3 Development of Human Resources Who Can Lead the Next Generation

In order to develop S&T-related human resources, it is important to develop children's interest in science and mathematics at elementary and secondary schools, so as to increase the population of children interested in such subjects, and to identify talented children and develop their abilities. The following efforts are, therefore, comprehensively being made to enrich the education of science and mathematics.

(1) Development of intellectual curiosity in children

The Japan Science and Technology Agency (JST) is carrying out the following programs. The "Science Leaders' Camp" program supports camping-style activities that help science and math teachers learn effective methods for teaching talented students and for creating networks with other teachers. The "Establishing Training Centers for Core Science Teachers" program supports efforts in which universities (graduate schools) collaborate with the board of education to train elementary and junior-high school teachers who have great teaching skills in science and mathematics, and who can play a key role in teaching science and mathematics at schools and local facilities. The "Science Education Assistant Allocation Project" develops digital learning materials for science education and offers them to schools nationwide, through the Internet, in order to provide learning opportunities that are appropriate to children's curiosity and inquiring minds. The project also supports efforts to allocate external human resources, such as sending graduate-school students and retired teachers to elementary schools as science-class assistants in order to enhance observations and experiments in science classes. The "Fostering Next-Generation Scientists" program is an effort to foster human resources; it supports project studies and systematic educational programs that universities offer to youngsters who have the talent and willingness study mathematics and science. The "Supporting Science Clubs" program encourages the activities of science clubs and supports efforts to discover and develop the talent of students by fostering collaboration with technicians. The "Science Partnership Project," in collaboration with universities and science centers, supports the hands-on, problem-solving activities of schools and boards of education. The "Science Camp" program supports camping-style learning activities at some of the most advanced research laboratories in Japan.

In order to develop human resources for S&T, it is necessary to improve science and mathematics education as well as to enhance scientific thinking and expression, and an interest in science. It is also necessary to understand students' tendencies to avoid science and to solve this problem. Based on these understandings, MEXT added science for the FY 2012 nationwide surveys on academic performance and learning situations. The results showed that students had challenges in interpreting, considering and explaining the results of an observation or experiment after organizing and analyzing them. MEXT, based on the "Science Education Promotion Act" (Act No. 186 of 1953), is also promoting the systematic improvement of replacing missing or old equipment, such as the laboratory instruments used for science, arithmetic and mathematics education at elementary schools and lower/upper secondary schools.

The National Institution for Youth Education has set up the "Children's Dream Fund" and is assisting various activities, such as a children's hands-on science experience that is conducted by private organizations.

In addition, in order to spread knowledge about intellectual property, the Patent Office is supporting

high schools and colleges of technology through the National Center for Industrial Property Information and Training; this will help to practically develop human resources and their intellectual property.

(2) Development of the individuality and abilities of talented children

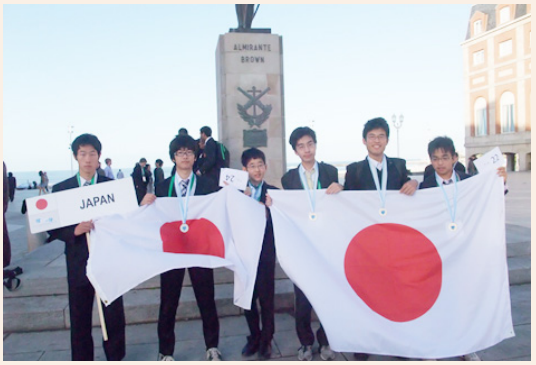
MEXT is making efforts to develop international human resources for S&T for the future by designating high schools that focus on science and mathematics education as "Super Science High Schools (SSH)" and by having JST support each designated school. Specifically, these efforts include the development and practice of curricula not based on the National Curriculum Standards, the promotion of task-oriented research, the development of human resources for S&T and the sharing of results with other schools. In FY 2012, 178 high schools nationwide made distinctive efforts. In addition, in order to develop promising human resources for S&T at the undergraduate level, MEXT is conducting the "Science and Mathematics Students Support Project," which focuses on efforts to further develop motivation and ability among students who have a strong desire to study science and mathematics at universities that have science departments. Furthermore, MEXT holds a research competition called the "Science Intercollegiate," as an opportunity for nationwide undergraduate students who are learning the natural sciences to present the results of their own studies and to compete against each other; it is also as an opportunity for them to interact with researchers and business people. The second competition of the "Science Intercollegiate" was held at the Makuhari Messe International Convention Complex and 145 of 234 applicant groups that had successfully passed a documentary examination made presentations.

JST holds the International Science Olympiads in areas of science, such as mathematics, physics, chemistry, biology, informatics, geography and earth science; it also holds national versions of the competition in order to prepare students for the international S&T contest, which is hosted by the International Science and Engineering Fair (ISEF). Also In addition, JST dispatches Japan's national team to international competitions and supports the holding of international competitions in Japan (Figure 2-4-4). JST holds the "Japan High School Science Championships" as an opportunity for nationwide high school students to compete between schools and between teams by testing students' knowledge and technical skills in multiple areas of science, technology and mathematics. In FY 2012, the second national competition was held at the Hyogo Prefectural Gymnasium. About 6,300 students participated in the qualifying competitions that decided each prefecture's representative from across the country (Figure 2-4-5).

Furthermore, MEXT, the Japan Patent Office, the Japan Patent Attorneys Association and the National Center for Industrial Property Information and Training hold and design patent contests for high school and university students in order to deepen their understanding and interest in intellectual property among the Japanese public. Excellent inventions and designs are selected from among all applications and honored; the organizer then supports these students in actually applying for patents and design registrations as well as assisting them in their acquisition of rights.

Figure 2-4-4/ Prize Winners of the International Science and Technology Contest in FY 2012

Competitors of the International Mathematical Olympiad, Argentina



From the left

Koyo Hayashi	12th grade, Shizuoka Prefectural Hamamatsu Kita High School, Honorable mention
Takuma Kitamura,	12th grade, Nada High School, Silver
Daisuke Miyamoto	10th grade, Nada High School, Bronze
Shogo Murai	12th grade, Kaisei High School, Silver
Hiroki Komatsu	12th grade, Eiko Gakuen Senior High School, Silver
Kento Nomura	10th grade, Tsukuba University's Komaba High School, Silver

Competitors of the International Physics Olympiad, Estonia

From the left

Tasuku Oomori	11th grade, Nada High School, Silver
Kazumi Kasaura	12th grade, Kaisei High School, Gold
Kohei Kawabata	12th grade, Nada High School, Silver
Hiromasa Nakatsuka	12th grade, Shiga Prefectural Zeze High School, Silver
Yuichi Enoki	11th grade, Nada High School, Gold

Competitors of the International Chemistry Olympiad, U. S. A.

From the left

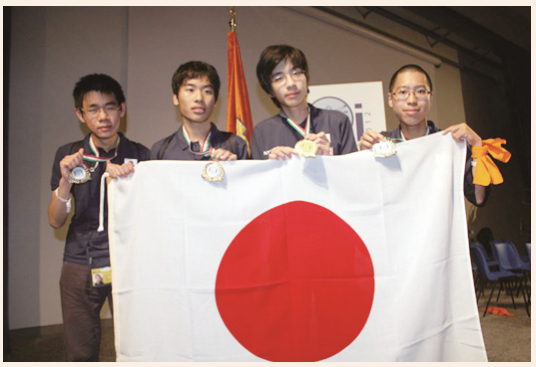
Ryota Shibuya	12th grade, Tennoji High School attached to Osaka Kyoiku University Silver
Tomohiro Soejima	12th grade, Rikkyo Ikebukuro Senior High School, Gold
Takuya Yamakado	12th grade, Nada High School, Gold
Takehiro Kato	12th grade, Tsukuba University's Komaba High School, Silver

Competitors of the International Biology Olympiad, Singapore

From the left

Tomohiro Maeda	11th grade, Nada High School, Silver
Taiga Araki	12th grade, Miyazaki Prefectural Miyazaki Nishi High School, Silver
Natsumi Noda	12th grade, Oin High School, Silver
Kazuki Yoda	12th grade, Tsukuba University's Komaba High School, Silver

Competitors of the International Olympiad in Informatics, Italy



From the left

Kazumi Kasaura	12th grade, Kaisei High School, Silver
Ikumi Hide	12th grade, Kaisei High School, Silver
Shogo Murai	12th grade, Kaisei High School, Gold
Koji Ryuko	11th grade, Eiko Gakuen Senior High School, Silver

Competitors of the International Earth Science Olympiad, Argentina

From the left

Junpei Maruyama	12th grade, Seiko Gakuin High School, Silver
Kenji Matsuo	12th grade, Nada High School, Silver
Norihiko Nakasato	12th grade, Yokohama Science Frontier High School, Gold
Kento Shimamoto	12th grade, Hiroshima Gakuin High School, Silver

Competitors of the International Geography Olympiad, Germany

From the left

Kenta Ito	12th grade, Gunma Prefectural Chuo Secondary School
Kishin Kato	12th grade, Nara Women's University Secondary School, Bronze
Ryu Oota	12th grade, Fukuyama Junior and Senior High School Attached to Hiroshima University,
Hajime Yoshishige	11th grade, Tsukuba University's Komaba High School

Source: Created by MEXT

Figure 2-4-5/ The Second Annual Japan High School Science Championships

Winner Aichi Prefectural Okazaki Senior High School

From the front left

Yasushi Maruyama (11th grade) Somi Ozaki (10th grade)

From the back left

Yoshiki Sunada (11th grade) Hiroki Suganuma (11th grade)

Hikaru Ootake (11th grade) Yuri Kobayashi (11th grade)

Tatsuya Sueki (11th grade) Keita Izawa (10th grade)

※ Grade levels are listed by each student's levels at the time of winning the prize.

Source: Created by MEXT

Column 2-8

Excellent Performance of Female Students in Science and Engineering Majors at the Second Intercollegiate Science Competition

MEXT has held the Intercollegiate Science Competition since FY 2011 in order to develop creative human resources in S&T fields who have the capabilities of setting an objective and pursuing it with originality and presentation skills. An old Japanese saying professes that "a tall tree catches much wind," and because many of the students are "tall trees" already, the Intercollegiate Science Competition embraces a new goal, to "Grow a tall tree even taller," and thus, it provides an opportunity for undergraduate students who are studying the natural sciences to grow by presenting the results of their research and by competing with each other on the national level, as well as by interacting with researchers at universities and with business people. The FY 2012 second competition was held at the Makuhari Messe International Convention Complex for two days on Saturday, March 2, and Sunday, March 3, 2013. A total of 145 teams (47 in the oral-presentation category and 98 in the panel-presentation category), were selected from 234 applications through document review, and each gave presentations on their own research. As a result, 16 teams were honored, and Mr. Hisashi Jono, a student at the University of Yamanashi, was given the Ministry of Education and Science Award.

This competition drew a larger audience than the previous one, with many ordinary high-school students and people from various universities attending. What is remarkable is that this time more than 100 female students, about 50 more than the last time, submitted applications, and the proportion of female finalists who passed the document review increased by 10 percent over the last time, to about 40 percent. Female students were represented in more than 60 percent of the groups (10 out of 16) that won the Intercollegiate Science Competition Encouragement Prize or a higher prize, including six groups among the eight that won a prize in the panel-presentation category. In addition, a new prize, called the "Female Science Student Prize," was given by a supporting company. In fact, more than half of all the prizes (10 out of 17) awarded by supporting companies were given to research presentations having a female leader. Such great performances by female students was very impressive, indicating that further progress is being made by female students in science and engineering fields, and that these students will continue to achieve in the future.

The taking of a commemorative photograph of Mr. Jono and Mr. Fukui, the Senior Vice-Minister of Education and Science
Courtesy of MEXT

The taking of a commemorative photograph of the winners in the panel-presentation category and the presenter of the award
Courtesy of MEXT

Section 3 Establishment of a World-Class Research Environment and Infrastructure

1 Improvement of R&D Environments at Universities and Public Research

(1) Development of facilities and equipment at universities

Universities should develop high-quality facilities and equipment with satisfactory functions in order to cope with more advanced and diversified educational and research activities, to attract quality human

resources and to enhance global competitiveness, as well as to promote industry-university cooperation, local contributions, and internationalization. In addition, considering the current financial difficulties and the damage caused by the GEJE, the government should promote efforts to develop and advance such facilities and equipment, and to ensure stable operation.

1) Facilities and equipment at national universities

Facilities of national universities[1] play an important role as the base for activities, such as creative, advanced-academic research, training for creative and quality human resources, and the promotion of advanced medical treatment.

For this reason, based on the Fourth Basic Plan, MEXT developed "The 3rd Five-Year Program for Facilities of National Universities (FY 2011 – FY 2015)" (hereinafter referred to as the 3rd Five-Year Program) in August 2011, promoting systematic and prioritized improvement of the facilities.

The 3rd Five-Year Program prioritizes the following projects: 1) the improvement of outdated facilities such as earthquake-retrofitting (approx. 4,000,000 m²), 2) the improvement of advanced research facilities and cramped facilities (approx. 800,000 m²), and 3) the improvement of university hospitals conducting highly advanced medical treatment (approx. 700,000 m²) (5,500,000 m² in total). In addition to these improvements, the program further promotes efforts for system reform, including the establishment and enhancement of a development plan for the entire campus (campus master plan), and the promotion of strategic facility management, such as the effective utilization and adequate maintenance management of existing facilities (Figure 2-4-6).

The improved areas and the rates of progress in relation to the improvement targets through FY 2012, the second year of the 3rd Five-Year Program, are expected to be as follows: 1) the improvement of outdated facilities (progress rate): 1,496,000 m² (37%). 2) the improvement of cramped facilities (progress rate): 346,000 m² (43%), and 3) the improvement of university hospitals (progress rate): 282,000 m² (40%). The actual improvements are expected to be close to the targets[2].

Facilities of national university corporations are the foundation for education and research, and their improvement and development are indispensable.

Those facilities have been aging and have recently become obsolete, and their renovation is an urgent issue. For this reason, MEXT is providing these corporations with financial support based on the "Master Plan for Facilities" formulated by each corporation and by carrying out the "Development Program for Research Equipment Support Centers" to provide the support necessary to develop a system for joint use and effective use of facilities.

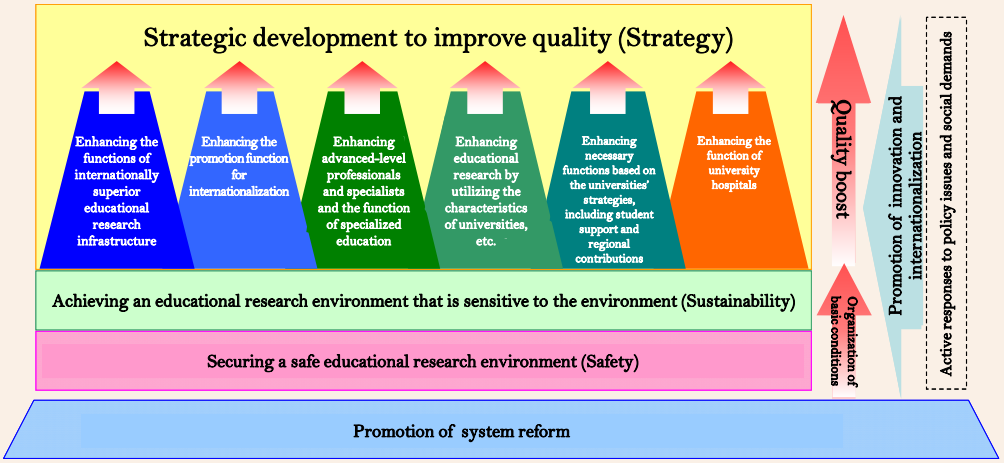
MEXT is also offering support to the world's most advanced research facilities created from Japan's original ideas, such as the idea of "Exploring Physics beyond Today's Particle Theory with Super B-Factory" through the "Large-scale Academic Frontier Promotion Program," (refer to Part 2 Chapter 4 Section 1, 1).

Furthermore, for emergency economic measures, the government ensured that the supplementary budget for FY 2012 included expenses for the improvement of educational research infrastructure at national universities (82 corporations, 31.4 billion yen), expenses for the enhancement of research

1 Including Inter-University Research Institute Corporations and Institutes of National Colleges of Technology
2 Including the improvements achieved in FY 2011 by means of various financial resources such as contributions

capabilities at universities by means of improving advanced research infrastructure (42 corporations, 46.2 billion yen) and expenses for the development of the basic facilities at national universities that are supporting innovation in each of their regions (56 corporations, 13 billion yen), all of which support the improvement and enhancement of educational research infrastructure.

Figure 2-4-6: Basic Concepts of The Third Five-Year Program for Facilities of National Universities



Source: Created by MEXT

2) Facilities and equipment at private universities

Private universities, which make up about 80% of Japan's higher educational organizations, have a variety of researchers, and thus have played a major role in the development of higher education by vigorously performing characteristic research activities. MEXT is working to enhance private universities' research infrastructure by implementing the "Strategic Research Foundation Grant-aided Project for Private Universities," which provides comprehensive support of research facilities and equipment for excellent research projects.

(2) Promoting the development and shared usage of advanced research facilities and equipment

Public research organizations have so far played a leading role in the development and operation of advanced research facilities and equipment, which require high levels of funding and are appropriate for joint use in extensive areas of S&T. Such advanced research facilities and equipment are very important to produce key R&D findings and to develop personnel, but the way to maintain and manage such facilities has become a matter of concern as financial support for public research organizations has been decreasing. For this reason, the government is taking measures to ensure that public research organizations can sufficiently develop, operate, and promote extensive joint usage of such facilities and equipment.

MEXT is steadily proceeding with the development and renewal of advanced research facilities and the equipment expected to be used for extensive areas, and is providing support to promote the joint usage of the facilities (refer to Part 2 Chapter 3 Section 1, 5 (2)).

2 Enhancement of Intellectual Infrastructure

In order to promote R&D activities effectively and efficiently, intellectual assets, such as research results and research materials, should be systematized so that they can be widely available for use by researchers. To this end, it is necessary to provide stability within the intellectual infrastructure[1] that supports the basic R&D activities, such as experiments, measurement, analysis and evaluation, in order to maintain both the quality and quantity of research, and to secure its safety and reliability. As the development of research materials, measurement standards, and measurement-evaluation methods has progressed favorably, the development and utilization of intellectual infrastructure is being promoted from the viewpoint of improving quality in order to meet the various needs of users.

In order to support research in the life sciences field, MEXT is preparing bio resources at the "National Bio Resource Project (NBRP)," while JST is making necessary efforts to integrate databases in the life-sciences field at the "Integration Database Project" (refer to Part 2 Chapter 2 Section 3, 2). MEXT is also promoting the development of one and only, cutting-edge technologies and instruments for measurement and analysis that can meet the needs of the world's leading researchers as well as the needs of factory workers (refer to Part 2 Chapter 3 Section 1, 5 (1)).

Based on the fact that the 4th Basic Plan required a new plan for the enhancement of intellectual infrastructure, MEXT held a meeting of the Special Committee on Measurement Standards and Intellectual Infrastructure (Chair: Dr. Koichi Kitazawa, Adviser to President of JST), a joint body composed of the Industrial Structure Council and the Japanese Industrial Standards Committee (JISC), in order to discuss the development of a new intellectual infrastructure and the specific utilization of it. An interim report was compiled in August 2012.

Regarding measurement standards, the "R&D of the one-to-many type calibration technique," which was conducted by the National Institute of Advanced Industrial Science and Technology (AIST), developed standards for the safety of medicine and food, some of which have been applied to official methods[2]. In addition, the meter-standard and related standards owned by AIST were designated as nationally important cultural properties. Their cultural and academic importance in weights and measures in modern Japan was fully recognized. In addition, AIST has developed an optical lattice clock using ytterbium atoms, and it was adopted as a candidate for the new definition of the second (secondary representations of the second) at a meeting leading up to the Meter Convention, held by the International Committee for Weights and Measures in France. The optical lattice clock thus made a major contribution to the establishment of international measurement standard technology.

Regarding geological information, AIST produced five 1/50,000 geological maps, five 1/200,000 marine geological maps, one 1/25,000 volcano geological map and one 1/200,000 gravity map. It also provided the results of research on the coast of Fukuoka as a land-sea seamless geological information model on coastal areas. In addition, AIST updated the 1/200,000 seamless geological map of Japan[3] and edited the next-generation seamless geological map. AIST improved the active fault database so that it can display a seamless geological map on the search screen (Figure 2-4-7). Furthermore, 12,137 new

1 This includes research materials, such as bio resources, measurement standards, methods for measurement/analysis/test/evaluation, advanced equipment for them and related databases.
2 The Japanese Pharmacopoeia, the Japanese Standards of Food Additives, etc.
3 On the basis of the 1/200000 map, the geological maps for the whole country are integrated with a uniform standard, which makes it possible to be viewed on the Web site.

items were registered in the geological document database, and 5,010 new items were registered in the geological specimen database.

As for genetic-resource information, the National Institute of Technology and Evaluation (NITE) collects, preserves, and distributes genetic resources, while preparing information on the resources (systematic placement, information concerning genes, etc.) so as to make it widely available. It has also integrated the databases of major genetic resources in Japan and made them public. In addition, NITE is actively working on the development of genetic resources in Asia in accordance with the Convention on Biological Diversity (CBD). Based on the memorandum of understanding among Asian countries, NITE transfers microorganisms between governments and analyzes them, as well as promotes multilateral interaction for the conservation and sustainable use of microorganism resources.

As for the safety management of chemical substances, the National Institute of Technology and Evaluation (NITE) collects and coordinates data necessary for risk assessment and makes it public in a database (Chemical Risk Information Platform) in addition to collecting regulatory information in other Asian countries. NITE has also developed methods to assess risks in accordance with the "Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc." (Act No. 117 of October 16, 1973) and has performed risk assessment.

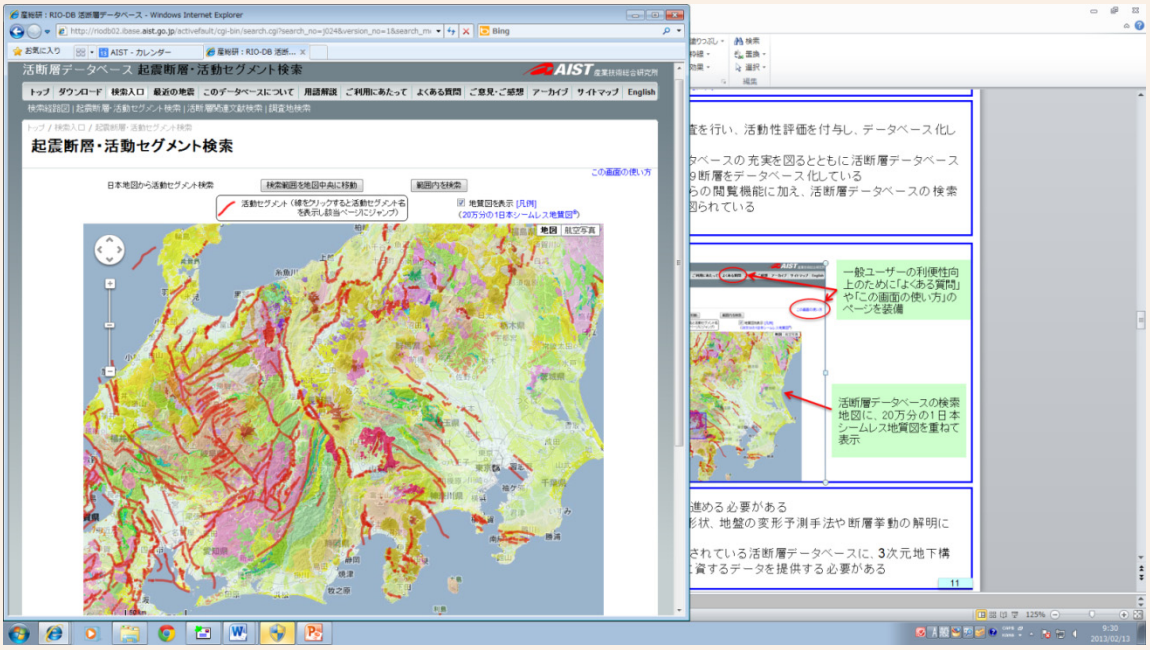
Regarding product safety information, NITE collects information on product accidents, investigates their causes and makes the results public in a database.

In order to provide data on genomes and the genes of agricultural, forestry and fishery products for breeders and researchers at universities and private companies, the Ministry of Agriculture, Forestry and Fisheries (MAFF) is preparing a convenient database that integrates such data and is developing a higher-order analysis system for massive amounts of genome fragment data produced by the next-generation genome analyzers. MAFF collects, preserves, assesses and provides genetic resources related to the industries of agriculture, forestry, and fisheries as part of the Gene Bank Project and also preserves and provides genome resources, such as the DNA of rice.

The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has organized and provided "Basic Map Information[1]," which is a core measure of the "Basic Plan for the Advancement of Utilizing Geospatial Information." MLIT also conducted surveys and research on the use of geospatial information.

1 Criteria for defining locations of geospatial information on digital maps

Figure 2-4-7/Active Fault Database



The database has been improved so that it can display a 1/200,000-scale seamless geological map on the search screen.
Source: Geological Survey of Japan (GSJ), AIST

3 Enhancement of Research Information Infrastructure

Research information infrastructure is regarded as a critical lifeline for research activities. Therefore, improving it in response to the rapid progress of information and communications technology is essential for securing the international competitiveness of Japan's R&D. The government is taking concrete actions toward this end, such as developing and upgrading networks between research organizations, and building and providing databases.

(Enhancement of networks)

Computer networks, which make up the basic system of our modern society, were first developed at R&D labs and then used in various areas. It is necessary to further improve the performance of these networks for progress in developing cutting-edge R&D.

The National Institute of Information and Communications Technology (NICT) has established and has been operating the next-generation communications network test-bed (JGN-X) in order to promote R&D and to operate verification tests of next-generation network technologies (refer to Part 2 Chapter 3 Section 1, 2 (2)).

The National Institute of Informatics (NII) has developed a science information network as infrastructure that supports the overall science research and educational activities of our country's universities. The network has achieved higher speeds, more functionality and greater reliability and has been operating as SINET 4[1] since April 2011.

MAFF has established and is operating the Ministry of Agriculture, Forestry and Fisheries Research

1 The Science Information Network 4 is the world highest level network that is able to be connected at the maximum speed of 40 Gbps.

Network (MAFFIN), a research network that mutually connects the research organizations related to agriculture, forestry and fisheries. As of the end of March 2013, a total of 91 organizations were connected through MAFFIN. As MAFFIN is linked to the Philippines, this network is now used as a backbone for the distribution of research information overseas.

(Establishment and provision of database)

Libraries and many other organizations provide services about source materials for scientific papers, including reading, copying and lending. Creating a database on bibliographic and location information of source materials owned by those organizations enables researchers to search increasing amounts of information quickly, accurately and easily with a computer.

The National Diet Library archives all publications issued in Japan, creates a database on the materials it collects and archives, and provides this information on its Web site[1].

The National Institute of Informatics (NII) systematically collects information on S&T necessary for creating innovation, organizes it for ease of use and makes it public on the Internet in order to promote R&D activities effectively and efficiently. For example, in cooperation with national, public and private universities across Japan, NII has created and provided a cataloged information database on academic books and magazines archived at university libraries. It also supports the construction of an institutional repository[2] at each university (including offering joint-repository services to institutions having difficulties building a database on their own).

JST is offering an information service, J-GLOBAL, by developing a basic information database about documents, patents and researchers related to S&T both inside and outside Japan. The database is also designed so that if one enters a researcher's name, it will display the papers that researcher has written, the patents he owns, and other researcher-specific information. In FY 2012, the operation screen was improved so that users could use it intuitively, and a function was added that allows users to easily find technical terms used in searches. JST also offered a document information retrieval service, the JST Document REtrieval system for Academic and Medical fields II (J-Dream II), which developed Japanese-language abstracts of S&T documents for a database and provided the information on the Internet for a fee. The retrieval service was privatized in FY 2012. In addition, in order to enhance the dissemination of Japan's research results to the world, JST has been operating the Japan Science and Technology information AGregator, Electronic database (J-STAGE), an integrated system for the dissemination and distribution of S&T information. J-STAGE supports the entire process of online publishing, including the-: submission of research papers to academic journals, peer review, judgment, and the uploading of articles on the website, all of which help to support the internationalization, dissemination and distribution of Japan's academic journals both inside and outside of Japan. In 2012, JST released J-STAGE 3, in which the database format was changed so as to meet the international standards and the system for submitting and screening these was also improved.

MAFF collects and offers information on documents related to agriculture, forestry, and fisheries, as well as information on the locations of books and materials, such as providing the Japanese Agricultural

1 http://iss.ndl.go.jp/
2 Archives on the Internet where electrical intellectual outcomes produced by educational research activities at universities and research institutions are stored to transmit for free in principle.

Sciences Index (JASI), which is published in Japan and serves as a bibliographic database of articles in academic journals related to agriculture, forestry and fisheries. MAFF also builds and provides a full-text information database and a satellite-image database, which digitize research reports on agriculture, forestry and fisheries and is produced by independent administrative organizations for both experimentation and research, and by national and other public research organizations and universities. A database on research topics currently studied at various experimental and research organizations has also been created and provided. Table 2-4-8 below shows the outlines of the main measures for research information infrastructure as implemented in FY 2012.

Table 2-4-8/ Outlines of the Main Measures for Research Information Infrastructure Implemented (FY 2012)

Ministry/Agency	Organization	Subject
Diet	National Diet Library	• Acquisition and development funds for science and technology-related resources at the National Diet Library
Ministry of Internal Affairs and Communications	National Institute of Information and Communications Technology	• Establishment of an advanced network testbed for research and development (JGN-X)
Ministry of Education, Culture, Sports, Science and Technology	Japan Science and Technology Agency	• Establishment, utilization and promotion of basic science and technology Information (J-GLOBAL, etc.)
		• Integrated Database Project (NBDC)
		• Promotion of computerization, internationalization, dissemination and distribution of science and technology papers, (J-STAGE, etc.)
		• Providing document information on S&T (JDream II, etc.)
	Japan Agency for Marine-Earth Science and Technology	• Information infrastructure operating costs
	National Institute of Informatics	• Development of the Scientific information Network (SINET 4)
Ministry of Health, Labour and Welfare	National Institute of Infectious Diseases	• Budget for the Infectious Disease Surveillance Center
		• Research project expenses for collecting, analyzing, and assessing safety data on biological preparations
Ministry of Agriculture, Forestry and Fisheries	Agriculture, Forestry and Fisheries Research Council Secretariat	• Operation of Agriculture, Forestry and Fisheries Research Information Technology Center (JASI, MAFFIN, etc.)
Ministry of Land, Infrastructure, Transport and Tourism	Geospatial Information Authority of Japan	• Promotion of Global Mapping Project (Development of the time-series data maintenance method)
Ministry of the Environment	Biodiversity Center of Japan	• Promotion of the collection, management and provision of Integrated Biodiversity Information
Ministry of Education, Culture, Sports, Science and Technology Japan Patent Office	Japan Science and Technology Agency National Center for Industrial Property Information and Training	• Improvement of a comprehensive search system for patent and document information
Japan Patent Office Relevant Ministry/Agency	National Center for Industrial Property Information and Training	• Provision of Research Tool Database (RTDB)