have been promoted, through Business Continuity Plan (BCP) to secure emergency function, not only logistic measures but also substantial measures and the improvement of evacuation system using ICT. Japan also plans to designate "Sanriku Fukko (Reconstruction) National Park (as a provisional name)", in order to enhance the reconstruction of disaster-affected areas and to pass the disaster experiences to future generations, according to the Natural Parks Act.

In order to strengthen initial response measures, Japan will mobilize emergency response personnel from the places outside of disaster-stricken areas, in case response capacities are limited in the areas. This will help emergency rescue and early reconstruction. Through these measures, Japan intends to avoid prolonged effects of disasters and to enhance a wide-ranging disaster risk reduction system to prevent secondary damages.

These expertise and technologies based on Japan's own experiences will greatly contribute to the Sustainable Development of the international community. Japan will promote the wider network and expertise for disaster risk reduction in Asia, through the Asian Disaster Reduction Center (ADRC). Under the collaboration with research organizations such as ICHARM, Japan will domestically and internationally utilize science and technology to make a rational selection of appropriate damage mitigation and prevention measures, based on disaster risk assessment and prediction acquired from the global observation data.

2. Climate Change and Energy（To achieve a low-carbon society）

(1) Challenges and Goals to be shared

The ultimate objective in the field of climate change is to achieve stabilization of greenhouse

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[11] The joint international project aiming to support disaster management in the Asia-Pacific region. This joint project was proposed and led by Japan in the "Asia-Pacific Regional Space Agency Forum(APRSAF)", an international community aiming to enhance space activities in the Asia-Pacific region. The project aims at sharing disaster-related information obtained through such means as earth observation satellites via internet, in order to prevent and mitigate damages from natural disasters including typhoons, floods, earthquakes, tsunamis, volcanic eruptions and forest fires. The project is participated by 67 organizations from 24 countries/regions and 11 international organizations.

gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system (Article 2, UNFCCC).

The Cancun Agreements adopted at COP16 recognize that deep cuts in global greenhouse gas emissions are required according to science with a view to reducing global greenhouse gas emissions so as to hold the increase in global average temperature below 2℃ above preindustrial levels, and it is also agreed that the Parties should cooperate in achieving the peaking as soon as possible. In order to achieve these goals, it is necessary to operationalize the Cancun Agreements robustly, and to establish a fair and effective international framework in which all major economies participate.

UN-Energy proposes that i)universal access to modern energy should be achieved by 2030 ii) modern energy efficiency ratio to be raised to 40% by 2030, and iii) the share of renewable energy in the global energy supply should be raised to at least 30% by 2030.
Such targets are meaningful in dealing with climate change and from the viewpoint of securing access to energy.

(2) Necessary measures

The following policy measures are effective in achieving these goals.

- in addition to UN negotiations, promotion of cooperation to build a low-carbon society at global, regional, national and lower levels, as being steadily implemented, as well as steady assistance to developing countries for this purpose
- sharing expertise within regions, exchange of opinions with wide-ranging stakeholders, and the promotion of co-benefit approach
- specifying risks of climate change, information gathering on the probability and impact assessment, to create the scientific basis for an international framework
- implementation of adaptation and mitigation measures and assistance to vulnerable countries
- supporting REDD-plus[12] activities as a mitigation measures and improvement of measurement, reporting and verification (MRV) as the mitigation measures
- securing CO2 sinks through promotion of sustainable forest management, appropriate management and conservation of protected and other forests and the promotion of urban greening
- environmental education
- promotion of low-carbon society through a comprehensive policy package including designing new systems, changing existing systems, introduction of new regulations and deregulations. Quick dissemination of environment-friendly technologies and products, and the promotion of Green Innovation

[12] The reducing emissions from deforestation and forests degradation in developing countries (REDD), with the share of approximately 20% of the world GHG emissions, is one of important issues to mitigate climate change. The role of the conservation , sustainable management of forests and enhancement of forest carbon stocks in developing countries are added to REDD, and is called REDD-plus.

(3) Japan's approach

(a) Contribution to the international community

Japan supports the establishment of a low-carbon society. Japan announced to provide developing countries which are tackling climate change by reducing emissions and countries which are vulnerable to the effects of climate change with the assistance of approximately 15 billion dollars from private and public sectors, by 2012. Japan has already disbursed 11.3 billion dollars by the end of July 2011.

Japan is actively participating in the designing process of "the Green Climate Fund", and "Climate Technology Center and Network" and its designing process, as agreed to establish by the Cancun Agreements. In this regard, Japan hosted the 2nd Transitional Committee in Tokyo in July 2011, and hosted Policy Dialogue on Climate Change in Africa in October 2011. Japan has been promoting international initiatives such as the "Innovative Program of Climate Change Projection for the 21st Century (KAKUSHIN)[13]", "Research Programme on Climate Change Adaptation[14]", "International Research Network for Low Carbon Societies (LCS-RNet)[15]", "Asia and the Pacific Adaptation Network (APAN)[16]", "Ministerial Conference on Global Environment and Energy in Transport[17]", "Global Mapping" project [18], and "Global Research Alliance on Agricultural Greenhouse Gases[19]".

Japan will continue these measures to improve climate projection and impact assessment technologies, and to generate information contributing to risk management. Japan is also formulating "Low-Carbon Growth and Sustainable Development Strategy for Africa[20]" with African partners and is promoting "East Asia Low Carbon Growth Partnership[21]" with East Asian countries.

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[13] This program conducts researches on long-term global environmental projection near-term, climate prediction, extreme event, projection through simulation computing by the super-computer "Earth Simulator" This program is expected to contribute to IPCC-AR5, and provides basic information for the policies on climate change mitigation and adaptation.

[14] To develop downscaling methods, data assimilation technology, climate change adaptation simulation technology, in order to refine the results of the "Innovative Programme of Climate Change Projection for the 21st Century (KAKUSHIN)" down to regional level.

[15] The network of 16 research organizations from 16 countries, launched in 2009 under the G8 Environmental Ministers' Meeting. Research organizations in G8 and Asian countries are cooperating and sharing information and expertise under this network, on various challenges and measures to build low-carbon society through scenario analysis.

[16] An Asian network which constitutes the Global Adaptation Network proposed by UNEP at COP15. The network contributes to sharing knowledge, experiences and information and to matching adaptation needs of developing countries with assistance

[17] A meeting of transport ministers and relevant international organizations of majour countries, focusing measures against climate change in transportation sector. Japan hosted the 1st Meeting. 28 countries and 5 international organizations participated in the 2nd Meeting in Italy.

[18] An international project participated by National Mapping Organizations from 181 countries and regions, to develop global geospatial information, which is necessary in dealing with global environmental issues. Proposed by Japan in 1992, and Japan has been playing the central role with Geospatial Information Authority of Japan serving as the Secretariat.

[19] A research network participated by 32 countries on GHG reduction in agricultural sector. Researches have been conducted on livestock, paddy fields rice and croplands. Japan serves as the Chair in Paddy Rice Research Group.

[20] Low-Carbon Growth and Sustainable Development Strategy in Africa"
The 3rd Tokyo International Conference on African Development (TICAD III) Ministerial Follow-up Meeting in May 2011 (Dakar) agreed to formulate this strategy and it was included in the communiqué. An interim report on this strategy will be submitted to the TICAD Follow-up Meeting in 2012 with the final report to be done by the end of 2012. Japan is collaborating with African countries and TICAD co-organizer organizations to formulate the strategy.

[21] The concept of "East Asia Low Carbon Growth Partnership" promotes the development of low-carbon growth model in East Asia, the world's growth center as well as the largest CO2 emitter. The concept was included in the Chairman's Statement of the East Asia Summit Foreign Minister's Consultation in July 2011. Japan is considering to host a conference

Japan actively participates in international discussions to reduce GHGs from the international transportation sector, at international organizations such as the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO). Japanese public and private sectors are enthusiastically engaged in the development of the cities which enable people to live in harmony with the environment, through Japan's advanced environmental technologies such as bullet train, urban transportation, water, energy and highly efficient coal fire power generation. Japan will conduct necessary researches, human resource development, and public sector financial support. Japan will support the introduction of related environmental regulations in developing countries.

(b) Domestic Measures

The "New Growth Strategy –Blueprint for Revitalizing Japan–" was decided by the Cabinet in June 2010 and places the "Strategy for becoming an environment and energy power through Green Innovation" as one of the strategy sectors. The New Growth Strategy stipulates that the Government of Japan will conduct such measures as supporting the spread of renewable energy, promoting low-carbon investments and financing, utilizing information and communication technologies, promoting modal shifts, disseminating energy-saving electric appliances, and recycling domestic resources. On the New Growth Strategy, the Japanese Cabinet decided the "Interim Report on Strategies to Revitalize Japan" on 5th August 2011, taking into account the impact of the Great East Japan Earthquake on the Japanese economy. Based on this report, the Japanese Government will make efforts to put into practice the "New Growth Strategy" by adhering to the objectives and schedules and also redesign and reinforce strategies for new growth, and to develop the "Strategies to Revitalize Japan" by the end of the year ("Overall Picture of Policy Promotion", decided by the Cabinet on 15 August 2011). The following have been stipulated in the "Strategy for becoming an environment and energy power through Green Innovation". i)To try to quantitatively change the "Strategy for becoming an environment and energy power ", including the review of energy-related policies ii) To sum up the basic policies of the "Innovative Strategy for Energy and the Environment" toward the end of 2011, based on the "Guidelines for Policy Promotion – toward the revitalization of Japan –" issued by the Cabinet in May 2011, and reflect them to the "Strategies to Revitalize Japan" iii) To formulate a new roadmap as the "Innovative Strategy for Energy and the Environment", by reviewing the existing roadmap under the "Strategy for becoming an environment and energy power " in the "New Growth Strategy", with the idea that the scenario to reduce the dependency on nuclear energy should be materialized and the Green Innovation Strategy should be reinforced and implemented ahead of schedule.

The Cabinet Committee on global warming in December 2010 basically shared the idea that technological innovation is the very "answer to the winning formula on the environment, energy and growth". The Committee decided to develop a comprehensive Green Innovation Strategy, by

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to promote sharing information and best practices in East Asia next April.

expanding the “Strategy to build Japan into a Global power in the Environment and Energy field” under the New Growth Strategy. The Renewable Energy Special Measures Law, including the introduction of this system, was passed in the 177th Regular Diet Session. The law will enter into force in July 2012.

3. Food Security

(1) Challenges and goals to be shared

Considering global population growth, rising food prices, limited global resources, and intensifying extreme weather events, ensuring food security has become one of the global challenges. To halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day and who suffer from hunger are set out in the MDGs.

On the other hand, it is necessary to promote sustainable agricultural system and crop diversity which would contribute to the sustainable use of natural resources such as land, water and biodiversity, and land conservation as well as the positive externalities of agricultural activities such as the cultivation of water sources, protection of landscape, and conservation of biodiversity.

(2) Necessary measures

In order to achieve the above, the following measures would be necessary:

- increasing food production and productivity through crop breeding and the improvement of irrigation facilities
- improving disaster response measures, promoting farming , forestry and fishing communities, and dealing with tasks related to climate change, water and other resource management
- promotion of responsible agricultural investment
- facilitation of trade in foods, agricultural and fishery products
- improvement of market information and transparency
- improvement of agri-business environment
- international policy coordination
- reducing the impact of price fluctuation on the most vulnerable people
- achieving sustainable fishery production
- sharing expertise and assistance to developing countries are also important to promote these measures in the most vulnerable LDCs[22].

(3) Japan’s Approach

(a) Contribution to the International Community

[22] In order to raise global food production, investment in agriculture is an urgent issue for both public and private sectors. With the rapid increase of large scale acquisition of agricultural land in recent years, it is often criticized as “competition to win agricultural land”. In order to minimize the negative impact of such acquisition and to harmonize and maximize the interest of investors, recipient countries, and local residents, Japan has promoted RAI” with related international organizations (World Bank, FAO, UNCTAD, IFAD). Japan intends to continue such effort.

Japan hosted the Asia-Pacific Economic Cooperation (APEC) Ministerial Meeting on Food Security, and contributed to the adoption of action plans for “sustainable agricultural development” and “facilitation of investment, trade and market function”. Japan has been promoting RAI”, which aims to harmonize and maximize the interest of investors, recipient countries and local communities with related international organizations harmonize. Japan has been endeavoring to increase agricultural production and productivity by improving irrigation infrastructures in developing regions and promoting New Rice for Africa (NERICA) in Africa. Japan has also been making efforts to promote international cooperation such as technical, financial and food assistance including south-south cooperation and joint assistance by Japan and Brazil. Japan pledged 3 billion dollars at minimum for agriculture related sectors from 2010 to 2012, at the G8 L’Aquila Summit, and has been steadily disbursing it. Japan has built the Asia-Pacific Information Platform for Food Security (APIP), the ASEAN + 3 (Japan, China, Republic of Korea) Emergency Rice Reserve (APTERR), and the ASEAN Food Security Information System (AFSIS), as well as human resource development. Japan extends contribution to the United Nations World Food Program (WFP) to support self-reliance efforts in poor regions and to promote rice farming. Japan also makes contribution to the FAO to improve the information platform on agricultural investment and to formulate policy guidelines for agricultural investment.

(b) Domestic measures

Japan promotes variety of measures to increase domestic agricultural production to achieve its food self-sufficiency target in a comprehensive manner. Japan conducts measures to establish stable trade relations with food-exporting countries while keeping appropriate food stockpile of important crops for food security. Japan’s food security is to be ensured through the combination of these measures. Japan developed a guideline for stabilization and diversification of Japan’s food supply, at a conference on the promotion of foreign direct investment for food security. In order to respond to unforeseen situations such as international conflicts and a drastic decline in import due to global crop shortage, manuals on appropriate actions have been prepared for the government and the public. According to the “Future vision for Food” stipulated by the Government in 2010, new methods are to be introduced to examine and implement response measures to the risks which may give impact to the stable supply of food, such as climate change, fluctuation of energy and material prices, by constantly analyzing and evaluating them.

4. Water Resources

(1) Challenges and goals to be shared

As water directly relates to the life of human beings, full access to water is indispensable from the viewpoint of human wellbeing. Water is the fundamental resource which supports food, economic activities and energy, and is the most important sector for Sustainable Development. With the population growth and urbanization in many countries, global demand for water will unavoidably rise. The issue of already deteriorating water pollution would become worse without new measures.

Therefore, promotion of water resource management by securing safe water in efficient and stable manner is an urgent task for us. Poverty eradication and Sustainable Development will not be achieved without mitigating water-related risks.

The 4th Assessment Report of the Intergovernmental. Panel on Climate Change (IPCC-AR4) of 2007 points out that it is likely that the area affected by droughts increases due to the progress of climate change, and that climate change brings massive impact on water resources. Adaptation to increasing threat on water resources is one of the most important challenges for Sustainable Development.

(2)Necessary measures

The "World Water Vision" ensured at the 2nd Word Water Forum in 2000 stipulated the necessity of securing integrated water resources management participated by all stakeholders, establishment of appropriate pricing mechanisms, improvement of the structure for consolidating river basin management system, especially in international rivers, lakes and marshes. The Istanbul Declaration of Heads of States on Water adopted at the 5th World Water Forum in 2009 points out that a global framework needs to be sought through collaboration in participatory, inter-sectoral and cross-sectoral approaches for water resource management. For example, the G20 Agricultural Minister's Meeting in 2011 referred that sustainable water resource supply and the improvement of water management are important for food security and sustainable agricultural production. It is important to achieve further efficient water use, including irrigation. The Istanbul Declaration also points out that governance in the water sector needs to be improved to strengthen pollution prevention measures of surface and underground water, through the promotion and implementation of collection, treatment and reuse of waste water, by properly employing the Polluter Pays Principle. Securing reliable basic data (on precipitation, flux, etc.) endorsed by global observation science and technology and climate change prediction, and making them visible are the fundamental conditions for diverse sectors to participate and collaborate with each other. The establishment of a global observation system is one of the important measures to expand good water governance such as raising the share of the areas which have access to water resources on a sustainable condition.

The Declaration of the Ministers' Forum for Infrastructure Development in the Asia-Pacific Region in 2010 states that adaptation should be actively promoted together with mitigation, in order to deal with water-related risks such as intensifying and frequent floods, high tides and coastal erosion, numerous drought and water quality deterioration, which are intensified by the impact of climate change. Regional collaboration on water resources needs to be strengthened. In the input document of UNSGAB to Rio+20 as announced in September 2011, the necessity of setting goals of wastewater management, in addition to improvement of access to safe drinking water and basic sanitation which is placed as one of the MDGs target, is recommended in order to protect human health and economic activities together with ecosystem conservation.

(3) Japan's approach

(a) Contribution to the international community

As a top donor of Official Development Assistance (ODA) in the field of water and sanitation, Japan has been contributing to the improvement of water and sewage system, and to water resource management, in order to solve diverse issues related to water. Japan in recent years has been extending technology transfer to climate-change vulnerable countries by human resource development through ODA.

Japan has been leading the international assistance in the field of water and sanitation, by announcing 30 billion JPY grant-aid assistance at the TICAD IV in 2008.

Taking the opportunity of the 3rd World Water Forum, various partnerships and networks have been established. They include the International Flood Network (IFNet) in 2001, the International Network for Water and Ecosystem in Paddy Fields (INWEPF) and the Water Environment Partnership in Asia (WEPA) in 2004. The Network of Asian River Basin Organization (NARBO) was established by the Japan Water Agency, the Asian Development Bank and its Research Institute in 2004. INWEPF is organized mainly by Asian Monsoon Region countries and releases information to the world on the importance of agricultural water used by paddy farming. WEPA is participated by 13 countries, and works to solve the issue of water pollution by enhancing water environment governance in each country, through unified implementation of developing information platform of water environment and human resource development. NARBO contributed to the development of the guideline announced by UNESCO in 2009. In the field of sanitation, the Japan Sanitation Consortium (JSC) was established in 2009 as an Asia-Pacific knowledge hub (international platform), to compile, disseminate and share the knowledge and information on “sanitation”. The Japan Global Centre for Urban Sanitation (GCUS) has been supporting these activities as the platform of industry academia-government cooperation.

Japan has been following up the activities of the International Year of Sanitation 2008 and greatly contributed to the formulation of the “Five-Year Action Plan on Environmental Sanitation Promotion” toward the achievement of MDGs in the year of 2015. Japan has been raising awareness not only on the improvement of sanitation facilities but also on the necessity of wastewater treatment, in the integrated water resource management plan.

Japan will actively use its expertise in the following areas:

i) improvement of ratio of population covered by domestic wastewater treatment facilities, achievement ratio of environment quality standards for water quality

ii) securing and effective use of agricultural water, which has approximately 70% share of the global water use

iii) improvement of the global observation system and its database

iv) joint use of the global observation data of other countries with higher accuracy

v) awareness raising in the international community toward the exchange and sharing of global observation data

International cooperation frameworks on the earth observation have provided various

examples of advanced science and technology activities in order to support the establishment of “Good Governance” in water (resources) management. The major contribution from Japan in this area include the launch and operation by Japan Aerospace Exploration Agency (JAXA) for the Tropical Rainfall Measuring Mission satellite “TRMM”, and the Global Change Observation Mission Water “SHIZUKU (GCOM-W)” , the active use of Global Flood Alert System (GFAS), Integrated Flood Analysis System (IFAS), and Global Satellite Mapping of Precipitation (GS-MAP), Global Mapping, and the African Water Cycle Coordination Initiative (AfWCCI).

Japan will also extend institutional and technical assistance on asset management of growing water resource infrastructures, and on intensified water-related disaster management.

(b) Domestic measures

Japan has overcome serious water shortages, extreme water pollution and land subsidence in the past by improving water management systems through the Water Resources Development Promotion Law and the Water Pollution Control Law, together with strenuous efforts of national and local governments and businesses.

Japan promotes the introduction of cost-effective technologies and earthquake and other natural disaster-resilient facilities, while maintaining and restoring water environment and sound hydrological cycles, as a measure to utilize technology. These measures include efficient use of water resources in each river basin by integrated operation of reservoirs (dams), and the consolidated management of diversified water resources such as rainwater, underground water and surface water. Japan promotes the recycling sewage system which regenerates resource and energy at the same time, and the development of johkasou system as one of the decentralized wastewater treatment facilities which is suitable for sparsely populated areas, in order to achieve effective waste water treatment and sound hydrological cycles. In order to efficiently maintain the functions of an increasing stock of facilities, Japan will continue to establish asset management by utilizing examination and survey old pipes and pipe renewal technology. Principal agricultural irrigation and drainage systems such as dams and head works are the basic infrastructures indispensable for Japan’s agricultural production. Japan therefore reduces the lifecycle costs of these facilities through risk management, in order to maintain their stable functioning and to secure necessary agricultural water supply in each area. Japan promotes maintenance and management of agricultural irrigation and drainage facilities by monitoring, examining, repairing and renewing the functions of these facilities timely and accurately.

Japan conducts the Breakthrough by Dynamic Approach in Sewage High Technology for GHG reduction Project (B-DASH Project) to domestically and internationally apply advanced technologies such as advanced wastewater treatment applicable membrane treatment technology and the energy utilization system for sewage biomass. Japan is working on the international standardization to disseminate water-related technologies and systems to overseas, through for example the cooperation among Japan, China and Republic of Korea on the standardization for the promotion of reclaimed wastewater in urban areas. Japanese local governments and companies are making efforts to flexibly respond to drought risks by climate change, through the introduction of

water-saving equipments and securing diversified water source such as rainwater and recycled water. For example, the Tokyo Sky Tree, the tallest independent radio tower in the world (634m) to be completed in December 2011, contains the “large-capacity chilled/hot water storage“ with the capacity of 7,000 tons in its basement and surrounding areas. This water storage could shift the power peak by utilizing the cold (in summertime) and hot (in wintertime) water produced during the night, for air conditioners needed in the daytime. This storage could also raise energy efficiency by using geothermal power. A system is also being under consideration that this water storage could be used in case of large-scale disasters, for domestic and fire-extinguishing uses. Japan promotes such urban style water system at the local authority level.

5. Biodiversity

(1) Challenges and goals to be shared around the world

We receive various benefits necessary for our life from rich biodiversity and ecosystem such as food, water, timber, medicine, healthy water circulation and climate adjustment. The conservation of biodiversity and ecosystems is important in terms of reducing the risks from natural disasters, as seen by the roles of coral reefs and mangroves in mitigating tsunami damages and the roles of forests in preventing from mountain disasters.

The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets were adopted at CBD/COP10 in October 2010. It was agreed that a life living in harmony with nature should be realized to provide indispensable benefits to everyone, by maintaining ecosystem services and healthy planet through evaluation, conservation, restoration and wise use of biodiversity as a long-term vision to be achieved by 2050. To take effective and urgent action to halt the loss of biodiversity by 2020 was also agreed as a short-term goal. In total, 20 targets have been adopted to be achieved in the short-term, including the integration of biodiversity values into national and local development strategies, the promotion of sustainable use and the conservation of at least 17 % of terrestrial and inland water areas, and 10% of coastal and marine areas through the systems of protected areas by 2020.

The CBD Secretariat is currently considering a set of indicators responding to each target to evaluate the progress. The UN General Assembly announced the year from 2011 to 2020 as “the UN Decade on Biodiversity”. It is important that the Aichi Biodiversity Targets be achieved by 2020 and its progress is checked based on such indicators.

(2) Necessary measures

The following are the international measures needed on biodiversity.

- to stipulate and review legislative, administrative, or political measures including the review of the National Biodiversity Strategies based on the Aichi Biodiversity Targets
- conservation and expansion of protected areas in terrestrial and marine areas
- conservation of rare wild species, establishment of ecosystem networks which secure connectivity and appropriate distribution of wildlife habitats

- to secure resources for relevant projects
- development of financial mechanisms
- assessment of economic value of biodiversity
- conservation and development of tidal flats and algal beds

(3) Japan's approach

Japan exercises initiatives to act as the CBD/COP10 Presidency and to establish Intergovernmental Science and Policy Platform on Biodiversity and Ecosystem Services (IPBES), in order to achieve common goals and contribute to the international community. Japan announced the "Life in Harmony Initiative", which extends 2 billion dollars in three years starting from 2010, in order to assist developing countries' efforts to prepare their national strategies and action plans to achieve their targets, based on the Aichi Biodiversity Targets which are the global strategic plan for biodiversity. Japan established the Japan Biodiversity Fund (1 billion JPY) to support the revision of national biodiversity strategies and action plans in developing countries, and the Access and Benefit Sharing (ABS) Nagoya Protocol Implementation Fund (1 billion JPY), in order to support their efforts to implement the results of CBD/COP10. Japan also established the partnership of protected areas in Asia.

Japan reviews its National Biodiversity Strategy, implements the Law to Promote Biodiversity Conservation, and promotes *Satoyama* Initiative. The Government assists agricultural, forestry and fishery measures, which place greater emphasis on biodiversity, including direct payments to the farming activities which are effective to biodiversity conservation. The Government also supports measures for conserving biodiversity by local authorities.

On marine protected areas, Japan has a numerical target of doubling the amount of the Marine Park Areas in its national parks based on the Natural Parks Act from 2,359 ha in 2009 to the level of approximately 4,700 ha by the end of March 2013.

6. Marine Resources

(1) Challengers and goals to be shared

Fisheries play an extremely important role for employment, culture and economy in addition to stable food supply. CBD/COP10 adopted Target 6 of the Aichi Biodiversity Targets: Living marine resources are managed and harvested sustainably. The world's common goal is to achieve future sustainable use of all fishery resources under proper management in each country or, as appropriate, through the FAO and regional fisheries management organizations (RFMOs).

(2)Necessary measures

In order to deal with the aforementioned challenges, the following measures are needed.

- appropriate resource management based on scientific data
- promotion of measures against Illegal, Unregulated and Unreported (IUU) Fishing
- implementation of the Code of Conduct for Responsible Fisheries, international plans of action

and technical guidelines of FAO

- protection of ocean environment from development such as land reclamation
- conservation and restoration of tidal flats and algal beds
- conservation of important habitats for living marine resources, including the reduction of the pollution load from land-based activities
- promotion of autonomous resource management and the improvement of fishing ground environment by local fishers and local community

(3)Japan's approach

In order to conserve living marine resources, the following measures are important.

i) monitoring and analysis of status of living marine resources
ii) introduction, implementation of and compliance with conservation and management measures based on the resource size and the characteristics of the resources and sea areas
iii) raising awareness on the necessity of sustainable use of resources through conservation and management of them
iv) cooperation with international organizations
v) information exchange and network building with countries within the region

In order to conserve and develop habitats for living marine resources by the end of Japan's fiscal year (JFY) 2011, Japan set out the target to conserve and restore 5,000 ha of tidal flats and algal beds. 4,814 ha have already been covered from JFY 2007 to 2010. Target after that will be followed.

Japan is supporting developing countries by direct technical assistance such as dispatching experts and by indirect technical assistance through supporting the projects implemented by international organizations including the FAO and the Southeast Asian Fisheries Development Center (SEAFDEC). The assistance also includes the improvement of marine protected area database and coral reef habitat map.

7. Forest Conservation

(1) Challenges and goals to be shared

Forests are indispensable for Sustainable Development in their roles of conserving ecosystem, reducing natural disaster risks, and realizing low-carbon society. The international community is expected to achieve i)reversing the loss of forest cover, ii)enhancing forest-based economic, social and environmental benefits ,iii) increasing significantly the area of protected forests worldwide and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably-managed forests ,iv)enhancing capacity building for sustainable forest management , and v)contribution to climate change mitigation by promoting sustainable forest management

(2) Necessary Measures

In order to achieve tangible results, the indicators would be proper implementation of 25 national policies and measures and 19 international cooperation and means of implementation listed in

"Non-Legally Binding Instrument on all type of Forests (NLBI)" which was agreed in the 7th session of United Nations Forum on Forests.

(3) Japan's approach

Forest covers about 70 % of Japan's land area. Japan has conducted various measures including the followings, which are applicable to other countries.

i) development of Forest and Forestry Revitalization plan and legislative measures such as the revision of the basic plan for forest and forestry
ii) recovery and regeneration of coastal disaster-prevention forest, from the viewpoint of recovery from natural disaster and earthquake
iii) proper designation of protected forests in national forest including forest ecosystem protection areas, from the viewpoint of biodiversity conservation
iv) measures related to forest carbon sinks, from the viewpoint of climate change

8. Sustainable production and consumption (management of wastes and chemicals)

(1) Challenges and goals to be shared

In order to achieve Sustainable Development, sustainable production and consumption are critical. Discussions on the"10 Year Framework of Programmes on Sustainable Consumption and Production" are being held at CSD, and an early launch of this framework is needed. The use of resources in production and consumption sectors need to be restrained as much as possible.

Appropriate waste management is especially important for sustainable production and consumption. Agenda 21 includes the minimization of the generation of wastes, encouragement of environmentally sound reuse and recycle of wastes, and the promotion of environmentally sound disposal of wastes, which are succeeded to the WSSD Plan of Implementation. The WSSD Plan of Action sets the target which aims to achieve that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment by 2020. The "Dubai Declaration on International Chemicals Management of Strategic Approach to International Chemical Management (SAICM)" adopted as the international strategy and action plan to achieve this target, shows such as i) unwavering commitment to promoting the sound management of chemicals and hazardous wastes throughout their life-cycle, in accordance with Agenda 21 and the Johannesburg Plan of Implementation and ii) determination to realize the benefits of chemistry, including green chemistry, for improved standards of living, public health and protection of the environment, and resolve to continue working together to promote the safe production and use of chemicals. The SAICM "Overarching Policy Strategy" ensures) to promote the environmentally sound recovery and recycling of hazardous materials and waste and ii) to promote the development of safer alternatives. SAICM "Global Plan of Action" listed up 273 actions which could be taken by governments, international organizations and industries, etc.

(2) Necessary Measures

The following measures are important to realize them.

- introduction and revision of legal framework on environmentally-sound management of wastes
- environmentally-sound management of chemical substances throughout their life-cycle (from production to disposal)
- appropriate and timely safety assessment of existing chemical substances and environmentally-sound management of waste, based on laws and measures on evaluation of chemical substances and regulations of their manufacture, etc
- Environmentally-sound management of waste
- compliance with action plan by each country through the above, for the conversion to sustainable production and consumption
- building a Sound Material-Cycle Society
- prioritization of the 3Rs
- setting indicators and numerical targets
- preparation of disposal facilities and systems
- promotion of green purchasing and green procurement in the government procurement process
- shift to the use of environmentally friendly consumer goods, including the introduction of energy-efficient houses and electric appliances
- Enhancement of international partnership on waste management to provide technical assistance and capacity building on waste management

(3) Japan's approach

Since proposing the 3R Initiatives in the G8 Sea Island Summit, Japan has been actively promoting the 3Rs internationally. Japan has also been promoting various domestic initiatives such as such as;

- enacting the Fundamental Law for Establishing as Sound Material-Cycle Society and other laws on recycling
- amending the Waste Management Law for appropriate disposal
- enacting the Green Procurement Law, in order to promote government procurement of products and services which contribute to reducing environmental burden
- enacting the Green Contract Law to promote the contracts which pay attention to the reduction of GHGs
- enacting the Environmental Consideration Law to promote environmental reporting
- encouraging use and purchase of environmentally-friendly goods and services by introducing eco-points for electric appliance, home eco-point system, eco-reform, eco-action points
- encouraging low-carbon facilities by eco-leasing subsidy program for households and businesses
- promotion of a low-carbon society by subsidizing interest to environmentally friendly management and projects

From the viewpoint of sustainable production and consumption, producers have grave responsibility. Therefore, it is critical that businesses are conducted in environmentally- friendly

manner, through products, production processes and business models to restrain waste generation as well as the conversion to recycling centered society, focusing on emitters responsibility and extended producer responsibility (EPR).

Japan is taking measures considering the WSSD 2020 goal and amended the Act on the Evaluation of Chemical Substances and Regulation of their Manufacture, etc. in 2009 in order to promote comprehensive management of chemicals by conducting risk assessment of all chemical substances including existing chemicals, to regulate their manufacturing, import and use as necessary. Japan also conducts measures on transmitting information which contributes to chemical management in the process of distribution (entered into force in April 2011).

In Japan's Pollutant Release and Transfer Register (PRTR) system, the amount of emission and movement of target chemicals has been reported by private enterprises since its launch has been steadily in decline the system has contributed to the promotion of voluntary chemical management improvement by private enterprises and the removal of obstacles to environmental conservation in advance. Japan has also been taking measures to further improve the existing PRTR system based on the latest situation of chemicals, including the review of target chemicals and target industry sectors of PRTR in 2009 (came into effect in April 2011). In order to promote the response to Globally Harmonized System of Classification and Labeling of Chemicals (GHS), regarding international harmonization of labeling and classification of chemical toxicity, Japan Industrial Standard (JIS), which used to be composed of two parts (Material Safety Data Sheet (MSDS) and labeling), were integrated and the introduction into JIS of the latest GHS document issued by the UN (revised in 2011) has been promoted. Japan is promoting and enhancing its projects such as "Research Project on Chemical Risks" and "Japan Eco & Child Study".

9. Sustainable City Planning

(1) Challenges and goals to be shared

Urban dwellers will increase in numbers and mega-cities are expected to emerge, especially in emerging economies. In such new mega-cities, traditional city planning consuming large amount of resources and energy will give a huge impact on environmental issues such as climate change. Improving the hygiene in the cities is important from the viewpoint or poverty reduction. Sustainable City Planning has become an important task to achieve Sustainable Development.

Local Governments for Sustainability (ICLEI) and the Cities Climate Leadership Group (C40) as well as other progressive local authorities are discussing the issue of sustainable city planning, including building a low-carbon city. It is important to share common tasks and set goals from the viewpoint of city planning at Rio+20, in order to extend these undertakings to the international scale.

(2) Necessary measures

The following measures will be needed to realize the above.

- to introduce disaster-resilient, low-carbon, independent and decentralized energy system which utilizes renewable energy and storage batteries

- to build disaster-resilient, low-carbon, independent and decentralized smart-grid
- to promote the introduction of green buildings with low energy consumption
- to promote Environmentally Sustainable Transport (EST)
- to realize a compact urban structure
- to promote the use of public transport
- to promote areal use of energy and the use of untapped energy
- to promote green conservation and urban greening
- to share the concept of sustainable cities with the international community
- to introduce waste treatment facilities by local administrations
- to reduce the amount of wastes by ensuring segregation and thorough recycling
- to build partnerships between local authorities of developed and developing countries, and promote technology transfer and capacity building appropriately

(3)Japan's approach

"Future City" Initiative was introduced by Japan as one of the 21 National Strategic Projects: in the New Growth Strategy decided by the Cabinet in June 2010. This initiative aims to select qualified cities as a model of "Future City", to support their attempt to generate successful cases in terms of technologies, schemes, serviced and city planning, and to disseminate these achievements nationwide as well as overseas. A "Future City" is a city which could continuously create economic, social and environmental values by generating successful cases, while tackling the environment challenges and aging society with a declining birth rate. First selection of "Future City" will be done by the end of 2012. Japan also intends to collect and disseminate domestic and international best practices in the areas of environment and dealing with aging society with a declining birth rate , to evolve the concept of "Future City".

As a part of efforts to build low-carbon cities, local governments of certain scales have been under the obligation to include policies and measures suitable for each natural and social circumstance to local action plans for climate change protection. The amendment of the Law Concerning the Promotion of the Measures to Cope with Global Warming in 2008 mandated these local governments to add area-wide policies and measures to existing local action plans which had covered only policies regarding their administrative work and project. Under the local action plan, each local authority is required to estimate CO2 emission amount within the area, to set reduction goals, and to include specific actions in terms of promotion of renewable energy and others. Based on this local action plan, each local government has promoted climate change policies proactively and systematically. The Government provides local governments with planning know-hows and takes various financial assistances, supporting efforts by local initiative to create low-carbon societies.

One of specific financial programs is the "Green New Deal Fund", The Government finance a fund set up by local administration to support energy-efficient projects, to create jobs and to build sustainable local economy and society, based on the local action plan for climate change protection. "Challenge 25 Local GHG Reduction Model Project has been conducted to verify effective and

advanced measures for CO2 reduction such as low-carbon transportation system and utilization of untapped energy in urban areas. The cities of Yokohama, Toyoda and Kita-Kyushu have started to "verify the next-generation society and energy system", in order to promote a smart-grid community, by effectively utilizing power and unused energy such as waste heat from factories. The "Verification of Next generation energy and social system" has started to promote smart-communities which include the improvement of local transportation systems. The "Eco Model Cities" has been introduced, to achieve low-carbon society and local revitalization.

The city of Tokyo started to request companies above certain standards to report and disclose their CO2 reduction plans in 2002. The city introduced the upper limit of CO2 emission for large scale offices since 2010. When the buildings with large floor mass are built or extended, the Tokyo metropolitan office requests them to submit construction plan to ensure they save energy are environmentally friendly. The Tokyo metropolitan office also introduced labeling to apartment houses showing how they are energy efficient

Through these measures for greening of offices and apartment houses, CO2 emission from large offices was reduced by 12.7% from 2005 to 2007, and "Green Buildings" have been constructed one after another, with the highest energy efficiency level. Japan is also working for capacity building on waste management in developing countries, through technical assistance.

Disseminating such good practices in Japan and sharing expertise will contribute to the building of sustainable cities around the world and strengthen ties between cities and nations.

10. Construction of Global Earth Observation System

(1) Challenges and goals to be shared

In order to achieve Sustainable Development, innovation in science and technology is indispensable. Above all, to deal with global challenges such as climate change and large scale natural disasters, accurate earth observation data should be collected, analyzed and shared in the international community. In order to share data, information, experiences and ideas across sectors, beyond national and regional boundaries, there should be coordination among global earth observation, climate change projection, data integration and analysis and systems for management and education. Certain function in which various sectors could collaborate and capacity building should be promoted. Sound decision-making will be supported and a resilient society will be built by establishing a network across nations, regions and sectors to share accurate information and generate necessary data.

After the importance of global earth observation was emphasized in the WSSD in 2002, the international community aims at building GEOSS between 2005 and 2015, by integrating information systems and earth observation data from satellites, land, and ocean through international collaboration. It also aims at generating information necessary for the decision-making in the nine fields of disaster, health, energy, climate, water, weather, ecosystem, agriculture, and biodiversity.

(2) Necessary measures

"GEOSS 10-Year Implementation Plan[23]" was adopted as an indicator of performance measurement. For the stable implementation of the plan, "Group on Earth Observation (GEO) is held, to decide concrete actions to be taken once in every 3 years, and qualitatively evaluate the progress of each task.

(3) Japan's approach

As an executive member of "Group on Earth Observation (GEO)", Japan exercises dynamic initiative for the construction of GEOSS by playing a major role in establishing constellation of satellites[24]. Japan proposed the "Global Mapping" project at the Earth Summit in 1992 and plays the central role to develop global geospatial information, in cooperation with National Mapping Organizations and related organizations around the world.

In order to reinforce global earth observation system through GEOSS while improving basic geographical and spatial information on the water system and land shape, the promotion of global earth observation, the improvement of institutions, the disclosure of data, and the construction of the easily used database are needed. Japan promotes a program for integration of global environment information[25]", to sophisticate the "Data Integration and Analysis System (DIAS)" platform, which converts various earth observation data into essential information for the decision-making.

Japan has contributed to the development of the GEOSS by conducting various observation through satellites such as Greenhouse gases Observing SATelite "IBUKI (GOSAT)", which can improve understanding of global carbon cycle dynamics and accuracy of future climate forecast, for monitoring atmospheric CO2 and CH4 and Advanced Land Observing Satellite "DAICHI (ALOS)"for promoting volcanic eruptions and the situation in earthquake hit areas. The Precipitation Radar (PR) on-board Tropical Rainfall Measuring Mission (TRMM) satellite has been observing Radiometer-EOS (AMSR-E) on-board the US earth observation satellite AQUA has been monitoring the Arctic sea ice area. Japan promotes the development of Data Integration and Analysis System (DIAS), by converting integrated various global observation data to the scientifically and socially beneficial information.

Through these activities, Japan has contributed to the development of GEOSS. Japan

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[23] This was formulated at the 3rd Earth Observation Summit in 2005. The 5th Earth Observation Summit (GEO Ministerial Summit) was held in 2010, marking the middle year of this plan, set out "GEOSS Strategic Targets" to articulate the plans in the latter half of the decade.

[24] Toward the construction of GEOSS, Japan implemented the Project to monitor water circulation and climate change in Asian Monsoon Region, the Project to monitor the Tropospheric atmosphere, the Project to monitor global warming and carbon circulation under the "Japan Earth observation system Promotion Program (JEPP)". Japan developed observation satellites: the Greenhouse gases Observing SATellite "IBUKI" , which can improve understanding of global carbon cycle dynamics and accuracy of future climate forecast, for promoting CO2 and CH4, and the Advanced Land Observing Satellite "DAICHI", for monitoring volcanic activities and the situation of disaster hit areas of Japan. In order to promote GEOSS in Asia-Pacific Region, Japan is leading the GEOSS Asian Water Cycle Initiative (AWCI and the GEOSS African Water Cycle Coordination Initiative (AfWCCI).

[25] With the aim of integrating global earth observation data, climate change forecasts, social and economic data into socially and scientifically useful information, which will be provided for policy decisions, sophistication and extension of the "Data Integration and Analysis System (DIAS)" is promoted by this program.

continues research and development which contributes to the solution of global issues, and will contribute to the generation of beneficial information for society, through encouraging observation data integration acquired from satellite, land and ocean observation. Investing in technological innovation in developed and emerging countries and share the fruits of sophisticated science and technology by creating international networks, as seen by the GEOSS, are extremely important for the greening of economy.

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