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Yoko Nitta

Grand Design Towards a More Resilient Society in Japan

Capitalizing on Potential of Communities and Next Sustainability Challenge

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1. Introduction

On March 11 2011, Japan was hit with one of the strongest earthquakes in recorded history, the Great East Japan Earthquake, soon followed by a massive tsunami and was beyond imagination. The prefectures of Miyagi, Iwate, and Fukushima have suffered great damage and people in the affected areas have been endured the unendurable.

During the time of crisis, some advocacy organizations submitted proposals to Japanese Government which are to deliberate and are to issue so that the situation would be ceased and are laid out on this paper for reference. These proposals somehow received attention to the Fourth Science and Technology Basic Plan (the latest one starting 2011), which was approved at a Cabinet meeting and is to be hereinafter described.

Japan Science and Technology Agency (JST)/ Research Institute of Science and Technology for Society (RISTEX) is aware that this crisis should be as an opportunity to tap the untapped potentials in communities and science for society at multiple point of view.

Therefore, RISTEX decided to develop projects in two weeks after the disaster and launched the 'Emergent Implementation- Support Program to respond to the Great East Japan Earthquake', which enable us to help restoration people in affected areas and to stay present to their pain and their rigor. The adopted projects have been running and we look forward to observing their efforts spreading further.

This initiative has been followed by the Sendai Symposium JST/RISTEX organized which proposed how we could cultivate new innovative ideas with the view to hearing what participant's viewer has to say, garnering a wide range of their opinions and changing communities in the devastated areas in a better way.

This report draws together some of the key ideas and extensive discussions covered on the day of the symposium with further examples. Those innovative initiatives in the projects are briefly presented on this paper and we are looking forward to the outputs and results.

According to the circumstances, since a disaster would be a catalyst for better infrastructure or less regulation to promote rebuilding, utilizing S&T could be correct.

Consequently, it impacts on global economy which requires methodological and strategic level approaches to be taken after vast destructions. We see it as our responsibility to share the Japan efforts with our overseas colleagues as well.

RISTEX hopes to make an impact on carrying the recovery from this crisis to revitalize local communities and regions.

Ever since the devastating earthquakes hit Japan on March 11, we have been receiving numerous messages of support and solidarity from our friends and colleagues all over the world. Their messages are in spirit meant for all the people who have been suffering in any way from the ongoing crisis.

We offer our sincere sympathy to everyone who has suffered damage and is still going through the most trying time and our sincere thanks to the experts and to those who participated in this symposium

RISTEX is anxious for improving the situation in Tohoku region with support and collaboration of all concerned so that fewer hazard events develop into disasters.

2. Part 1 : About us

2.1 Principle and Aim of RISTEX

RISTEX is a part of Japan Science and Technology Agency (JST) that primarily functions as a funding agency with a think tank-like capacity.

RISTEX has taken a major initiative to promote research and development to address such social challenges as aging, global warming, safe and security and other issues based on the principle, "science in the society and science for the society".

While collaborating with a wide variety of stakeholders, RISTEX aims to bolster social systems and mechanisms which generate outcomes valuable to the public.

In doing so, RISTEX's research and development (R&D) produce and utilize "know-how" such as evidence-based, scientifically-grounded data, methods, theories, models, policy proposals and tools that contribute to solving social problems making the most of comprehensive knowledge of the social sciences and natural sciences to advance research and development under the mission to help solve social problems. RISTEX Implementation-Support program, which operates with the goal of utilizing and developing the tangible outcome produced from those projects, supports projects which are expected to be applied to society after completed their research and development phase.

2.2 RISTEX 'Implementation – Support Program'

It takes long time to achieve the result by research and development activities for solving the problems in the society. In some cases, the activities might stall in the meantime. Providing support for a limited period of time (no less than one year and no more than three years) to projects that meet these conditions will speed up the application of the R&D achievements in society. It will create a stronger and more independent infrastructure for R&D organizations. This is expected to ensure that R&D achievements can be firmly established in and disseminated throughout society.

3. Part 2: JST/RISTEX Approaches Responding to Great East Japan Earthquake

3.1 Background of JST/RISTEX Approaches in the wake of 3.11 Crisis

Since earthquake has triggered design review for society and communities, RISTEX quickly off the mark to have reacted in light of the recommendations and utilizes all of our accumulated outcome, knowledge and networking for further study of reconstruction and support activities to help solve the problem of suffering people in the devastated areas.

Specifically, RISTEX has implemented publicly soliciting "Emergency Implementation-Support Program to respond to Great East Japan Earthquake" as part of an effort to be engaged in providing information contributing to form plans for reconstruction support. We are looking towards the implementation from multiple viewpoints of economic, social and environmental considerations.

RISTEX has a strong belief in the principle in which communities can also unlock that hidden potential and galvanize people to work together holistically to create innovative responses to local priorities.

Some on-going projects and others in that program which have challenged over the past couple of years to implement their experimentations into society made a difference and gave impact on the field of disaster-prevention countermeasure.

Those cases are presented on this paper and we would like to share with you.

The program has been providing flexible, iterative design processes so that each project enables experimentation and allow for failure without stigmatizing it.

Over the next year, we make sure that we share what we're learning as widely as possible.

3.2 Enhanced existing Implementation-Support Program to respond to Great East Japan Earthquake

- *Toshitaka Katada, Inc. / Director Institute Social Technology, IDA Co., Ltd*
  Disaster Research Center, Gunma University

'Establishing a Foothold for Nationwide Expansion of Tsunami Evacuation Using the Comprehensive Tsunami Disaster Scenario Simulator' developed by Prof. Katada, the emergency drills have been conducted for many years as a role of awareness-raising activities among school children and residents of the city of Kamaishi to create a disaster-resistant community.

Owing to these daily efforts in prevention of disasters education, approximately 3,000 elementary school children evacuated from school calmly and safely during the tsunami rushing and this work was featured in media both inside and outside.

http://www.ft.com/intl/cms/s/0/ce90842a-557e-11e0-a2b1-00144feab49a.html#axzz1WZMezABa (Financial Times March 23)

http://www.edu4drr.org/profiles/blogs/teaching-of-tendenko-saved (Daily Yomiuri April 17)

http://www.asahi.com/english/TKY201103230207.html (Asahi.com March24)

- *Haruo Hayashi, Director and Professor, Research Center for Disaster Reduction, Disaster Prevention Research Institute, Kyoto University*

Professor Hayashi has researched and developed the concept of rapid and fair livelihood support-back-in-order which can convince survivors.

His project has creates a map to locate the damaged houses in cooperation with the Cabinet Office. Also, his team is planning to new technology such as logical location code honor system in cooperation with affected local governments to assist to put people's lives back in order.

- *Satoshi Tanaka Professor, Fuji Tokoha University, Department of Environmental Disaster*

It is essential that the local government conduct a survey of damaged buildings rapidly and issue a certificate to provide livelihood support-back-in-order with victims.

Professor Tanaka also develops package for local government support services.

Iwate Prefectural Government will adopt the 'registration system for survivors.

- *Masaki Saito, Industrial Promotion Division, Oita Prefectural Government*

  (Former Chief Researcher, Regional Resources Division,

  Oita Industrial Research Institute when adopted)

The Great East Japan Earthquake followed by tsunami and it attacked oil tank. This caused the oil spill and massive fire. His project, 'Diffusion and Popularization of Biodegradation Disposal System for Oil Spill Recovery', has developed the method and is ready to provide the oil treatment technology for disposer in affected areas.

3.3 Effort seen at Science Technology and Humanity Research and Development Focus Area to volunteer information

- *Segawa Shiro, Professor Faculty of Political Science and Economics, Waseda University*

Since it is generally thought that Twitter and other social media have played an active role in responding to this earthquake disaster, "Science Media Centre" launched as part of facilitating projects in RISTEX R&D focus area last fall in 2010 and it has collected information using twitter in response to the Fukushima nuclear power plant accident with the support and cooperation of experts, posted on the Web in English.

(URL Science Media Center: http://smc-japan.org/)

3.4 The background to launch of RISTEX Emergency Implementation – Support Program

Only about two weeks after Great East Japan earthquake hit Japan, JST/RISTEX determined to take initiative to solicit 'emergent projects' to tackle challenges for serving people who are suffering from the disaster. In consequence, RISTEX started to solicit them in early April followed by announcing the result of adopting of the projects on May for this program.

The criteria for adopted project are the following, which attributes to the original concept aim of RISTEX Implementation – Support program.

(1) being consistent with the aim of the program (2) areas and institutions are identified

(3) Purpose, method, and effect are clearly defined (4) possible to launch immediately and to ascertain its efficacy within a year

4. Part 3: Sendai Symposium

4.1 Background of Sendai Symposium held at Sendai International Convention Center on August 4th

Four months have passed after the Great East Japan Earthquake occurred and RISTEX has recognized that capitalizing on town and communities which are sustainable–friendly in terms of robustness against disaster, civil society, environment and finance are definitely required, not limited to provide assistance for rehabilitation.

Accordingly, tapping the latent strengths of each community is imperative and collaborating with stakeholders and the approach towards science and technology for society addressing social challenges in the light of community needs and expectations in this regard.

RISTEX organized the symposium at Sendai so as to invite public opinions and to bring in make presentation in various fields by experts.

4.2 Aim of the Sendai Symposium

RISTEX has recognized that utilizing the science and knowledge should be made the most of in line with its tradition, history and its culture to create sustainable communities in the aim of leaving it to the next generation.

Since science and technology far less dealt with disaster caused by tsunami and crisis of Fukushima nuclear power plant than people expected, citizens currently take a harsh view of functioning of science and technology.

Also, as Japan has garnered world-wide attention concerning how Japan will get over this unprecedented catastrophe and how Japan will review and shift the role of science and its function from now on, we have a great responsibility to the world.

JST/RISTEX organized the symposium in such a way as to gather a wide range of their opinions and change communities in the devastated areas in a better way.

4.3 Program of SENDAI Symposium

RISTEX organized the Sendai Symposium at Sendai International Convention Center 10:00 am through 4:30 pm August 4th.

- Opening remark by Emiko Okuyama, Mayor of Sendai City
- Introduction of two lectures playing a major role in response to the earthquake

- *Haruo Hayashi, Professor, Research Center for Disaster Reduction Systems, Disaster Prevention Research Institute, Kyoto University*

He has been involved in issuing disaster survivor certificates following the Great East Japan Earthquake and has already implemented initiatives for restoration.

His efforts such as assistance with survivor relief in affected areas with robust technologies utilizing ICT and issuing disaster victim certificates to the creation of a vision for restoration were presented

- *Junko Nagata, Associate Professor, Graduate School for Creative Cities, Osaka City University*

She has formulated initiatives to ensure that Kansai region worked making use of past experience of the Great Hanshin earthquake such as providing relief materials and opening public housing for victims affected by the quake.

She emphasized on employing a local approach for recovering from the Great East Japan Earthquake utilizing lessons learned after the Great Hanshin earthquake and initiatives taken by the Union of Kansai Governments

- Overview of selected projects of 'RISTEX Emergency Implementation – Support Program responding to the Great East Japan Earthquake' and their progress and outcome

RISTEX Emergency Implementation – Support Program takes initiatives for implementing quick-impact results of research and development for disaster restoration and recovery efforts to affected areas. Six projects that launched this May are expected to deliver a clear set of results within this fiscal year (for eleven months). Those six selected projects are identified at 3-4.

- Underlining the responsibilities and morals of scientists and engineers responding to major earthquakes

- *Hiroyuki Abe, former Tohoku University President*

Emeritus Professor Abe is based in Tohoku region and a survivor of the disaster. He raised questions from a scientist's perspective and provoked how the scientists should be and act. Also he emphasized the importance of communicating the unique voice by scientists concerning the safety of nuclear power plants.

- Vision for restoration and wide-range coordination system

- *Hiroshi Suzuki, Emeritus Professor, Fukushima University (Chairman of Fukushima Prefecture the Recovery and* Reconstruction *Study* Committee*)*

Emeritus Professor Suzuki introduced the vision of recovery in Fukushima Prefecture and required steps to be taken.

He presented the oath that Hellenic Greeks made when they became citizens leaves us with a powerful message:

"We shall leave this city not less but greater, better and more beautiful than it was left to us."

Unless we empower our civic leaders to create beautiful cities, we will not just repeat our past mistakes, but condemn our children to live with them and in them.

- *Masahiro Ueda, Head, Iwate Prefectural University, Miyako College (member of Iwate Prefecture Great East Japan Earthquake and Tsunami Reconstruction Committee)*

Professor Ueda recognizes the responsibilities of prefectural universities towards restoration and recovery in affected areas and is involved in local efforts aimed at restoration.

He proposed that facilitating the environment towards nurturing human capacity and building mechanism for acceptance in local areas is essential for industrial revival.

- *Mikiko Ishikawa, Professor, Department of Urban Engineering, Graduate School of Engineering, the University of Tokyo (the Chair of the Reconstruction Council of Iwanuma, Miyagi Prefecture)*

Professor Ishikawa is a member of the Science Council of Japan (SCJ), which is responsible for providing policy proposals to the government and she proposed initiatives for restoration by means of mutual assistance with cities, agricultural villages and fishing villages at SCJ symposium organized shortly after the disaster for restoration efforts.

She made points of visible bonds from cities providing support to affected regional areas and viability of wide-ranging coordination gaining from the experience of support for 2008 Sichuan earthquake.

- Introduction of two lectures with the theme of restoration and building of robust as well as sustainable regional communities and industries

➢ *Etsuo Kobayashi, Advisor, Hyogo Environmental Advancement Association*

Mr. Kobayashi was involved in administration during the Great Hanshin earthquake and has the depth of knowledge gained at local sites

He reflected creation of 'Sato-Umi', establishing the social system for the healthy coastal sea environment for earthquake restoration efforts.

He presented plot outline of greening towns and collaboration among communities called far-sighted 'Wood s of Amagasaki- 21st century' in Kansa area.

➢ *Tetsu Sato, Professor, Faculty of Tourism and Environmental Studies, Nagano University*

Professor Sato proposed that mutual communication with the roles of scientists in regional areas help to better link regions and the scientific community based on the particular characteristics of the region itself.

He has dubbed these scientists as "resident scientists" and has underscored the need to provide long-term restoration assistance to affected areas by "resident scientist".

- Two lectures given with the aim of providing topics and raising questions

➢ *Masayuki Horio, (Professor Emeritus, Tokyo University of Agriculture and Technology, Professor, Politics, Faculty of Law, Ryukoku University)*

Professor Horio organized a symposium in April immediately after the earthquake concerning the full-scale restoration followed by the unprecedented earthquake from the perspective of combating global warming and developing environmentally-friendly society that is firmly rooted in the environmental aspects of the local region. ***He has been working on renewable energy source possible from the regional recycling.***

➢ *Kimiro Meguro, Professor and Director, International Center for Urban Safety Engineering, Institute of Industrial Science, the University of Tokyo*

Professor Meguro has conducted research into urban infrastructure systems for providing a safer, more fulfilling lifestyle.

He emphasized on creative reconstruction which will be a cornerstone for the prosperous future.

It is crucial to be ahead of time in holistic approaches to ageing and green processes collaborating with government, local municipality, industries and people living in affected areas.

He proposed integrating the system of public-help, mutual-help and self-help based on innovative way of thinking.

4.4 Outline of six selected projects for assisting restoration of affected areas

- Integrated activity program for improving the living environment of the communities consisting of emergency temporary shelters

  - *Fuminori Tanba, Associate Professor, Faculty of Administration and Social Sciences, Fukushima University*

- Fukushima Prefecture

Infrastructure development is accommodated on both physical and mental level during the construction of emergency temporary shelters as a means of maintaining and resurging community. This helps to provide a more comfortable lifestyle environment and protection for temporary shelters to suit mountainous regions and areas with heavy snowfall.

Steps are taken to attempt to improve lifestyle environment from both physical (assembly halls, clinics, temporary housing with care facilities, community busses, etc.) and mental (assistance for protection, learning environment for children, volunteer centers, etc.) aspects as a way of enhancing the QOL(Quality of Life) of those affected by this great disaster.

The implementation of physical and mental aspects of these activities applies to the 4,000 temporary emergency shelters constructed by local business out of the 24,000 total temporary emergency houses in Fukushima Prefecture.

- Rape blossoms project for the recovering of the salt-damaged farmland by tsunamis

- *Yutaka Nakai, Vice Dean, Graduate School of Agricultural Science, Director, Innovative Research Center for Agricultural Sciences, Professor, Laboratory of Sustainable Environmental Biology, Division of Resources Recycling System, Tohoku University*

- Miyagi Prefecture

The Graduate School of Agricultural Science, Tohoku University only possesses brassicaceous crops gene bank in the world. Species from brassica family are selected for their suitability to various concentrations of salt in soil.

Species from the brassica family are planted in affected areas to suit the concentration of salt there.

Affected areas will be colored with rape blossoms by the time next spring and will create scenery that symbolizes both recovery efforts for agriculture and evironmentally -friendly energy. Rapeseed oil obtained from these rape blossoms fields can be put to use as oil for lighting and biodiesel, which marks the literal flame of recovery.

- Assessment of the soil pollution by heavy metals in the areas damaged by the earthquake disaster

- *Noriyoshi Tsuchiya, Professor, Geo-material & Energy Lab. Graduate School of Environmental Studies, Department of Environmental Studies Solar and Terrestrial Systems and Energy Sciences Geo-material and Energy , Tohoku University*

- Miyagi Pref.（Miyagi Prefectural Government）

Soil samples are taken from tsunami-affected areas to determine geochemical content and conduct water and hydrochloric acid elution test as a means of evaluating the risk of soil contamination.

Methods of sequential extraction and stepped filtration both developed by our research department are used to determine the chemical form of heavy metals such as arsenic, to assess

the risk of leaks to the surrounding environment and to propose appropriate disposal methods that can be employed during emergencies.

In addition, information on mines stored in the Geosphere Environmental Informatic Universal System (consisting of more than 6,000 cases from around Japan) is utilized to provide safe inspection for highly dangerous closed mines.

- Large-scale micro bubble generator for the revitalization of aquaculture industry and resurrection of sealed off areas

- *Hirofumi Ohnari, Professor, Tokuyama College of Technology*

- Ofunato City, Iwate Pref. (Ofunato City Fishery Association)

System of large micro bubble generation for water depuration (protection against oxygen deprivation) will help resolve issues surrounding the fisheries industry in the Ofunato Harbor area, which was devastated by the huge tsunami triggered by the major earthquake.

Specifically, 100 large micro bubble generators developed for Ofunato Harbor are installed in the sea where circulation is most likely to occur to help depuration of water of the bay of several hundred meters.

Smaller micro bubble generators are also be utilized to prevent the mass death of bivalves, revitalize, clean and sterilize, and improve overall quality with progress of aquaculture in the area.

- Offering fair evaluations of fatigue levels and providing assistance against disease prevention for those affected by the Great East Japan Earthquake and for aid workers

- *Toshiko Yoshida, Professor, Graduate School of Nursing, Dean of School of Nursing, Miyagi University*

- Kesennuma City, Minami Sanriku-cho, Miyagi Prefecture

Method to evaluate such as autonomic function, oxidative stress, sleep-wake rhythm and salivary viruses enables to develop a fatigue diagnosis system to check suitability for work and detect diseases objectively. The system is being used to check the health conditions of those affected by the disaster, as well as of those providing assistance in affected areas, including medical workers, municipal officers, welfare agency workers, and self-defense force and police force members, as a means of preventing death from overwork or sudden death, as well as the outbreak of other diseases.

- Implementation of hygiene measures in the damaged areas through the installation of bathrooms which can separate feces and urine from each other without using water and preparation for a strong urban foundation against disasters

  - *Yoshihisa Shimizu, Professor, Research Center for Environment Quality Management , Graduate School of Engineering, Kyoto University*

- Ishinomaki City, Kesennuma City, Minami Sanriku-cho, Miyagi Prefecture

This project aims to take place of diffusing hygienic and comfortable toilets which can be installed easily and have been specifically designed echoing the sentiments of affected people.

Efforts are also underway to develop a system that is capable of coping with disasters that may strike in the future.

To achieve these goals, the following four items are enacted during the activity period.

(1) Redesigning, manufacturing, redefining and diffusing modified seat units that upgrade existing toilets to urine diversion toilets

(2) Redesigning, manufacturing and redefining portable urine diversion toilets for emergency use

(3) Redesigning urine diversion toilets for both ordinary and emergency use incorporating urine diversion function

(4) Developing plans for new night-soil treatment and sewage systems

4.5 Panel Discussion Summary

Thought-provoking and active discussions were raged and followings were pointed as interest toward the reconstruction plan at panel discussion.

- ✓ Not only documentation but visualization for taking concrete actions
- ✓ reconstruction and the recovery/ rebirth of communities
- ✓ rectifying disparities among regions for fisheries and large scale integration for farming industry
- ✓ incorporating both technology and institutions from tangible and intangible side
- ✓ remodeling modern-era including examining for applying renewable energy

4.6 Sum and Substance of the symposium raised by audience for reconstruction

- ✓ aiming at serving as a foundation for future, withstanding the evaluation and appealing at international sympathy
- ✓ setting people's lives and minds as a matter of high priority, aiming for community feature-conscious victims relief and quality-of-life improvement
- ✓ linking knowledge beyond boundaries in communities, organizations and fields, full-mobilizing to promote wide-range cooperation and the method of pairing- up support
- ✓ promoting grand design, mapping out a participatory and realistic strategy, making it visualize and carrying it out steadily
- ✓ incorporating technology and institution from the aspect of tangible and intangible for developing the system of public-help, mutual-help and self-help based on innovative way of thinking, taking advantage of them for creating robust, resilient and sustainable community / society and giving the system back to nationwide and world at large

Lessons learned and Way Forward

(Arimoto - Director General of RISTEX)

All the people taking the rostrum at the Sendai Symposium are committed to assessing the affected areas accurately what has been required and entered sites immediately after the earthquake. Therefore, they have been making a substantial effort to implement the outcome of R&D in regions and for expanding further into larger areas.

They offered numerous inspiring suggestions through their hands-on approach experience as well as viewpoints, which made the panel discussion more fruitful one. .

Crossing the boundaries is crucial for the quake reconstruction. As a keyword, moving beyond the field, business, the organization, the generations, and the border will make it possible to find the new value for reconstruction.

At the Sendai Symposium, we invited opinions of participants from affected areas and discussed how to make communities and regions in northeastern Japan affluent and vibrant.

Those ideas, opinions and discussions will be utilized in designing new R&D focus area of RISTEX (to be launched in April, 2012) to make the society more robust, resilient to various threats and sustainable.

The consequences emerged through the disaster are : Ⅰ) transformation of values, society, industry and technology, Ⅱ) the necessity to strengthen the horizontal cooperation, Ⅲ) community-based reconstruction and rebirth habilitation.

I hope that further discussion will be continued on the innovative ideas through this symposium.

Thus, RISTEX will be pursing to create a stir in redesigning untapped communities in Japan and shall emphasize on the use of the available results and interweave with them.

We need to take too seriously for what is capable of doing for the reconstruction and for why they had to pay the ultimate price by this disaster.

"Where Do We Come From? What Are We? Where Are We Going? "

(originally written in French by Eugène Henri Paul Gauguin, French Painter, D'où venons-nous ? Que sommes-nous ? Où allons-nous ?) :

For Reference: Voice from advocacy organization to Japanese Government

The Council for Science and Technology Policy (CSTP)

CSTP is established within the Cabinet Office in January 2001, the command center for Japan's integrated efforts to advance science and technology (S&T) in a comprehensive and well-planned manner.

CSTP has been advocating that 'Knowledge and technology are precious resources for the future development of Japan and with research and development as its base, S&T policy creates new knowledge and is an important key to revitalize the economy'.

CSTP has implied that the Great East Japan Earthquake is the threat to revolutionize for

social and economic structures of Japan.

It has suggested that taking new efforts be a must, not just extending previous ones just for the sake of it.

CSTP is to increase the recognition of scientific and technological and is to conduct a review of technological system and on its management.

http://www8.cao.go.jp/cstp/english/index.html

Japan Federation of Economic Organization (Nippon Keidanren)

Nippon Keidanren is a comprehensive economic organization born in May 2002 and its mission is to accelerate growth of Japan's and world economy and to strengthen the corporations to create value to transform Japanese economy into one that is sustainable and driven by the private sector, by encouraging the idea of individuals and local communities.

Keidanren has been enhancing the re-examining for the review of the fourth Science and Technology Basic Plan. The result of a reviewing the 4th Science and Technology Basic Plan questionnaire shows the following

*creating persistent innovation contributing to building a safer and securer nation in light of 'green innovation' and 'life innovation', which are imperative pillars in a future society.

* adopting hands-on approach and reaching consensus on planning and practice for restoration and reconstruction

* forming a plan for reconstruction and technical development plan based on conducting in-depth research for affected areas and clarifying the personnel, physical and institutional problems

* providing a thorough simulation, system-wide analysis and evaluation from the perspective of risk management

*promoting collaboration at international level gathering the knowledge and wisdom of society

on the basis of the experience of earthquake-affected in Japan

http://www.keidanren.or.jp/english/policy/2011/054.html

Science Council of Japan (SCJ)

As an organization representing Japan's scientists, by coordinating the experts of all scientific and technological aspects, the Science Council of Japan has been deliberating and issuing the report and recommendations.

To overcome early nuclear accident in Japan is the responsibility of government, SCJ conducted a preliminary compiled Present state and future challenges of a nuclear accident. We address the needs of the world in cooperation with the Academy.

http://www.scj.go.jp/en/index.html

The Fourth Science and Technology Basic Plan (FY2011-FY2015)

As noted above, efforts towards supporting reconstruction for earthquake incorporated into the Fourth Science and Technology Basic Plan were approved at a Cabinet meeting.

This plan has emphasized that it will contribute to responding to the Great East Japan Earthquake.

Japan sets a long period of sustainable growth and development of the society as the core of the stance to work toward and achieves safe and the high quality of life.

http://www.mext.go.jp/component/a_menu/science/detail/__icsFiles/afieldfile/2011/08/19/1293746_02.pdf (Japanese only)