Recommendations

Recommendations from Science Council of Japan (SCJ) – with Confident Steps towards Reconstruction –

April 9, 2012

Science Council of Japan

Committee on Supporting Reconstruction
after the Great East Japan Earthquake

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I. Background and composition of the recommendations

1 The Great East Japan Earthquake and restoration/reconstruction efforts

(1) Various reconstruction issues and the necessity for recommendations from Science Council of Japan

The Great East Japan Earthquake that occurred on March 11, 2011 off the Pacific Ocean of the Tohoku Region was the 4th largest earthquake recorded in human history, with a moment magnitude of 9.0. It was a very complex disaster because of an accident that occurred at the Fukushima Daiichi (No. 1) Nuclear Power Station of Tokyo Electric Power Co., Inc. (TEPCO) which was triggered by a total loss of power after seven Tsunamis extending from 30 minutes to 6 hours after the earthquake occurred.

An outline of the damage (nationwide) of the Great East Japan is as follows.

- Total deaths: 15,852
- Total missing persons: 3,268 (as of the end of February 2012)
- Completely destroyed houses: 128,753
- Partially destroyed houses: 245,383
- Number of evacuees: 343,000
- Number of temporary housing units (including leased): 130 thousand
- Total cost of the resulting damage: 16.9 trillion yen (Cabinet Office)
  (Total cost of the damage resulting from the Great Hanshin-Awaji Earthquake: 9.6 trillion yen (National Land Agency))

The human damage and property damage resulting from the Tsunamis were both unfathomable, while the disaster also deprived the disaster victims/disaster-stricken areas of both their residences and places to work. Despite having severe psychological trauma in addition to having suffered damage to their property and had their lives inconvenienced by having to live at temporary housing the victims are still proceeding with restoration/reconstruction activities in thereby realizing a permanently safe society. When reconstructed they must be “communities resilient to disasters” in a multi-faceted sense. In addition, people cannot make a living unless industries that can sustain the disaster-stricken areas steadily take root, with job opportunities then being ensured by those industries. Furthermore, many people have been forced to evacuate for an extended period of time due to the nuclear power plant accident, thus establishing a long-term health management system for those who fear having been exposed and decontamination measures in the areas where radioactive materials were deposited are posed as imminent issues.

These various reconstruction challenges thus require the specific provision of

desperately needed knowledge to the victims through mobilization in the various fields of science, which is precisely the duty of Science Council of Japan (SCJ). As described later the 21st Term SCJ committed itself soon after the occurrence of the great earthquake by setting up the Great East Japan Earthquake Task Force, issuing urgent recommendations on seven consecutive occasions, and so on. At the inception of the 22nd Term SCJ in October 2011 the Committee on Supporting Reconstruction after the Great East Japan Earthquake was established to succeed the Great East Japan Earthquake Task Force. On November 16 the Sub-Committee on Building Disaster-Resilient Communities, the Sub-Committee on the Promotion of Industry and Employment, and the Sub-Committee on Counter-measures for Radiation were set up, and then intensive respective deliberations took place. These recommendations are the compiled results of their deliberations.

(2) Restoration/reconstruction

In response to this unprecedented large scale disaster the government and Diet have already secured a reconstruction budget of a total of 15.1 trillion yen, which consists of a 1st supplementary budget in early May (4.0 trillion yen), 2nd supplementary budget in July (1.9 trillion yen), and 3rd supplementary budget in November (9.2 trillion yen). The total reconstruction budget is estimated to be 19 trillion yen over five years and 23 trillion yen over 10 years, and which will be financed by a special reconstruction taxation of 10.5 trillion yen[1] and non-tax revenues, being in addition to reconstruction bonds of 12.5 trillion yen. It is of vital importance to the sustainability of our economy and public finance, and not just limited to the disaster-stricken areas, that the enormous reconstruction budget should be appropriately allocated in thereby creating jobs and thus incomes.

Furthermore, new reconstruction laws, including the Basic Act on Great East Japan Earthquake Reconstruction, the Special Reconstruction Zone Act, the Act for Establishment of the Reconstruction Agency, and the Act on Establishment of Regions Resistant to Tsunamis have been enacted, with the reconstruction system thereby taking shape.

In contrast, and with the disaster-stricken areas, reconstruction plans had already been formulated by December 2011 for the major disaster-stricken prefectures of Iwate, Miyagi, and Fukushima. The disaster-stricken municipalities extend across 11 prefectures and a total of 222 municipalities nationwide (districts subject to being special reconstruction districts).

[1] Based on the Act on Special Measures for Securing Financial Resources Necessary for Reconstruction that was enacted on November 30, 2011, it will be financed by 7.5 trillion yen via an increment in income tax of 2.1% starting from January 2013 for a period of 25 years, 0.6 trillion yen via an additional 1,000 yen from residential tax for a period of 10 years, and 2.4 trillion yen via a freeze on tax cuts for corporate income tax for 3 years that is being planned for from April next year.

Reconstruction plans have already been formulated for the approximately 40 municipalities along the Pacific coast of East Japan that were particularly damaged. The abovementioned reconstruction plans are more advanced in that they require a greater level of safety in anticipation of repeat Tsunamis rather than just restoring the areas to their original condition.

Nevertheless, quite a few areas are yet to have commenced upon land elevation work that is essential in their restoration, or even any actual reconstruction. Basically the present situation is at the most difficult time and labor consuming phase, with the consensus of residents in the disaster-stricken areas concerning the foundation of each reconstruction plan needing to be reached, and the plan materialized in combination with the state budget as well as the system. However, their populations tended to have been declining in excess of the national average even before the disaster. It should also not be overlooked that in the last year a substantial population drain that was much larger than the decrease in population over the previous five years occurred has taken place because of the disaster, thereby placing the communities in an extremely severe socio-economic situation.

Acceleration of the reconstruction efforts at this stage in the appropriate order of priority should therefore prove significant in determining the future state of our country as a whole, along with the disaster-stricken areas.

2 Engagements of SCJ to date and responses (related recommendations of the 21st Term)

In response to the Great East Japan Earthquake the 21st Term SCJ held an urgent meeting on March 18, 2011. Confirmation took place at the urgent meeting that SCJ would be responsible for providing society with methods of utilizing science and technology to create a new Japanese society that can be succeeded to by the next generation without any undue worries. It was also determined that SCJ should provide advice and cooperate in all efforts made in the restoration/reconstruction from the Great East Japan Earthquake, and also to receive information and proposals from scientists and engineers from the rest of the world, not merely Japan, and then compile them in an appropriate manner for effective dissemination. The Great East Japan Earthquake Task Force was set up on March 23 to fulfill that purpose.

The Great East Japan Earthquake Task Force issued the 1st to 7th emergency recommendations regarding the preparation of a comprehensive system to use in assisting victims and reconstructing the disaster-stricken areas, measures to use with the disaster wastes, and the importance of the stance of gender equality, etc. <1-6, 9>. In particular our recommendation on “pairing support” based on the idea of horizontal cooperation between municipalities <1>, recommendations regarding a large scale survey on radiation doses by a number of measurement professionals <2>, recommendations regarding the use of domestic robot technology <5>, etc. have been reflected in specific collaborations between municipalities, government policies, and activities in the disaster-stricken areas, etc.

In addition the “Subcommittee on Grand Reconstruction Design for the Disaster-Stricken Areas”, the “Subcommittee on Options with Energy Policies”, and the “Subcommittee on Influence on Health and Protection against Radioactivity” were set up under the Task Force, with plans and specific measures then being proposed to the government and related organizations regarding the restoration/reconstruction that were underway. A research report on the direction of Japan’s future energy policies was also presented to the society in order to stimulate national debate. This has contributed to various internal discussions taking place at the governmental level <7, 8, 10, 11>.

Furthermore, research and deliberations have also taken place within each department and committee of the respective fields, with recommendations such as measures to protect children from radiation exposure due to the nuclear power plant accident <12>, measures for restoring the marine products industry <13>, and employment support/industrial reconstruction measures <14>, etc. then being made in cooperation with the Great East Japan Earthquake Task Force. The Task Force has constantly deliberated upon some of the content of those recommendations.

Information has also been disseminated to both the people and researchers, including

publishing “For a Better Understanding of Measures for Radiation Protection” (SCJ President’s Comment) <15> as an explanatory activity to a wide range of people and by holding open symposiums with themes such as the social responsibility of scientists with regard to the Fukushima Daiichi Nuclear Power Plant accident and the media coverage of the Great East Japan Earthquake, etc. (refer to <Background Information 2>). SCJ President’s Comments have been constantly posted on the website of the Reconstruction Headquarters in Response to the Great East Japan Earthquake of the government.

With regard to dissemination of information overseas a report on the nuclear power plant <16> was provided to overseas academic circles, although the available information was limited, and urgent recommendations promptly translated into English for disclosure on the English website of SCJ. In response to this both sympathy and support has been expressed by the academic circles of respective countries. The academy of France (Academie des Sciences) in particular organized special committees that involve fields of earthquakes, Tsunamis, radiation, and medical care, and which had compiled a report in English entitled “Solidarity Japan” by the end of June. A representative of the academy then visited Japan to deliver the report to the SCJ President Hirowatari (21st Term).

After reviewing all these activities SCJ issued a Statement of the Executive Board of SCJ “Reconstruction from the Great East Japan Earthquake and Responsibility of Science Council of Japan” <17> (refer to <Background Information 2> for the Report on the Great East Japan Earthquake from the 21st Term SCJ).

3 Efforts and Course of Deliberations of the 22nd Term SCJ

The 22nd Term SCJ commenced in October 2011. One of the first committees to be established was the Committee on Supporting Reconstruction after the Great East Japan Earthquake, which had been held over from the previous Term, to deliberate on various matters and in support of the reconstruction from the Great East Japan Earthquake. Under this Committee three Sub-Committees, namely the "Sub-Committee on Building Disaster-Resilient Communities", which discusses ways of building communities in the disaster-stricken areas, the "Sub-Committee on the Promotion of Industry and Employment", which discusses ideal support for reconstructing industries and employment, and the "Sub-committee on Counter-measures for Radiation", which discusses measures to use in the regions, mainly Fukushima Prefecture, that received radiation damage due to the Fukushima Daiichi Nuclear Power Plant accident, were then established to hold intensive deliberations toward the end of the first year after the earthquake disaster in March 2012 and recommend measures that the government, etc. should be prompt in taking. The structure of and course of the deliberations that were held by the Committee and the Sub-Committees are as provided in <Members of the Committee on Supporting Reconstruction after the Great East Japan Earthquake> and <Background Information 1>.

These recommendations are summarized results that were compiled from the recommendations of the three Sub-Committees. Refer to the recommendations made by the respective Sub-Committees for the background and course of the discussions that led to the content of the respective recommendations. In compiling these recommendations a period for listening to the opinions of all the Council Members/ Members was established. Although the period was insufficiently long 73 comments were collected for use in the (proposed) recommendations. These recommendations were the compiled results after having examined all the comments and making necessary modifications. The reason the opinions of all the Council Members/ Members were listened to while the period was insufficiently long was that the deliberations had taken place at various other opportunities within SCJ but outside the Committee/Sub-Committees. They are provided in <Background Information 3>.

In addition to the deliberations of the three Sub-Committees the Committee on Supporting Reconstruction after the Great East Japan Earthquake deliberated on the theme of "On Cross-regional Processing of Disaster Wastes" from the point of view of facilitating the processing of disaster wastes would also promote reconstruction. Recommendations were made on proceeding with the cross-regional processing where necessary but while also placing the highest priority on reuse within the prefectures.

II. Recommendations

4 Recommendations on building disaster-resilient communities

More than a year has passed since the Great East Japan Earthquake and reconstruction efforts are now fully in progress in the disaster-stricken areas. The disaster-stricken municipalities extend over 11 prefectures and a total of 222 municipalities nationwide (districts subject to being special reconstruction districts). Reconstruction plans have already been formulated for the approximately 40 municipalities along the Pacific coast of East Japan that were particularly damaged. The municipalities selected 40 appropriate businesses (core businesses) that could be utilized in the reconstruction efforts according to the situation with the disasters and reconstruction plans, and implemented them along with additional businesses that would promote their effectiveness. Efforts to build safer communities have therefore been commenced upon.

Reconstruction from the Great East Japan Earthquake, however, involves particular difficulties when compared to previous disasters. Restoring the Tsunami-stricken areas, in particular, to their original state does not eliminate the risk of them being struck by further Tsunamis again in the future, and thus the issue involves how to reconstruct them while also securing their future safety. Proceeding with community building for reconstruction based on the idea of disaster mitigation in thus protecting human lives and reducing property damage through disaster prevention facilities such as breakwaters and seawalls, etc., community building in safe locations, and evacuation is therefore important. These recommendations are being made from the following seven points of view and in consideration of issues in the present stage of reconstruction from the disaster.

(1) Creation of disaster-resilient national land

The following recommendations are being made as measures to be implemented over the short-term, and with the re-organization of national land infrastructures with improved resilience to disasters and the necessity of distribution and backing up of the capital functions and private central management functions that are concentrated in Tokyo all taken into account.

[1] Creation of a Disaster Mitigation Agency – At the stage when the completion of the reconstruction from the Great East Japan Earthquake is in sight the Reconstruction Agency shall be reorganized into a Disaster Mitigation Agency and function as a permanent control center for consistent disaster/damage estimations, disaster mitigation measures, and disaster reconstructions.

[2] National Land Use Plan for withdrawing from disaster-hazard areas and corresponding guidance measures – In regions at significant risk, as identified through estimating the disaster/damage, rules for limiting residential land use or taking safety measures with buildings shall be established.

[3] Respect for the recuperative power of nature – With national land management, and in consideration of the majority of domestic areas being based on natural land use, various national activities in maintaining natural areas shall be encouraged in thereby gaining greater understanding of natural processes and attaching greater importance to its ideal use with respect for the recuperative power of nature.

[4] Structural reinforcement of buildings/facilities – Civil engineering structures, including breakwaters, seawalls, levees, dams, railroads, roads, and port facilities, etc., shall be reinforced to the necessary level. The earthquake-proof safety of large-scale factory facilities, including petroleum plants and power generation facilities, etc., shall be improved upon.

The earthquake resistance of buildings shall be further improved in large cities with concentrated populations in increasing the number of buildings in which people can seek refuge in a disaster.

[5] Strengthening of the software side of countermeasures – Efforts shall be made in the software side of countermeasures, including evacuation drills, establishment of fire brigades, and emergency earthquake alarms, etc.

[6] Backing up of the capital/key functions – The functions of the central management functions of the government and economic activities shall be backed up in areas that are not at risk of simultaneous disasters, thereby distributing the risk of them being lost.

(2) Building sustainable reconstructed communities

The disaster-stricken areas are socially vulnerable, such as having declining/aging populations, etc. At present the "Basic Reconstruction Plan" formulated by each municipality is based on the idea of maintaining the status quo, although with this actuality having been recognized, and thus involves a variety of issues. The following recommendations are therefore being made.

[1] Formulation of action plans for sustainable reconstruction – A third party organization consisting of community building experts, etc. shall be promptly established to inspect the "Basic Reconstruction Plan" of municipalities from a long-term, broad-based point of view, and create concrete action plans toward "sustainable reconstruction".

[2] Establishment of community-based "reconstructed community building organizations" – Community-based careful "reconstructed community building organizations" need to be set up in rapidly reconstructing the disaster victims' daily lives. In order to achieve this, a system that can be used to secure financial resources and dispatch human resources shall be established. In addition to active inclusion of females at disaster prevention/reconstruction meetings, etc., consideration shall be given to the point of view of gender equality being reflected in the formulation of disaster prevention/reconstruction plans, etc.

[3] Planning of regional reconstruction strategies that center around public and public-benefit facilities, including day-care centers, kindergartens, schools, and welfare facilities for the elderly, etc. – Regional reconstruction strategies that center around public and public-benefit facilities, including day-care centers, kindergartens, schools, public halls, and welfare facilities for the elderly, etc., and step-wise reconstruction strategies that take the reconstruction of communities into consideration shall be planned.

[4] Coordination of coastal area land use from a broad-based perspective of the wider area – In the destroyed coastal areas, administrations, people, and NPOs shall cooperate in formulating broad-based coastal area plans that not only enable the restoration of residential/production bases but also the restoration of the natural environment and improvement of biodiversity from a broad-based perspective of the wider area.

[5] Formation of "Natural Symbiosis Cities based on the Watershed Landscape" – The traditional relationship of the circulation of watershed areas in remote mountains, country side forests, towns, fields, and beaches shall be reviewed from the point of view of new energy strategies and the sustained maintenance of fishing grounds as a common resource, and "Natural Symbiosis Cities based on the Watershed Landscape" formed.

[6] Development of renewable energy policies – The coastal areas and country side forest areas located to the rear of the disaster-stricken areas shall be positioned as development bases for renewable energy, and establishment of self-sufficient distributed systems shall be part of the reconstructed community building process.

(3) Measures toward greater utilization of information

The following recommendations are being made from the perspective of information utilization and broadcasts and with respect to a more disaster-resilient society.

[1] Securing means of conveying information on preparing for disasters and

establishing judgment/action guidelines – Technical issues related to the reliability and stability of emergency communications in the case of disasters shall be resolved, and a system for rapidly disseminating accurate disaster forecast information through the utilization of television, radio, broadcasts within the jurisdiction of municipalities, cellular phones, and the internet shall be created. In addition, policies for making judgments and performing activities of individuals shall be established.

[2] Promotion of information collection/accumulation on disasters and subsequent data integration – Various information that ought to be permanently stored and made available to experts for analysis, such as information on the voluntary evacuees and the radiation doses due to the Fukushima Daiichi Nuclear Power Plant accident, etc., should be integrated and then disclosed to the public, and therefore standard data formats and guidelines on visualization shall be established for its utilization.

[3] Implementation of measures that ensure the safe keeping of social information assets – In preparing for wide-area disasters the establishment of a system for backing up social information assets such as administrative documents and medical care/nursing information shall be established, and discussions shall promptly take place on the introduction of a wide area medical cooperative system, a system to accumulate health information/dispensing information, etc., and electronic medical records.

[4] Promotion of training/placement of information professionals – Human resources that are capable of making practical responses through utilization of their knowledge on information management shall be trained and placed for continuous information framework operations and to support information utilization by residents.

(4) Ideal medical care/nursing/welfare in the disaster-stricken areas

The following recommendations are being made in consideration of not only the importance of how to handle medical care/nursing and social welfare in the case of disasters but also the fact that disasters can seriously affect the vulnerable people, in particular the elderly, females, children, and persons with disabilities, etc.

[1] Formation of health, medical care, and welfare organization networks in regions that can provide flexible responses when urgently needed – Regional health, medical, and welfare institutions shall establish well-acquainted relationships in ordinary times, and measures such as establishment of cross-institutional bases and ideal cooperation, information provision, and information sharing, etc. be discussed.

[2] Establishment of support measures for groups that are vulnerable to disasters – A sense of all being “in the same boat” shall constantly be developed in communities, and

a cooperation system between medical professionals and local residents, including welfare volunteers and neighborhood self-governing bodies, etc. established.

[3] Preparation and enrichment of mental health care – Provision of mental health care by mental health care expert teams consisting of infant education counselors, school nurses, clinical developmental psychologists, and clinical psychologists, etc. for children of infant and school age shall be promoted. Creation of a "foster parent system" for orphaned children and a "community evacuation system" to safe areas for families, communities, and persons with mental disorders in cooperation between the government and municipalities shall be discussed. In addition, responding to (prevention/early diagnosis of) mental disorders triggered by stress due to unemployment or changes in their residential environment is important with the younger age group through to the middle age group. These are urgently needed from the point of view of respecting human life.

(5) Establishment of victim support system and personnel training

The following recommendations are being made on developing a system for promoting care measures according to the level of stress that the disaster victims suffered.

[1] Preparation of needs maps concerning the relief of victims and information gathering – Needs map that collate the individual needs of the disaster victims shall be prepared, and information collection "stations" for ensuring support is provided according to those needs established.

[2] Creation of nation-wide networks by municipalities, private organizations, and academic societies, etc. – Nationwide networks shall to be established in advance by municipalities, private organizations, and academic societies, etc. in thereby ensuring timely support is provided to the people in the disaster-stricken areas or supporters when needed.

[3] Training of disaster-care professionals who can take the initiative in providing disaster support and promoting relevant research – Environments for accumulating experience from past disaster support and studying disaster care shall be established, and training of disaster care experts conducted at graduate schools who can lead in disaster support and play the role of being global leaders who are also capable of conducting education and research activities.

(6) Preventive measures to mitigate disasters resulting from the potential Tokai/Tonankai/Nankai Trough earthquakes and Tsunamis

The following recommendations are being made with the aim of rational use of national land that takes large-scale disaster risks such as earthquakes and Tsunamis, etc. into account.

[1] Formation of disaster risk conscious national land structures – These recommendations are being made on correcting the excessive concentration of industrial/economic activities in Tokyo and other Pacific Rim areas and revitalizing cities and industries in the Japan Sea Rim areas. Depopulating areas shall lead to more compact cities, thereby making disaster prevention/mitigation measures more efficient. Core infrastructures such as railroad and road networks, etc. shall not only support economic activities in ordinary times but also have sufficient redundancy to cope with predicted disasters and avoid any delay in emergency activities.

[2] Reinforcement of disaster mitigation measures from the software side – While encompassing improved earthquake resistance of civil engineering structures and building structures, the software side of disaster mitigation measures shall be further strengthened, including community building that takes escapes into account, evacuation drills in ordinary times, establishment of an alarm system for when disasters occur, and disaster prevention education for the people, etc.

[3] Promotion of research on disasters – The identification of the mechanism of large-scale earthquakes/Tsunamis and studies on disaster histories shall be promoted through conducting interdisciplinary research on archived documents, Tsunami deposits, and coastal topographies, and then the results disclosed to the public in an understandable manner.

(7) Organization and dissemination of disaster records

In order to retain memories of the lost past, record the disaster-stricken “present”, and create/recode the “future” toward reconstruction, SCJ established a Subcommittee on IT Media Social Infrastructure and Media Archive of Disasters, and with discussions being on-going. The importance of the creation and succession of disaster records was pointed out in the “Basic Guidelines for Reconstruction in Response to the Great East Japan Earthquake” made by the government, and hence a number of measures are being implemented in cooperation between the government and the private sector. SCJ is making the following recommendations.

[1] Promotion of creation of an “archive” concerning the Great East Japan Earthquake – Technologies for storing various information/media shall be developed, and the Great

East Japan Earthquake archive that is of international and cross-generational value established and promoted in cooperation with the relevant ministries/agencies and the National Diet Library, etc.

(8) Role of government publicity and media organizations

[1] Appropriate news coverage in response to the temporal stages of disasters – The respective media organizations should cooperate in establishing a system to use in integrating/sharing lifeline information that helps secures the "safety" (safety of lives) of disaster victims across the entire disaster-stricken areas in the initial stage immediately after a disaster.

[2] Cool-headed news reports and comments based on the sharing of accurate information and sources – Efforts should be made to avoid competing in gaining scoops or sensational articles/headlines and instead ensuring that accurate information and sources are shared with all types of media and cool-headed news and comments reported using that information.

5 Recommendations on industrial reconstruction and employment support

Ensuring reconstruction takes place in the respective areas requires that industries that can sustain the disaster-stricken areas steadily take root and with job opportunities then being ensured by those industries, and in thereby ensuring the persistent achievement of stable lives for the disaster victims and residents in the disaster-stricken areas. Because of this point of view the following recommendations are being made with analysis of the employment and industrial situation in the disaster-stricken areas and the need for employment support and industrial promotion taken into consideration.

(1) Alleviation of labor market mismatches

[1] Improvement of job-seeker support system that is compatible with the actual labor market situation

a. Area/attribute based employment targets: An incentive system in which the disaster victims in the areas where finding employment is difficult are provided with training implemented by private training institutions and with larger amounts of subsidies being granted when they are employed shall be introduced. In addition, employment improvement rate targets by attribute and area shall be established as requirements when applying for vocational training.

b. Cooperation with other employment restoration promotion projects: Those that received training through the job-seeker support system shall be actively employed as a requirement of employment creation via employment restoration promotion projects, etc.

c. Alleviation at household level:

The limitation of one person per household receiving vocational training shall be removed, and the conditions for receiving benefits altered to include spouses and children/parents within the same household who do not work for more than a specific number of hours, etc.

[2] Cooperation with "From Welfare to Employment": In order to make "From Welfare to Employment" support projects function in the disaster-stricken areas a careful individual support system shall be established/enhanced, including securing staff members such as support navigators, etc. In addition, the wisdom of the private sector shall also be utilized to the fullest extent possible, for example in creating employment in cooperation between various economic organizations and the municipalities of the disaster-stricken areas, etc.

[3] Ensuring sufficient staffing of Hello Works: In order to alleviate labor market mismatches through developing potential job offers an adequate number of staff members shall be secured at Hello Works.

(2) Reconstruction of local industries in the disaster-stricken areas

[1] Improvement of "reconstruction and construction subsidy projects for facilities and equipment of groups such as small- and medium-sized enterprises"

a. The system shall be operated in such as way as to allow enterprises that are essential to the local economy to be individually subject to subsidies

b. Carry-over of subsidies, which take the degree of the progress of elevation work into account, shall be allowed until the end of March 2016

c. The application period shall be made sufficiently long, the procedures, etc. more simple and flexible, and payments made each fiscal year according to the progress of the projects, while based on the judgment of the municipalities concerned

d. In the process of adopting subsidized projects priority shall be placed on subsidies/financing at the unit of a basic municipality

[2] Smoother promotion of reconstruction

a. Inter-ministerial cooperation shall be strengthened in preventing abuse of the "vertically segmented administration" system

b. Basic municipalities, etc. shall be utilized in thereby enabling them to play the role of being one-stop service centers

c. A system in which the government and municipalities, etc. rent production facilities shall be created in thereby eliminating "overlapping debt"

d. Special depreciation for disaster alternative assets shall be expanded so as to enable its application to gratuitously transferred assets

e. A system that supports long-term "temporary housing" projects and business restarts shall be created in Fukushima Prefecture

[3] Training of personnel to engage in life-prolonging repair of infrastructures

With municipality level life-prolonging repairs, local small- and medium-sized enterprises shall play the leading role in emergency repairs and inspections/maintenance through effective utilization of the "life-prolonging project subsidy system" that commenced in FY 2007.

(3) Revitalizing areas through business start-ups via the initiative of residents - Establishing Reconstruction Non-profits

[1] Enabling the establishment of various "reconstruction non-profits" (tentative name) via the initiative of residents.

[2] Reconstruction non-profits modeled after social corporations (start-up businesses) shall

receive favorable tax treatment, etc. with investments but no dividend payments, be allowed to transfer shares and redeem shares at the time of a corporate dissolution, but have the decision making rights separated from the invested amount, etc.

[3] A framework shall be provided for reconstruction non-profits modeled after public interest corporations by adding the new item of a “business that promotes reconstruction in the disaster-stricken areas”, etc. or including reconstruction non-profits as being a business that falls under the provision of “In addition to each of the foregoing items, business provided for in Cabinet Order as one relating to the public interest” in item 23 in Appended Table of the Act on Authorization of Public Interest Incorporated Associations and Public Interest Incorporated Foundation.

[4] The establishment of standards for public interest corporation authorization that suit the characteristics of the individual reconstruction non-profits, which differ to other public interest corporations, and the “Act on Authorization of Public Benefit of Reconstruction Non-profits” with the aim of facilitating its authorization shall be discussed from a medium-term perspective.

6 Recommendations on radiation measures

Based on the exposure doses discussed and health effects estimated for the different exposure routes the Sub-Committee on Counter-measures for Radiation has the following six recommendations ((1)[1]-[3] and (2)[1]-[3]) in minimizing adverse health effects and improving the accuracy of future assessments of health effects due to radiation exposure.

(1) Alleviation of effect on public health resulting from the Fukushima Daiichi Nuclear Power Plant accident

[1] The government/municipalities shall continue to estimate exposure doses and provide medical checkups/examinations to residents in thereby protecting the health of those already exposed to radiation, and children and infants in particular. For this purpose the government/municipalities shall establish a system that can be used to provide thyroid ultrasound examinations and blood tests, along with a regional medical system that enables residents to receive appropriate and prompt treatment in the case of any health abnormalities being detected.

[2] The government/municipalities shall implement appropriate measures such as establishing decontamination targets, including the post-return of residents and management of decontamination work, etc., in order to prevent cumulative exposure doses from reaching the level that could pose a negative health effect because of potential further exposure due to their return/decontamination work.

[3] Academic circles in Japan shall plan appropriate epidemiological research on estimating the radiation dose-response curve with respect to the carcinogenic rate and cancer mortality rate, implement it in cooperation with the government/municipalities, promote an integrated understanding with other basic research, and promptly reflect the results in the health management of the residents.

(2) Assessment of the present situation with and future of damage caused by radiation and more accurate estimation of health effects

[1] The government and academic circles in Japan are being requested to cooperate in establishing a cross-disciplinary research system that can be used to identify the overall picture related to the assessment of radioactive health effects and in thereby more accurately identifying the actual situation with radiation contamination and health effects associated with the Fukushima Daiichi Nuclear Power Plant accident and thus more appropriate implementation of decontamination and health effect prevention measures.

[2] The government shall establish a system that enables the prompt and steady collection of the data required in looking back on the accident and data which will have a significant effect on the accuracy of health effect estimates, and also a public system for providing standardized data in a form that most readily allows researchers to use/analyze it.

[3] Institutions/researchers engaged in radiation-related measurements or model-based estimations are expected to disclose the results of the various measurements/estimations that will be used as base figures in assessing radioactive health effects together with uncertainty information. In addition, accuracy control or improvement of the measurement/estimated results based on uncertainty information needs to be planned and implemented.

(3) Future issues regarding radioactive measures

In addition to the previous six recommendations four issues that still need to be resolved by academic circles, in particular, are as described below.

[1] Improvement of modeling and data assimilation technologies in relation to emission/diffusion/exposure/health effects

Improvement of the precision of atmospheric/oceanic diffusion simulations conducted in cooperation with researchers in various fields needs to be continued in the future. Improved simulations are needed, in particular more precise numerical models and research on data assimilation methods, etc. However, thorough understanding of the deposition/transfer of radioactive materials scattered over wide areas, exposure routes, and health effects will require specialized knowledge involving both radiation protection and earth sciences.

[2] Reinforcement of academic reasoning related to assessment of radioactive health effects and the approach

The frequency of cancer due to low dose radiation is far lower than the spontaneous occurrence of cancer, and thus significant uncertainty can be observed in the results of epidemiologic studies. Clarifying the mechanism via biological studies that cover the statistical limitations of epidemiologic studies is also a future issue. In addition, the risk of cancer with children is of high public interest and also a cause of public anxiety, thus leading to risk assessment research, etc. being expected to take place.

[3] A transition from countermeasures/standards setting at an early stage based on a precautionary principle to the setting of medium- to long-term countermeasures/standards based on academic reasoning and cost-benefit analysis

It was once again clarified after the accident that no scientific discussions or

examinations had taken place on the evidence which should rationally be used to make political decisions when scientific causal relationships and facts cannot be clearly identified. The ideal political decision making process that takes human values into account in cost-benefit analysis with these important issues, for which effectively referable precedents have rarely been available throughout human history, needs to be discussed by SCJ across the fields of humanities and science.

[4] Ways to make risk communication between academic circles and society

The issue raised here is an extremely important issue for scientists: how to provide risk information that is based on scientific knowledge to society. In addition, the scope and definition of objective "scientific facts" being unclear and the appropriate scientific data collection methods not having been established increased confusion with information. Sufficient discussions will need to take place in the future on exactly how information can be appropriately provided when many people are worried but the risk involved was yet to have been sufficiently scientifically verified at that point.

7 Recommendations on cross-regional processing of disaster wastes

(1) Background to the recommendations

The Great East Japan Earthquake resulted in a large amount of disaster wastes due to the large scale subsequent Tsunamis. As of March 12, 2012, the amount was estimated to be 4.76 million tons in Iwate Prefecture, 15.69 million tons in Miyagi Prefecture, and 2.08 million tons in Fukushima Prefecture, or a total of 22.53 million tons in the three prefectures which were the major disaster-stricken areas. The goal was set of completing the processing/disposal of the disaster debris by the end of March 2014. However, at present only 7.1% or 1.60 million tons of the disaster wastes have been processed/disposed of.

The disaster wastes should be, in principle, processed within the prefectures through reuse, including using them in disaster prevention facilities in the disaster-stricken areas, etc., but proceeding with cross-regional processing will be an issue with processing the wastes on schedule. The present government policy is to proceed with cross-regional processing of the disaster wastes in Iwate and Miyagi Prefectures, but limiting it to those in which the concentration of radioactive materials has been verified to be sufficiently low.

These recommendations therefore discuss ways of processing the disaster wastes in Iwate and Miyagi Prefectures. These recommendations then 1) examine a method of cross-regional processing from the point of view of safety and verifying whether it is a safe or not, 2) point out matters requiring special attention with monitoring, provision of information, and explanations in thereby obtaining sufficient understanding from the disaster-stricken areas, the municipalities involved in cross-regional processing, and the residents, and 3) then make the necessary recommendations.

(2) Present situation and issues

At present a standard value for the concentration of radioactive cesium in the disaster wastes to be processed by municipalities has been set in the guidelines for promoting cross-regional processing of disaster wastes, etc., and as long as workers work in conditions that remain under the standard value their additional annual exposure dose is not expected to exceed the standard value provided by the ICRP. In addition, with sufficient care, for example not engaging in excavations, etc., the additional annual exposure dose of the general public can be retained at less than 1/100 of the exposure dose from background radiation that people are normally exposed to. The exposure dose of residents living in the neighborhood of furnaces through inhaling dust and the exposure dose through intake of agricultural products, stock farm products, and cultured fish from the neighborhood are

estimated to be less than 1/10,000.

In addition, the monitoring methods/procedures used to measure the concentration of radioactive material established by the Ministry of the Environment are in line with the cautious approach of verifying it not only at the time of shipment but also at the time of receipt. The processing of the disaster wastes is considered to not adversely affect people's health as long as it is carried out in accordance with the present procedures.

The processing of the disaster wastes will, however, require significant consideration with respect to eliminating the worries of the residents of the recipient municipalities about both health effects from the radioactive materials and the basic principles of managing radioactive materials to a sufficient extent. The processing of the disaster wastes will also significantly affect municipalities concerned in all the aspects of the cost, people's health, and employment, etc. Enabling the disaster-stricken municipalities and recipient municipalities to reach an agreement in a convincing manner and then proceed with the cross-regional processing will therefore require consideration being given to [1] seriously respecting the general rule of processing the wastes within the prefecture concerned, [2] making the effort to precisely identify the amount of the disaster wastes, [3] ensuring accountability via information being thoroughly disclosed to the residents of the recipient municipalities, and [4] constant monitoring of possible radioactive material leaks.

(3) Recommendations

Recommendation 1:

The disaster-stricken municipalities should precisely identify the composition and amount of the disaster wastes, reuse them as much as possible within the region, and then renew their disposal plans from the stance of disposing/incinerating the residue or implementing cross-regional processing. The government should strengthen their technical advice and financial support in thereby supporting formulation of plans and their implementation.

Recommendation 2:

The government should provide financial support for the additional expense of removing impurities, etc. when using the disaster wastes in the development of bases for disaster-prevention forests and higher ground that function as tidal protection, and make the effort to enhance sorting technologies, etc. in thereby increasing the amount of reusable disaster wastes.

Recommendation 3:

The processing/disposal standards, which are based on the Act on Special Measures concerning the Handling of Contamination by Radioactive Materials and Guidelines on the Promotion of cross-regional processing of disaster wastes, are satisfied by the concentration of radioactive materials contained in the disaster wastes produced in Iwate and Miyagi Prefectures and which is sufficiently low that it will not pose any adverse health hazard in many cases, and thus either processing within the prefecture concerned or cross-regional processing is possible. The standards, however, do differ depending on the processing methods used such as whether the disaster wastes get reused or not. In proceeding with cross-processing, therefore, the government will need to develop an environment in which cross-regional processing can smoothly progress through making arrangements that ensure requests of the disaster-stricken regions match the conditions of the recipient regions with regard to the type of disaster wastes and the concentration of radioactive materials.

Recommendation 4:

In processing with the disposal of the disaster wastes, and regardless of whether the processing takes place within the prefecture or is cross-regional processing, the government and municipalities should constantly confirm that the content of radioactive substances and other hazardous substances is below the safety standards both before delivery and after disposal, and then ensure to disclose that data. In enabling municipalities to provide sufficient risk communication to residents the government should 1) completely disclose all relevant information, including the processes used to establish standards, etc., 2) provide technical and financial support with regard to measuring the content, including radiation dose measurements, etc., and 3) guarantee opportunities for process verification by neutral experts, etc.

<Reference>

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<2> Science Council of Japan, Great East Japan Earthquake Task Force, The 2nd emergency recommendation regarding the response to the Great East Japan Earthquake “Regarding the necessity of the investigation of radiation levels after the accident of the Fukushima Daiichi Nuclear Power Plant”, April 4, 2011.

<3> Science Council of Japan, Great East Japan Earthquake Task Force, The 3rd emergency recommendation regarding the response to the Great East Japan Earthquake “For the relief of victims of the Great East Japan Earthquake and the recovery of the disaster-stricken areas”, April 5, 2011.

<4> Science Council of Japan, Great East Japan Earthquake Task Force, The 4th emergency recommendation regarding the response to the Great East Japan Earthquake “Urgent proposal related to measures for earthquake disaster waste and prevention of environmental impact”, April 5, 2011.

<5> Science Council of Japan, Great East Japan Earthquake Task Force, The 5th emergency recommendation regarding the response to the Great East Japan Earthquake “Utilization of robot technology for the accident of the Fukushima Daiichi Nuclear Power Plant”, April 13, 2011.

<6> Science Council of Japan, Great East Japan Earthquake Task Force, The 6th emergency recommendation regarding the response to the Great East Japan Earthquake “Perspective of gender equality with regard to relief, support, and restoration”, April 15, 2011.

<7> Science Council of Japan, Great East Japan Earthquake Task Force, Subcommittee on Grand Reconstruction Design for the Disaster-Stricken Areas, Recommendation of “Reconstruction of the disaster-stricken areas of the Great East Japan Earthquake – Reconstruction goals and seven principles –”, June 8, 2011. [2]*

<8> Science Council of Japan, Great East Japan Earthquake Task Force, Subcommittee on Options with Energy Policies, Recommendation “Toward selection of future energy

[2] *: The original was written in Japanese and SCJ provides informal English translation for non-Japanese readers.

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<16> Science Council of Japan, Great East Japan Earthquake Taskforce, "Report to the Foreign Academies from Science Council of Japan on the Fukushima Daiichi Nuclear Power Plant Accident", May, 2nd, 2011.

<17> Science Council of Japan, Statement of the Executive Committee of Science Council of Japan, “Reconstruction from the Great East Japan Earthquake and Responsibility of Science Council of Japan”, September 22, 2011. *
http://www.scj.go.jp/ja/info/kohyo/pdf/kohyo-21-kanji-3.pdf

<Members of the Committee on Supporting Reconstruction after the Great East Japan Earthquake>

These recommendations compile and publish the results of deliberations of the Committee on Supporting Reconstruction after the Great East Japan Earthquake, Science Council of Japan.

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<Background Information 1> Progress of deliberations of the Committee on Supporting Reconstruction after the Great East Japan Earthquake

Committee on Supporting Reconstruction after the Great East Japan Earthquake

2011

October 5 Executive Committee (138th) of SCJ
Establishment of the Committee on Supporting Reconstruction after the Great East Japan Earthquake and its members decided

October 28 Committee on Supporting Reconstruction after the Great East Japan Earthquake (1st)
○ Future course of action

2012

February 20 Committee on Supporting Reconstruction after the Great East Japan Earthquake (2nd)
○ Report of status of deliberations of each Sub-Committee, etc.

March 16 Committee on Supporting Reconstruction after the Great East Japan Earthquake (3rd)
○ Report and deliberations on (proposed) Recommendations of each Sub-Committee

March 26 – April 1
Call for opinions on (proposed) Recommendations by the Sub-committee on Counter-measures for Radiation from Council Members and Members

April 3 Committee on Supporting Reconstruction after the Great East Japan Earthquake (4th)
○ Report and deliberations on (proposed) Recommendations of each Sub-Committee

Sub-Committee on Building Disaster-Resilient Communities,
Committee on Supporting Reconstruction after the Great East Japan Earthquake

2011

November 16 Executive Committee (140th) of SCJ

Establishment of the Sub-Committee on Building Disaster-Resilient Communities, Committee on Supporting Reconstruction after the Great East Japan Earthquake and its members decided

December 27 Sub-Committee on Building Disaster-Resilient Communities (1st)

○ Deliberation matters, future course of action

2012

January 13 Sub-Committee on Building Disaster-Resilient Communities (2nd)

○ Issues with building reconstructed communities, symposium series "Protecting life and land from large-scale disasters", etc.

February 3 Sub-Committee on Building Disaster-Resilient Communities (3rd)

○ Summarizing policy, etc. of the Sub-Committee on Building Disaster-Resilient Communities

March 2 Sub-Committee on Building Disaster-Resilient Communities (4th)

○ Draft recommendations

March 16 Committee on Supporting Reconstruction after the Great East Japan Earthquake (3rd)

Report and deliberations of (proposed) Recommendations by the Sub-Committee on Building Disaster-Resilient Communities

March 26 – April 1

Call for opinions on (proposed) Recommendations by the Sub-Committee on Building Disaster-Resilient Communities from Council Members and Members

April 3 Committee on Supporting Reconstruction after the Great East Japan Earthquake (4th)

Report and deliberations on (proposed) Recommendations by the Sub-Committee on Building Disaster-Resilient Communities "Building Tsunami-proof Communities – Showing How Tohoku Reconstruction

Makes Use of Nature –”

Sub-Committee on the Promotion of Industry and Employment,
Committee on Supporting Reconstruction after the Great East Japan Earthquake

2011

November 16 Executive Committee (140th) of SCJ
Establishment of the Sub-Committee on the Promotion of Industry and Employment, Committee on Supporting Reconstruction after the Great East Japan Earthquake and its members decided

December 8 Sub-Committee on the Promotion of Industry and Employment (1st)
○ Deliberation matters, future course of action

2012

January 10 Sub-Committee on the Promotion of Industry and Employment (2nd)
○ Job-seekers support system, etc.

February 21 Sub-Committee on the Promotion of Industry and Employment (3rd)
○ Reconstruction and construction subsidy projects for facilities and equipment of groups such as small- and medium-sized enterprises, etc.

February 22/23
Field survey in Sendai City and Kesennuma City, Miyagi Prefecture by the Sub-Committee on the Promotion of Industry and Employment

March 4 Enlarged executive meeting (1st) of the Sub-Committee on the Promotion of Industry and Employment
○ Draft recommendations

March 8 Sub-Committee on the Promotion of Industry and Employment (4th)
○ Draft recommendations

March 16 Committee on Supporting Reconstruction after the Great East Japan Earthquake (3rd)
Report and deliberations of (proposed) Recommendations by the Sub-Committee on the Promotion of Industry and Employment

March 26 – April 1

Call for opinions on (proposed) Recommendations by the Sub-Committee on the Promotion of Industry and Employment from Council Members and Members

April 3 Committee on Supporting Reconstruction after the Great East Japan Earthquake (4th)

Report and deliberations of (proposed) Recommendations by the Sub-Committee on the Promotion of Industry and Employment "Supporting Job-Seekers and Establishing Reconstruction Non-profits in Disaster-Stricken Areas – Towards the Promotion of Industry and Employment to Support Victims in Disaster-Stricken Areas –"

Sub-Committee on Counter-measures for Radiation,
Committee on Supporting Reconstruction after the Great East Japan Earthquake

2011

November 16 Executive Committee (140th) of SCJ

Establishment of the Sub-committee on Counter-measures for Radiation Contamination, Committee on Supporting Reconstruction after the Great East Japan Earthquake and its members decided

December 8 Sub-committee on Counter-measures for Radiation Contamination (1st)

○ Basic ideas, information sources of radiation contamination and exposure, etc.

December 28 Sub-committee on Counter-measures for Radiation Contamination (2nd)

○ Overall perspective, data map (1st draft), data sources, etc.

2012

January 8 Executive meeting of the Sub-committee on Counter-measures for Radiation Contamination (1st)

○ Main ideas of the draft recommendations, etc.

January 16 Sub-committee on Counter-measures for Radiation Contamination (3rd)

○ Simulation model, health effects due to radiation, future deliberations, etc.

January 19/20

Field survey in Fukushima City, Mianamisoma City, and Soma City, Fukushima Prefecture by the Sub-committee on Counter-measures for Radiation Contamination

February 12 Executive meeting of the Sub-committee on Counter-measures for Radiation Contamination (2nd)

○ Main ideas of the draft recommendations, etc.

February 17 Sub-committee on Counter-measures for Radiation Contamination (4th)

○ Future deliberations, etc.

March 7 Sub-committee on Counter-measures for Radiation Contamination (5th)

○ Draft recommendations

March 16 Committee on Supporting Reconstruction after the Great East Japan Earthquake (3rd)

- Approval of a proposal to change the title of the Sub-committee on Counter-measures for Radiation Contamination to "Sub-committee on Counter-measures for Radiation"
- Report and deliberations of (proposed) Recommendations by the Sub-committee on Counter-measures for Radiation

March 26 – April 1

Call for opinions on (proposed) Recommendations by the Sub-committee on Counter-measures for Radiation from Council Members and Members

April 3 Committee on Supporting Reconstruction after the Great East Japan Earthquake (4th)

Report and deliberations on (proposed) Recommendations by the Sub-committee on Counter-measures for Radiation "A New Step towards Counter-measures for Radiation – Towards Science-based Policy Action –"

<Background Information 2> Recommendations, etc. made by Science Council of Japan (SCJ) and Responses to Recommendations, etc.

Published date	Content of recommendations, etc.	Responses to recommendations, etc.
March 18, 2011	Statement of the Executive Committee of "Disaster in Northeast Japan and Nuclear Emergency" SCJ recommended to humbly admit fragility of the current socio-economic systems of Japan, which became obvious by the present disaster, looks for measures of improvement seriously, and act with sense of responsibility to explain how to use science and technology in building a new society in Japan that can be handed over with confidence to the future generation.	
March 25, 2011	The first emergency recommendation In consideration of the recommendations made at an enlarged executive meeting of Section III, recommendations were made to a) respond to the worries and doubts of the Japanese people, deepen their understanding of the situation, and immediately prepare the ground for proper actions, b) implementation of "pairing support" from the standpoint of the horizontal collaboration of local governments, c) immediately prepare a system where appropriate experts can provide supplemental explanations, d) immediately establish a centralized and sustainable system for environmental monitoring conducted outside of the nuclear power plant premises and for evaluation of this data, and e) endeavor to foster the trust of the people and deliver scientific information to the international community.	Pairing support in particular has already been introduced in member prefectures of the Union of Kansai Governments and designated cities in Kinki area (March 28, 2011 in Sankei Shimbun), and the Japanese Association of Nursing Programs in University (horizontal support between universities) and enterprises have been conducting activities that are consistent with the purpose of the recommendations. In addition, scientific information has been provided overseas since May.
April 4, 2011	The 2nd emergency recommendation of "Regarding the necessity of the investigation of radiation levels after the accident of the Fukushima Daiichi Nuclear Power Plant" Recommendations were made that: A large-scale investigation by many measurement professionals is necessary, and immediate implementation is desired with the cooperation of universities etc.; Items that need to be measured include surface contamination on the ground, concentration levels of radiation in the air, radiation dose rate of the ground, and exposure dose of the residents.	The purpose of the emergency recommendations was reflected in the "Environment Monitoring Plan" (April 22, 2011 by the Nuclear Emergency Response Headquarters) and "Policies regarding Interim Measures for Nuclear Disaster Victims" (May 17, 2011 by the said Headquarters). In addition, research funds for the time being were secured in accordance with the "Implementation Policy of the Project of FY2011 Strategic Funds for the Promotion of Science and Technology 'Promotion of Flexible Responses to Important Policy Issues and Research on Policy Making of the Council for Science and Technology Policies'" and radiation measurements, mainly conducted by the Ministry of Education, Culture, Sports, Science and Technology, commenced. In creating the measurement maps cooperation has been received to date from the "Conference on the Preparation of Distribution Map of Radiation Doses, etc." established within the Ministry of Education, Culture, Sports, Science and Technology and with the aim of holding technological discussions.
April 5, 2011	The 3rd emergency recommendation of "For the relief of victims of the Great East Japan Earthquake and the recovery of the disaster-stricken areas" In consideration of proposals in Section I the following recommendations were made: ・ Establish a comprehensive system for the relief of victims and recovery of disaster-stricken areas ・ Conduct full-scale and immediate relief activities for the victims (Necessity of relevant legal measures; Necessity of financial and economic measures; Support for the livelihoods of evacuees; Keeping the identity of the victimized community under the evacuation measures; Welfare, health, medical support for elderly and disabled people; Immediate support for the child victims; Establishment of human support system; Support for the psychological and physiological recovery of the victims; Special measures for information transmission to language challenged people; Support for the university education and research in the damage-stricken regions by cooperation between universities)	The Reconstruction Agency was newly established as a unified organizational system of the government. In addition, enactment of the reconstruction related laws, the 1st through to 4th supplementary budgets of FY 2011, and FY 2012 budget (under deliberation) are making progress, and thus a major part of the recommendations are being implemented. In contrast to this, however, no progress has been observed in the establishment of a Tohoku regional council, the provision of information based on scientific judgments and political responsibility, and the dissemination of publicly reliable information, etc.

	・ Efforts for the restoration of the disaster-stricken areas (Land improvement of the disaster-stricken areas; Securing temporary housing; Securing employment in disaster areas; Horizontal and vertical support for the victims and stricken municipalities; Restoration of education in disaster areas; Fundamental principles for the regional restoration; A proposal for the regional restoration; Proposal for the establishment of a Tohoku regional council for disaster prevention and risk management land) ・ Supporting the evacuees from the accident of the Fukushima Daiichi Nuclear Power Plant and handling of the accident (Supporting the evacuees; Measures dealing with the radioactive contamination and damage compensation; Ensuring the safety of the workers at the nuclear power plant; Transmission of information based on scientific judgment and political responsibility and presentation of the standards of action; Necessity of transmitting internationally reliable information; General inspection of the nuclear power plant; Establishment of safe disposal system of the radioactive waste; General gathering of scientists to plan accident recovery processes and presentation of the processes)	
April 5, 2011	The 4th emergency recommendation of "Urgent proposal related to measures for earthquake disaster waste and prevention of environmental impact" With recommendations made by the Committee on Environmental Sciences and the Committee on Civil Engineering/Architecture taken into consideration and reflecting comments made by the Japan Society of Material Cycles and Waste Management, the Japan Society of Civil Engineers, and the Japan Society on Water Environment, recommendations were made to a) conduct emergency waste disposal keeping the public hygiene and proper handling of hazardous waste as high priorities, b) provisionally designate places to deposit waste, considering the water environment and separate it by type in a uniform manner, c) consider ways of recycling that can supply resources for the recovery and restoration processes, and d) promote regional employment and a wide-range of cooperation for the disaster waste recycling.	Little cooperation and support has been obtained from municipalities nationwide with the disposal of the debris, which has thus been significantly obstructing the progress of the restoration/reformation. In addition, discussion of interim storage facilities for disaster wastes contaminated by radioactive materials is making progress, but discussion of the final disposal sites has yet to take place.
April 13, 2011	The 5th emergency recommendation of "Utilization of robot technology for the accident of the Fukushima Daiichi Nuclear Power Plant" Recommendations made by the Committee on Mechanical Engineering were taken into consideration with the recommendation that was made that the central government should act urgently in encouraging the continuous utilization of robot technologies that can be adapted to the situation of the plant by organizing a joint team comprised of the electric power company in charge of the actual site operation, fire departments, Japan Self-Defense Forces, the ministries concerned, robot specialists, and nuclear power plant and radiation specialists, giving this team requisite authority, and having it collaborate with the technical support team consisting of domestic and foreign universities, laboratories, and companies involved in robotics that has already started working.	The disaster response robot Quince, which was developed as a NEDO project, was improved by Chiba University and Tohoku University, and is used at the Fukushima Daiichi Nuclear Power Plant to measure the radiation doses, etc. (at present in Units 2 and 3). No joint team has been established to date.
April 15, 2011	The 6th emergency recommendation of "Perspective of gender equality with regard to relief, support, and restoration" With proposals made by the Committee on Human Security and Gender, the Subcommittee on Gender Equality of the Committee for Scientific Community, and the Subcommittee for Gender Studies of the Committee on Sociology/Social Welfare taken into consideration recommendations were made that a) the central and local governments, political parties, and private organizations shall be thoroughly observe gender equality in their organizations that decide on relief, support, and restoration works, b) care for the care givers such as	

	medical staff, nursing staff, day care staff, teachers, and government workers who are working night and day must be provided, c) information shall be collected and provided with as much care as possible, d) utilization of females in Self-Defense Forces or female security guards shall take place, e) investigations shall be held with the aim of contributing to the realization of gender equality in participation in the process of restoration.	
May 2, 2011	Report on the present situation with the Fukushima Daiichi Nuclear Power Plant accident to overseas academic circles by SCJ The present situation with the Fukushima Daiichi Nuclear Power Plant accident and the future issues have been provisionally compiled and disclosed as a report to academic circles in respective countries.	There have been a number of responses from overseas academic circles.
June 8, 2011	Recommendation of "Reconstruction of the disaster-stricken areas of the Great East Japan Earthquake – Reconstruction goals and seven principles –" The goal of "reconstruction that helps develop people's lives and hopes" and seven principles of "public responsibility with regard to nuclear power plant issues and prompt promotion of international responses", "establishment of the right to life, as by the Constitution of Japan", "formulation of plans via the initiative of municipalities and residents", "reconstruction of safe coastal areas where human life can be protected", "recovery of industrial bases and development of renewable energy sources", "Natural Symbiosis Cities based on the Watershed Landscape", and "financial resource security based on the solidarity of the people and fair burden sharing" were proposed by the Subcommittee on Grand Reconstruction Design for the Disaster-Stricken Areas of the Great East Japan Earthquake Task Force.	Web news (the outlook of the 1st session of the Subcommittee, an interview with the chairperson) was broadcast on April 28. In addition, a number of SCJ Council Members and Members, including the members of this Subcommittee, are involved in the formulation of reconstruction plans for the municipalities, with the seven principles therefore being used as reference material during its course.
June 24, .2011	Recommendation of "Toward selection of future energy policies in Japan – Six scenarios concerning sources of electricity –" The Subcommittee for Options with Energy Policies of the Great East Japan Earthquake Task Force presented six scenarios regarding future energy policies in Japan. A. Immediately cease all nuclear power generation and gradually shift to electricity being generated through renewable energy sources while using thermal power generation as the alternative for the time being. B. Aim for in around five years the achievement of 30% of electricity being covered by renewable energy sources and greater energy efficiency as substitutes for nuclear power generation. During the course of the above improving the safety of nuclear power generation shall be pursued. C. Aim for in around 20 years the achievement of 30% of electricity being covered by renewable energy sources and greater energy efficiency as substitutes for nuclear power generation. During the course of the above improving the safety of nuclear power generation shall be pursued. D. Sequentially cease operation of all nuclear reactors that have reached their maximum useful life-span over the next 30 years. Within this time span achieve 30% of electricity being covered by renewable energy sources and greater energy efficiency as substitutes for nuclear power generation. During the course of the above improving the safety of nuclear power generation shall be pursued. E. While pursuing greater safety, replace nuclear reactors that have reached their maximum useful life-span in maintaining the level of electricity provided via nuclear power, and at the same time promoting use of more renewable energy sources. F. While pursuing greater safety, position nuclear power generation as the main low-carbon future energy source.	Following the Fukushima Daiichi Nuclear Power Plant accident discussions on different electricity sources have taken place from various stances and information supporting those respective stances then disclosed. In this respect SCJ cool-headedly discussing electricity sources and providing materials to the government and the general public for discussing electricity sources had a great impact, with many requests for informative material being made by the mass-media, etc. In contrast to this, however, the results of estimations being discussed, etc. were also published in newspapers that resulted in the public/government being misled, and which has thus been an issue with disclosing conference materials. In addition, when the recommendations were made the basic documents were not well-ordered and therefore not attached to the recommendations, and there has been a comment (SciencePortal review) that more detailed discussion information should also be disclosed. Web news (an outlook of the 1st session of the Subcommittee, an interview with the chairperson) was also broadcast on April 28.

August 3, 2011	The 7th emergency recommendation of "Scientific Survey and Analysis of Movement of Radioactive Substances over a Wide Area" Proposals made by the Subcommittee on investigation of Fukushima Daiichi Nuclear Plant Accidents of the Committee on Comprehensive Synthetic Engineering were taken into consideration and it was noted that the government in cooperation with academic institutions must scientifically ascertain the movements of radioactive substances, and then recommendations made on a) investigations of the environment including the ocean over a wide area, b) establishment of a plan to carry out such investigations for the necessary length of time, c) long term continuous elucidation of the movements of radioactive substances over a wide area, and d) collection of the results of various investigations up to the present and the results of ongoing and future investigations into a database with a uniform format, and making this database available to researchers around the world.	The recommendations were then reflected in concrete policies, including wide area airborne monitoring, etc. Data has been disclosed in PDF format, with disclosure in the Excel format also being under way. The uniform format issue is yet to be solved (the format of data provided by the Ministry of Education, Culture, Sports, Science and Technology is inconsistent with that provided by the Ministry of Agriculture, Forestry and Fisheries),
September 21, 2011	Recommendation of "Employment support and industrial regeneration support in reconstruction from the Great East Japan Earthquake" Proposals of the Subcommittee for Discussion of New Japanese Society after 3.11 of Section I were taken into consideration and recommendations made on employment creation measures via the reconstruction work, introduction of a new vocational training system for unemployed disaster victims, industrial regeneration support measures, enhanced employment support measures, support for self-employed disaster victims, and support for victims of the nuclear power plant accident.	This was covered in a news report via the SciencePortal of the Japan Science and Technology Agency. During the 22nd Term the Sub-Committee on the Promotion of Industry and Employment of the Committee on Supporting Reconstruction after the Great East Japan Earthquake was established to further deepen these recommendations.
September 22, 2011	Statement of the Executive Committee of "Reconstruction from the Great East Japan Earthquake and Responsibility of Science Council of Japan" Because of the principle of independently fulfilling its own duties, SCJ shall more carefully discuss the methods and principles used in forming integrated knowledge from scientific communities, make the effort to establish a more trusting relationship with the government, and proceed with activities involving the provision of advice/recommendations to the government in thereby helping to resolve the difficulties people face. The government is also requested to discuss the position of scientific advice with the abovementioned roles of SCJ taken into account. The concept of "science for society" is considered to require not only scientists providing proven knowledge to society but also sharing the issues involved with the people and thus jointly pursuing solutions through communication while scientists provide the most complete scientific knowledge possible to society.	
September 22, 2011	Report of "Investigative Report on Options with Energy Policies" After taking "Toward selection of future energy policies in Japan – Six scenarios concerning sources of electricity –", which was published on June 24, into consideration important points when selecting energy sources and considerations and discussions of the six scenarios were presented with the aim of enabling the people and policy makers to broadly consider the scenarios and share problems and issues.	Discussion points were sorted and a variety of evidence presented concerning the recommendations in "Toward selection of future energy policies in Japan – Six scenarios concerning sources of electricity –" in this report, and which was then covered in a news report via the SciencePortal of the Japan Science and Technology Agency. In addition, the abovementioned report was not oriented in any single direction, and instead clarified various discussion points and points of view to keep in mind when discussing energy supplies, while also drawing a clear distinction with a discussion of a long-term energy policy that took place within the government.

September 27, 2011	Recommendation of "Protecting children from the Great East Japan Earthquake and the subsequent nuclear power plant accident" The Great East Japan Earthquake and the radiation exposure due to the subsequent Fukushima Daiichi Nuclear Power Plant accident significantly affected not only children in the disaster-stricken areas but indeed throughout Japan, and therefore recommendations were made regarding six concrete measures that are considered necessary in improving their mental and physical health and enabling their sound development.	This was also covered in a news report via the SciencePortal of the Japan Science and Technology Agency. Follow-up studies on their health are already in progress in Fukushima Prefecture, but full-scale cooperation has not been obtained from the prefectural residents.
September 30, 2011	Recommendation of "Reconstruction of a new generation fisheries industry after the Great East Japan Earthquake" In consideration of the disaster-stricken areas being a concentrated fisheries industry area and thus essential in securing food the safety of Japan, and in order to provide long-term guidelines for the creative reconstruction of the fisheries industry as well as the reconstruction of fishing villages as places to live (local communities), recommendations were made on a) the prompt resolution of the nuclear power plant accident and restoration of trust in the safety of marine products, b) restoration/reconstruction from the point of view of securing food safety, c) implementation of comprehensive fisheries industry restoration policies, d) coastal environment preservation and regeneration of fishing grounds, and e) the rebuilding of local communities.	Related measures were reflected in the FY 2011 supplementary budgets, etc. In addition, concrete recommendations, which take the opinions of the disaster-stricken areas into consideration, are also being discussed by the Sub-Committee on the Promotion of Industry and Employment of the Committee on Supporting Reconstruction after the Great East Japan Earthquake during the 22nd Term.
September 30, 2011	Recommendation of "Reconstruction of the disaster-stricken areas of the Great East Japan Earthquake – Reconstruction goals and seven principles –" (2nd recommendation) The "Reconstruction goals and seven principles", which were published on June 8, were taken into consideration in compiling recommendations that were in accordance with the up-to-date situation. Concrete recommendations were made in particular regarding the decontamination of radioactive materials, establishment of the right to life, prompt formulation of reconstruction plans, development of renewable energy sources, maintenance/regeneration of the cultural landscape, and securing financial resources, etc.	Further concrete recommendations are being discussed by the Sub-Committee on Building Disaster-Resilient Communities of the Committee on Supporting Reconstruction after the Great East Japan Earthquake during the 22nd Term.

March 18, 2011	Emergency meeting on "What we can do at present?"
April 25, 2011	Opinions on prior stem cell collection from the emergency nuclear workers at the Fukushima Daiichi Nuclear Power Plant
April 26, 2011	Academic forum on "Toward Reconstruction of the Great East Japan Earthquake"
May 21, 2011	Academic forum on "The Great East Japan Earthquake and the Mass-Media"
June 6, 2011	Open symposium on "Emergency meeting: Toward restoration/reconstruction of damaged natural history collections and museums – What can the academic community do to help"
June 11, 2011	Academic forum on "6.11 Symposium on "Disaster/Reconstruction and Gender Equality""
June 26, 2011	Open symposium on "What young researchers think the future after the earthquake disaster will be – What can the academic community do to do help"
June 26, 2011	Open symposium on "Forum: Effects of the Great East Japan Earthquake on the ecological system and biodiversity – How serious were the effects, what should we be thinking toward reconstruction –"
July 1, 2011	Emergency lecture meeting on "Appropriate fear of radiation"
July 23, 2011	Open symposium on "The Great East Japan Earthquake – Nursing science academy activities required today and in the future –"
August 19, 2011	Open symposium on "Disaster prevention and geographical education – Utilizing the lessons learned from the Great East Japan Earthquake"
September 18, 2011	Open symposium on "Social responsibility of scientists with regard to the nuclear power plant disaster – Science and beyond science"

<Background Information 3> Specialty Committees, etc. related to the Great East Japan Earthquake (As of March 12, 2012)

1. Subcommittees, etc. involved in surveys/deliberations related to the Great East Japan Earthquake and based on the title and survey/deliberation items provided for in the Administrative Policies of Specialty Committees (decided on September 1, 2011 by the 133rd Executive Board of SCJ; final revision on February 20, 2012 by the 146th Executive Board of SCJ)

○ Subcommittee on Identifying the Damage to Structures Resulting from the Great East Japan Earthquake and the Path to Rebuilding Japanese Society, Committee on Sociology/Social Welfare

○ Subcommittee on "Building a Safe Society after the Great East Japan Earthquake and the Law", Committee on Law

○ Joint-Subcommittee on Food Issues with the Great East Japan Earthquake, Committee on Agriculture, Committee on Food Science, and Committee on Health/Human Life Science

○ Subcommittee on IT Media Social Infrastructure and Media Archive on Disasters, Committee on Informatics

○ Subcommittee on Low-Carbon Architecture and City Management, Committee on Civil Engineering/Architecture

○ Subcommittee on Responding to the Great East Japan Earthquake in Mechanical Engineering Field, Committee on Mechanical Engineering

○ Subcommittee on Investigation of Fukushima Daiichi Nuclear Power Plant Accident, Committee on Comprehensive Synthetic Engineering

○ Working Group on Survey of Environmental Pollution Resulting from the Nuclear Power Plant Accident, Subcommittee on Investigation of Fukushima Daiichi Nuclear Power Plant Accident, Committee on Comprehensive Synthetic Engineering

2. In addition to Specialty Committees

○ Subcommittee on Examining Science and Society after the Accident at the Fukushima Nuclear Power Plant, Section I

○ Committee on Examining a Scientific Survey of the Great East Japan Earthquake

3. Subcommittees, etc. involved in surveys/deliberations relating to the Great East Japan Earthquake as provided for in their Proposal for Establishment

○ Subcommittee on Humanities of Co-existence and Dialogue, Committee on Philosophy
○ Subcommittee on Safe Society and Information Technology, Committee on Informatics

4. Subcommittees, etc. whose deliberation items are considered to be related to the Great East Japan Earthquake and as provided for in the Administrative Policies of Specialty Committees

(From the point of view of risk management)
○ Subcommittee on "Scientific Study of Risk", Committee on Business Administration
○ Joint-Subcommittee on Environmental Risk, Committee on Health/Human Life Science and Committee on Ecology and Environmental Science
○ Working Group on Earthquake Disaster Risk Management, Joint-Subcommittee on WFEO, Committee on Comprehensive Synthetic Engineering and Committee on Civil Engineering/Architecture

(From the point of view of earthquake disasters)
○ Subcommittee on Large-scale Earthquake Disasters, Committee on Civil Engineering/Architecture
○ Working Group on Policy Reviews, Subcommittee on Large-scale Earthquake Disasters, Committee on Civil Engineering/Architecture

(From the point of view of using radiation/radioactivity)
○ Joint-Subcommittee on Discussing Issues with Using Radiation and Radioactivity, Committee on Basic Medicine and Committee on Comprehensive Synthetic Engineering
○ Working Group on Discussing Research Reactors, Joint-Subcommittee on Discussing Issues with Using Radiation and Radioactivity, Committee on Basic Medicine and Committee on Comprehensive Synthetic Engineering
○ Subcommittee on Radiation and Clinical Examinations, Committee on Clinical Medicine

(From the point of view of food safety)
○ Joint-Subcommittee on Food Safety, Committee on Agriculture, Committee on Food Science, and Committee on Health/Human Life Science
○ Subcommittee on Fisheries Science, Committee on Food Science
○ Subcommittee on Animal Husbandry, Committee on Food Science

(From the point of view of decontamination)
○ Subcommittee on Soil Science, Committee on Agriculture

○ Committee on Forestry
○ Subcommittee on Conservation and Restoration of Natural Environment, Committee on Ecology and Environmental Science

(From the point of view of child safety)
○ Joint-Subcommittee on Child Rearing Environments, Committee on Psychology/Education, Committee on Clinical Medicine, Committee on Health/Human Life Science, Committee on Ecology and Environmental Science, and Committee on Civil Engineering/Architecture

5. SCJ-organized symposiums related to the Great East Japan Earthquake

2011

Nov. 11 Tohoku District Conference, Public lecture meeting, ”Reconstruction from the Great East Japan Earthquake and science technology”

Nov. 26 Public symposium “Roles and responsibilities of scientists with regard to the Fukushima Daiichi Nuclear Power Plant accident”

Dec. 6 Public symposium “Protecting life and land from large-scale disasters – Message from 24 Societies”; Part 1 “Hazards (seismic motion, Tsunamis, etc.) and scale to be considered in the future”

2012

Jan. 18 Public symposium “Protecting life and land from large-scale disasters – Message from 24 Societies”; Part 2 “How to review the national land policy on the premise of the occurrence of large-scale disasters”

Jan. 22 Public symposium, “Message to Japan and the world – Social Welfare and Sociology after 3.11 Great East Japan Earthquake and the Fukushima Daiichi Nuclear Power Plant accident”

Feb. 11 Academic forum, “Ways to reduce large-scale disasters and realization of a sustainable society based on lessons learned from the Great East Japan Earthquake”

Feb. 29 Public symposium, “Protecting life and land from large-scale disasters – Message from 24 Societies”; Part 3 “How to realize a disaster mitigating society”

Mar. 14 Public symposium, “Soil science of decontamination – from woods, rice fields, and fields to kitchen gardens –”

Mar. 15 Public symposium, “One year after the Great East Japan Earthquake – Toward reconstruction of a sustainable society”