

Evaluation of FY2017 Operating Results for
National Research Institute for
Earth Science and Disaster Resilience

August 2018

Minister of Education, Culture, Sports, Science and Technology

1. Items related to the evaluation		
Agency	National Research Institute for Earth Science and Disaster Resilience	
FY for evaluation	FY evaluation	FY2017
	Mid to long-term objective period	FY2016- FY2022 (4th term)

2. Items related to the assessor			
The Competent Minister	Minister of Education, Culture, Sports, Science and Technology		
Incorporated jurisdiction dept.	Research and Development Bureau	Dept. and person in charge	Earthquake and Disaster-Reduction Research Division, Ei Takeuchi
Evaluation and inspection dept.	Science and Technology Policy Bureau	Dept. and person in charge	Planning and Evaluation Division, Keiji Inoue
The Competent Minister			
Incorporated jurisdiction dept.		Dept. and person in charge	
Evaluation and inspection dept.		Dept. and person in charge	

3. Items regarding implementation of evaluation
<p>On June 26, 2018, the National Research Institute for Earth Science and Disaster Resilience Sub-committee (15th), the National Research and Development Agency Council under MEXT (hereafter referred to as the “Sub-Committee”) conducted the first hearing, including opinions and explanations from the director about the results of the Agency’s self-evaluation, and received advice in line with scientific knowledge from the committee regarding the implementation of evaluations conducted by the competent minister.</p> <p>On July 19, 2018, the sub-committee (16th) conducted the second hearing on the results of the Agency’s self-evaluation, and received advice in line with the scientific knowledge from the committee regarding the implementation of evaluations conducted by the competent minister.</p> <p>On July 31, 2018, the sub-committee (17th) discussed the results of the evaluation, and received advice in line with the scientific knowledge from the committee regarding the implementation of evaluations conducted by the competent minister.</p> <p>On August 22, 2018, the National Research and Development Agency Committee of the Ministry of Education, Culture, Sports, Science and Technology (12th) discussed the results of the evaluation, and received advice in line with scientific knowledge from the committee regarding the implementation of evaluations conducted by the competent minister.</p>

4. Important items and others items relating to the evaluation
No special matters to note.

1. Overall rating									
Rating*1 (S, A, B, C, D)	A	(Reference) Overall rating in the past fiscal years in this mid to long-term objective period*2							
			FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
		Improvement of business quality	B	A					
		Improvement of efficiency in business operations	B						
Improvement of financial conditions	B								
Reasons for rating	As shown in the overall evaluation of the agency as a whole, the creation of considerable achievements and anticipated creation of achievements in the future and so on were recognized as a result of comprehensive consideration based on circumstances surrounding the agency's business achievements, efforts and so on through its activities and with the national research and development agency's mid to long-term objectives taken into account. Although the rating of self-evaluation was B, the overall rating was A because, as explained in the evaluation of the agency as a whole, significant achievements were recognized particularly in the promotion of utilization and sharing of fundamental observation network and cutting-edge research facilities, and contribution to disaster resilience policy.								

2. Evaluation of the whole agency	
<p>The following can be highly evaluated: In preparation for disasters such as Tokyo Inland Earthquake, the “Comprehensive Resilience Enhancement Project in Tokyo Metropolitan Area” was newly launched, the “Metropolitan Resilience Research Center” set up to implement this project, and R&D was promoted by a variety of external human resources using the cross-appointment system to formulate an “All-Japan” regime jointly with researchers in universities and sympathetic companies and organizations, and this further accelerated industry-academia-government cooperation under the “Data use and application council for Resilience” in which private companies have participated.</p> <ul style="list-style-type: none"> ○ The following can be highly evaluated: Social implementation of research achievements has been aggressively promoted through the commencement of the operation of land and sea areas in an integrated manner using the Monitoring Of Waves on Land And Seafloor (MOWLAS) which surpassed the numerical target of 95% in operating rate through appropriate maintenance and management. Particularly notable is the use and application of observation data from the world's largest seafloor observation network (Seafloor Observation Network for Earthquakes and Tsunamis along the Japan Trench (S-net)) by a railway operator for the control of bullet trains as the first use and application of this data by a private company. ○ The following can be highly evaluated: Efforts were made for timely, proactive and effective publication such as broadcasting on television of the commencement of MOWLAS operation, joint news conference of the prefecture and university on “Yuki-oro-Signal” (snow removal signal), and prompt launch of a crisis response site in the event of a disaster, and significant achievement was obtained in information dissemination and outreach activities for better public understanding. ○ The following can be highly evaluated: Renovation of a test image recording system which may expand the use of test facilities in R&D on seismic damping by using test images on information products useful for improving disaster resilience literacy in addition to the appropriate management and operation of 3-D Full-Scale Earthquake Testing Facility (E-Defense). ○ The following can be highly evaluated: Improvement of the regular information gathering system in coordination with efforts for implementing the Strategic Innovation Creation Program (SIP) and so on enhanced the archive function for disaster information, and a variety of information, much more than that at the time of Kumamoto Earthquake in the previous fiscal year, was shared, disseminated and used by a number of agencies and organization, including front-line response organizations such as SDF and fire stations, by improving the operation of the NIED crisis response site and streamlining of the support system in response to the occurrence of 8 disasters in FY2017 (including those being alarmed). ○ The following can be highly evaluated: By reinforcing the disaster response system in light of the experience to respond to the Kumamoto Earthquake in FY2016, suitable response was taken in the July 2017 Northern Kyushu Heavy Rain and other disasters in FY2017, contributing to supporting affected local governments, and the results of the Sharing Information Platform for Disaster management System (SIP4D) for ministers and agencies developed by NIED led to the core participation in the “State-local community-private sector ‘Disaster Information Hub’ promotion team” launched by the Director General for Disaster Management of the Cabinet Office and activities in the “Information Support Team (ISUT)” composed of the public and private sectors for gathering onsite information. ○ The following can be highly evaluated: Experiments were carried out for understanding the distribution of delays in plate subduction rate obtained from the research on massive earthquake generating mechanism and clarifying the principle of friction using large friction testing machines, and achievements were obtained earlier than planned. ○ The following can be highly evaluated: Universities, local public organizations and private sector have steadily collaborated in joint R&D on prediction technologies for water, snow and ice disasters, and this led to efforts 	

for social implementation including the demonstration of achievements in 2017 Northern Kyushu Heavy Rain and practical application of the “Yukioro-Signal,” and with regard to the hazard risk evaluation for natural disasters, efforts for earthquake and tsunami hazard evaluation have been widely accepted by the public and social implementation of real-time information on estimated damage from the earthquake in progress.

3. Issues to be solved and /or improved for each subject

- Wider use and application of data and research achievements obtained from the observation network is expected.
- Efforts must be intensified for issues such as the transfer of professional research achievements to society in an understandable and prompt manner.
- It is important to make social implementation affordable so that research achievements are widely disseminated while meeting administrative and social needs in cooperation with the Cabinet Office and local governments.

4. Other items

Main opinions of the council on research and development	No special matters to note.
Auditor’s special comments	No special matters to note.

- *1 S: Based on the National Research and Development Agency’s aims, businesses with mid to long-term objectives due to comprehensive consideration based on some circumstances regarding the agency’s business achievements, and efforts through its activities, especially the creation of considerable achievements, anticipated creation of special achievements in the future and so on toward “maximization of R&D achievements” under the conditions of appropriate, effective and efficient operations are recognized.
- A: Based on the National Research and Development Agency’s aims, businesses with mid to long-term objectives due to comprehensive consideration based on some circumstances regarding the agency’s business achievements, and efforts through its activities, especially the creation of considerable achievements, anticipated creation of special achievements in the future and so on toward “maximization of R&D achievements” under the conditions of appropriate, effective and efficient operations are recognized.
- B: Based on the National Research and Development Agency’s aims, business with mid to long-term objectives due to comprehensive consideration based on some circumstances regarding the agency’s business achievement, and efforts through its activities, a, certain degree of expectation for the creation of achievement and creation of achievement in the future toward “maximization of R&D achievements” were recognized, and steady business operations have been also recognized.
- C: Based on the National Research and Development Agency’s aims, businesses with mid to long-term objectives due to comprehensive consideration based on some circumstances regarding the agency’s business achievements, and efforts through its activities, the creation of achievements, further drastic efforts and improvements toward “maximization of R&D achievements” or “appropriate, effective and efficient operations” are anticipated.
- D: Based on the National Research and Development Agency’s aims, businesses with mid to long-term objectives due to comprehensive consideration based on some circumstances regarding the agency’s business achievements, and efforts through its activities, special efforts and improvements including a fundamental drastic review, toward “maximization of R&D achievements” or “appropriate, effective and efficient operations” are required.

Mid to long-term objectives (Mid to long-term plan)	FY evaluation							Itemized evaluation document No.	Remarks
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022		
I. Maximization of R&D achievements and quality improvement of the other operations									
1. Formation of a core organization for innovation in research on disaster resilience technologies									
Promotion of collaboration among industry, academia and government as a core institution	B	A						1-1-1	
Promotion of utilization and sharing of fundamental observation network and cutting-edge research facilities	A	S						1-1-2	
Spread of R&D achievements and promotion of utilization of intellectual property	B	A						1-1-3	
The international expansion of research and development	B	B						1-1-4	
Nurturing human resources	B	B						1-1-5	
Contribution to disaster resilience policy	S	S						1-1-6	
2. Promotion of basic research and fundamental research and development concerning disaster resilience science and technology									
Promotion of research and development for observing and predicting disasters in real time	B	A						1-2-1	
Promotion of research and development aimed at improving the resiliency of social infrastructure	B	B						1-2-2	

Mid to long-term objectives (Mid to long-term plan)	FY evaluation							Itemized evaluation document No.	Remarks
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022		
II. Items concerning the efficiency of the administration of the operations									
1. Establishment of flexible and efficient management system									
Review of research organization and business	B	B						2-1-1	
Internal control	B	B						2-1-2	
Implementation of evaluation concerning research and development, etc.	B	B						2-1-3	
2. Efficient operations									
Streamlining and efficiency of operational expenses	B	B						2-2-1	
Streamlining and efficiency of personnel expenses	B	B						2-2-2	
Review and check of the current contracts' status	B	B						2-2-3	
Promotion of computerization	B	B						2-2-4	
III. Items regarding improvements in financial related matters									

Promotion of fundamental research and development for disaster risk mitigation and reduction	B	A						1-2-3	

1. Budget (including personnel expenses)/ income and expenditure plan, and funding plan 2. Limit amount of short-term borrowing 3. If the agency has any unnecessary property or any property that is expected to be unnecessary, a plan for disposal of such a property plans for transferring important properties 4. If the agency intends to transfer or provide as collateral any important property other than the property provided for in the preceding item, a plan therefor; Plans for transferring other important properties and security 5. Purpose of using accumulated profit	B	B							3
IV. Other items									
1. Ensuring and enhancing people's reliability 2. Matters concerning personnel 3. Facilities and equipment related issues 4. Debt burden for the period exceeding mid to long-term objectives 5. Use of a reserve fund	B	B							4

* For items that are set to "high" level of importance, a "circle" shall be marked next to each comment.
For items that are set to "high" level of difficulty, each comment shall be underlined.

* The evaluation is based on "Standards concerning the evaluation of independent administrative agencies under the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology" (as determined by the Minister of Education, Culture, Sports, Science and Technology on June 30, 2015). The details are as follows.

[Administrative and projects related to research and development (I)]

S: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts and so on through its activities, especially the creation of considerable achievements, anticipated creation of special achievements in the future and so on toward "maximization of R&D achievements" under the conditions of appropriate, effective, and efficient operations are recognized.

A: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts and so on through its activities, the creation of considerable achievements, anticipated creation of achievements in the future and so on toward "maximization of R&D achievements" under the conditions of appropriate, effective, and efficient operations are recognized.

B: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency's business achievement, efforts and so on through its activities, a certain degree of expectation for the creation of achievement and creation of achievement in the future toward "maximization of R&D achievements" were recognized, and steady business operations have been also recognized.

C: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts and so on through its activities, the creation of achievements, further drastic efforts and improvements toward "maximization of R&D achievements" or the "appropriate, effective, and efficient operations" are anticipated.

D: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts through its activities, special efforts and improvements including a fundamental drastic review, toward "maximization of R&D achievements" or the "appropriate, effective, and efficient operations" are required.

[Other than administrative work and projects regarding research and development (After II)]

S: Through the activities of a corporation, remarkable performance exceeding the intended objectives is recognized quantitatively and qualitatively in the medium-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned medium-term value (or planned FY value), and remarkable performance is also recognized qualitatively)

A: Through the activities of a corporation, remarkable performance exceeding the intended objectives is recognized in the medium-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned medium-term value (or planned FY value).

B: Performance exceeding the intended objectives is recognized in the medium-term plan (in terms of quantitative indicators, 100% or more but less than 120% vis-à-vis planned medium-term value (or planned FY value).

C: Performance falls below the intended objectives in the medium-term plan, requiring improved performance (in terms of quantitative indicators, 80% or more but less than 100% vis-à-vis planned medium-term value (or planned FY value).

D: Performance falls below the intended objectives in the medium-term plan, requiring drastic improvement of business including its abolition (in terms of quantitative indicators, less than 80% vis-à-vis planned medium-term values (or planned FY value), or it is recognized that the competent Minister is required to ask for improving business operations or taking other necessary measures).