

### 3) Conduction of TOT and other training courses

To disseminate the technology on seismic evaluation, TOTs were conducted for officers in the organizations to which WG2 members belong from May to October, 2019. A small number of participants was selected in each organization to provide enough explanation and discussion.



TOT for NEMA



TOT for GASl (building)



TOT for GASl (lifeline)



TOT for MCUD and CDC



TOT for UBUDA



Guidelines used in TOT

Source: JICA Expert Team

#### Figure II.1.8 Scenes of Training of Trainer for Relevant Organizations

There were also some training courses which collaborated with MACE. The course is regularly held and gives participants the certificate necessary to apply for a license, raising the motivation to attend.



Lecture on masonry building



Lecture on RC building



Exercise of seismic evaluation

Source: JICA Expert Team

**Figure II.1.9 Scenes of Training of Seismic Evaluation as one of MACE's Training**

**Activity 2.2.1** To develop guidelines-methodologies on seismic strengthening and reconstruction of buildings

The WG2 decided that seismic evaluation and seismic strengthening should be combined in one GL for each structure except for Infrastructures and lifelines, since seismic evaluation and seismic strengthening are strongly related to each other. As mentioned before, GLs were approved by No.185 Ministerial Order of MCUD on Nov. 6<sup>th</sup>, 2018.

**Activity 2.2.2:** Trial Design of Rebuilding and Strengthening Construction for Housing, Kindergartens, Schools, Hospitals and Government Buildings

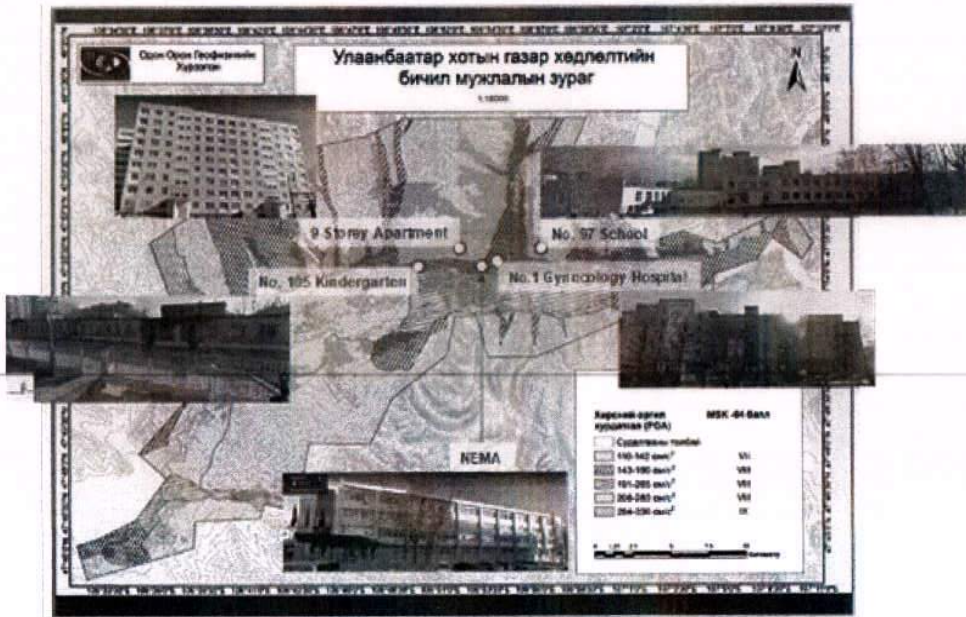
The WG2 members discussed the selection of model buildings that will be used in the trial design. Based on the work plan five buildings with various usage and structural type were selected as shown in Table II.1.11. The location and external appearance of the buildings are summarized in Table II.1.11 and Figure II.1.10.

**Table II.1.11 Model buildings for seismic strengthening**

Structural Type	Usage	Name	Location	Note
Masonry	Kindergarten	No. 105 Kindergarten	Songino Khaikhan District	Constructed with standard design drawings
	School	No. 97 School	Bayanzurkh District	Constructed with standard design drawings

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Earthquake Disaster Protection and Prevention in Mongolia  
Project Completion Report*

	Public Office	NEMA	Sukhbaatar District	Public office necessary for emergency response
RC	Hospital	No.1 Gynecology Hospital	Sukhbaatar District	One of few RC hospital buildings
PC	Apartment House	9-Storey Apartment	Bayangol District	Apartment house based on standard design



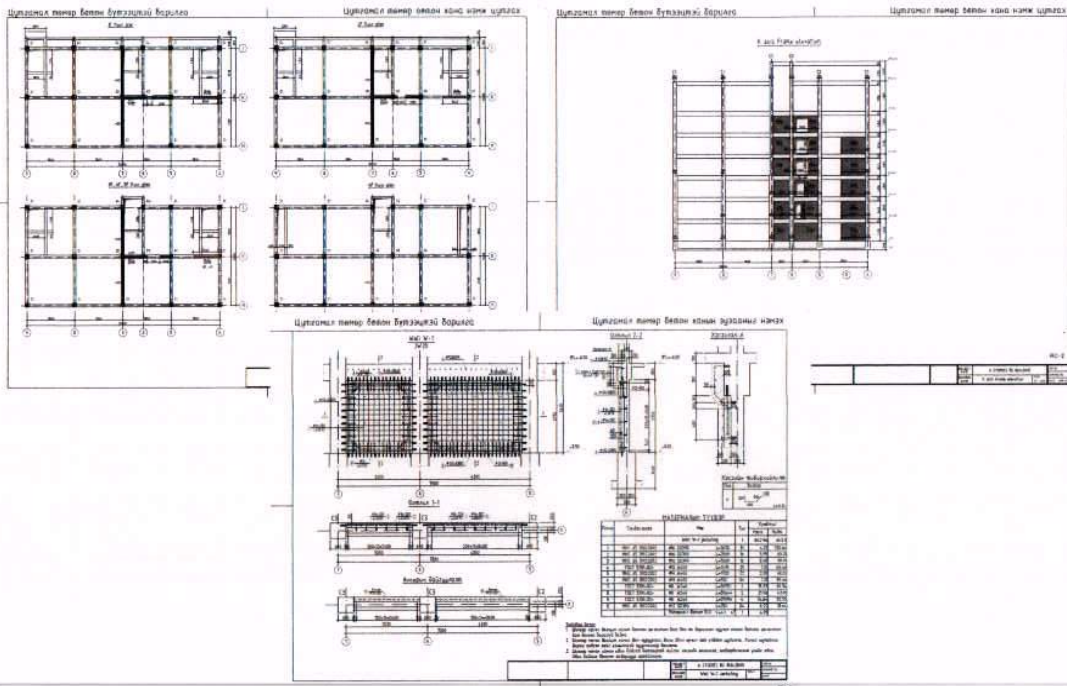
Source: IAG and JICA Expert Team

**Figure II.1.10 Location and External Appearance of Model Buildings for Trial Design**

The data necessary for the strengthening design for these buildings, such as design drawings, calculation sheets, report of existing seismic evaluation and so on were collected and arranged by WG2

Following data collection, the precise seismic evaluation was conducted for RC and PC buildings in accordance with GLs established, to obtain the necessary amount of strengthening as required in Japan. Then a seismic strengthening design was conducted for the buildings. Figure II.1.11 shows the examples of design drawings.

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Earthquake Disaster Protection and Prevention in Mongolia  
Project Completion Report*



Source: JICA Expert Team

**Figure II.1.11 Example of Strengthening the RC building by Additional RC Walls**  
**Activity 2.2.3:** To realize training programs with the participation of NEMA for enhancing knowledge and capacity of the experts who implement seismic strengthening of buildings

WG2 carried out a three-day training course of seismic strengthening of buildings from May 1<sup>st</sup> to 3<sup>rd</sup>, 2019 at the DPTMC and at the conference room of CDC, in which 65 officers and engineers participated.

By questionnaire survey, it was pointed out that the training course was useful for their jobs and similar and continuous training is needed not only in Ulaanbaatar City but in other Cities and towns.

Also TOT on seismic strength was conducted for officers in the organizations to which WG2 members belong, and for the engineers from private company.

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Lecture on strength calculation



Introduction of strengthening works

Source: JICA Expert Team

### Figure II.1.12 Training of seismic strengthening

#### (3) Output3

Activities of Output 3 are conducted in two components, i.e., the school disaster risk reduction (DRR) education component (Activity 3.1.1 – 3.1.4) and the community DRR education component (Activity 3.2.1 – 3.2.3).

**Activity 3.1.1 To develop a guideline which shows contents, method and implementation way of disaster risk reduction (DRR) education in kindergarten and primary and secondary schools based on Law of Disaster Protection**

#### **1) Implementation Policy for the Activities for the Development of School DRR Education Guidelines**

After the detailed discussions among the WG members, it was decided not to establish a committee for the development of the guideline which was originally planned and to conduct main development activities by the WG3-1 members in periodical consultation with the external experts for their technical advice and comments.

Also, it was decided that the guideline is to be developed covering not only earthquake, but also all the disasters which occur in Mongolia as target disasters, with the consideration for developing comprehensive school DRR guidelines.

#### **2) Steps of the Guideline Development**

##### **(a) Introduction of the Guideline and Reference Documents in Japan**

Prior to the development activities, basic ideas and systems for the school DRR education in Japan were introduced using the guideline "Reference Book for School DRR: Implementation of DRR Education for Nurturing a Zest for Living" developed by the Ministry of Education, Culture, Sports, Science, and Technology (hereinafter referred to as "MEXT")

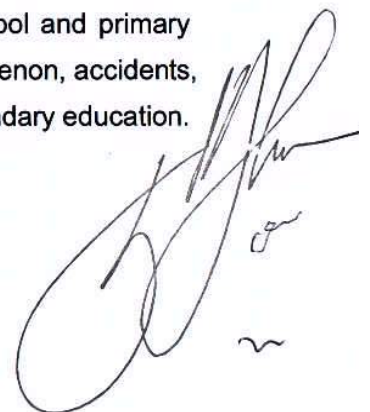
in Japan. Also, the detailed DRR education plans and guidebooks developed based on the guideline by the prefectural and municipality education boards were introduced. Further, the table which shows the relationship of the educational contents described in the guideline and sample lecture plans was provided showing the respective pages of the school textbooks. In addition, more reference documents for the guideline were translated into Mongolian and provided for the WG3-1 activities. A trial DRR lesson on DRR education was also conducted targeting the grade 4 students of the primary school of No. 131 School by a Japanese expert.

**(b) Research on Current Situation of School DRR Education in Mongolia**

In order to identify the current situation of school DRR education in Mongolia, DRR education contents in each educational level were examined in the Course of Study for Pre-School, Primary School, and Secondary School in Mongolia. The major findings by the research were as follows.

- The contents of hazard phenomenon and disasters are sufficiently included in the higher education, and higher and lower secondary education. In the pre-school education and primary education, contents of hazard phenomenon and disasters are reasonably well included.
- The content on disasters derived from ecology is 48%. Most of them are reflected mainly in the subjects of geography and chemistry of basic education, higher education and secondary education
- Contents of natural disasters are included in the geography education programs.
- Contents of technology disasters are included in the chemistry educational program in connection with confirming the handling of chemical substances and the influence of toxic substances.
- The contents of social disasters are lacking in education programs, and biological disasters are not included in educational programs.
- In general, the purposes and objectives of the DRR education in the current education programs are not clear. Although DRR-related educational contents are individually included in some subjects such as geography and social studies, they are not systematically treated as DRR learning.
- Contents of personal safety education are included more in pre-school and primary education programs and education contents related to hazard phenomenon, accidents, disaster, and social safety are included more in lower and higher secondary education.

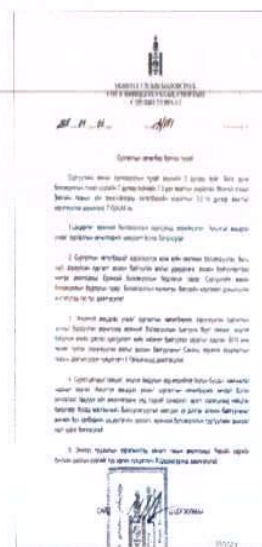
**(c) Development of the Draft Guideline for School DRR Education**

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Based on the studies of the reference documents and result of the research on the current school DRR education situation, title, composition, and purpose of the DRR education of each educational level was discussed and decided as follows.

- Title of the Guideline: “The Program for Life Safety Education”
- Type of the Document: Course of Study which will be approved by the Minister of Education and Vice Prime Minister.
- Contents: The education guideline for life safety as a whole, not merely covering natural disasters
- Composition of the Program: 1) Background, 2) Purpose, 3) Contents, and 4) Teaching Method

Based on the above outline, the draft Program was developed. After the initial technical comments in the Ministry of Education, Culture, Science and Sports (hereinafter referred to as “MECSS”) were collected in September 2017, a hearing meeting for taking technical comments and advice for the draft Program was organized on October 4<sup>th</sup>, 2017 by inviting professionals and experts in the relevant organizations for finalization of the document. After the counterpart training in Japan in November 2017, the draft was further improved by the counterparts based on the knowledge learned in the training and the comments sent by the relevant organizations in January and February 2018. After submitting the final draft to the MECSS in March 2018, the Program was modified based on the comments provided by the reviewers in the official approval process in MECSS. The Program was approved by MECSS on April 6<sup>th</sup>, 2018 as A181 Decree.



Source: JICA Expert Team  
**Figure II.1.13  
Approved Program**

The approved Program is composed by 1) Background, 2) Purpose, 3) Contents, 4) Teaching Method, 5) Educational Assessment, and Matrix of DRR Education Contents in the School Education Curriculum in each educational level. (Annex: The Program for Life Safety Education)

**Activity 3.1.2 To develop educational materials such as textbooks and supplementary readers for DRR education in kindergarten and primary and secondary schools**

**1) Collection and Review of the Existing Materials for DRR Education**

Prior to the development of the educational materials, the existing materials for DRR

education were collected and reviewed. Among them, the textbooks for the school DRR education were developed with the support of UNDP but still need improvement before they can be used in the school education nationwide. They were composed for teaching the DRR education contents as one subject and the contents and images of the textbook do not consider copyrights and were sometimes just copied from the Russian textbooks.

In addition to the above UNDP textbooks, there are some good materials which can be used in school DRR education, such as the children's educational materials for each disaster developed by World Vision Mongolia. However, no materials were systematically organized for school education based on each school grade and each subject. It was required to provide the materials and lesson guidebooks in a manner easily utilized by teachers according to their education plans.

## **2) Development of the Guidebook for the Program of Life Safety Education**

Considering the above situation, it was decided to develop a "Guidebook" for teachers' lessons as an annex of the "The Program of Life Safety Education". Through the several WG3-1 meetings, the composition of the "Guidebook" was decided as follows.

Foreword

1. Outline of "Life Safety Education"
2. "Life Safety Education" in the School Subjects
3. "Life Safety Education" in Other Educational Activities

Glossary

A list of Reference Materials

The draft ideas of the guidebook was compiled in some of the study workshops of WG3-1 and the trial lessons by Japanese experts, and draft development works were conducted separately by individual working group members from October 2018 to March 2019. The final draft from each member was edited in consideration of the total structure and compiled as guidebooks for pre-school education and primary and secondary school education from March to May 2019. The final draft submitted to the MECSS in May 2019 was modified and finalized based on the comments provided by the reviewers in the official process of the MECSS in July 2019 as shown in the table below.

**Table II.1.12 Contents of Guidebook (Primary and Secondary Schools)**

**Contents of the Teacher's Guidebook for Implementing the "Safety Life Skill" Program  
in Primary and Secondary Schools**



*The Project for Strengthening the National Capacity of  
Earthquake Disaster Protection and Prevention in Mongolia  
Project Completion Report*

<p><b>Foreword</b> The "Safety Life Skills" Program</p> <p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>◇ Rationale for Developing the "Safety Life Skills" Program</li> <li>◇ Contents of the "Safety Life Skills" Program</li> <li>◇ Structure of the Manual and Points to Consider</li> </ul> <p><b>Chapter 1: General Understanding of Disasters</b></p> <ul style="list-style-type: none"> <li>◇ Current Situation of Disasters</li> <li>◇ Disasters, Hazards and Vulnerabilities</li> <li>◇ Understanding Earthquakes</li> </ul> <p><b>Chapter 2: Outline of Lessons (Primary School)</b></p> <ul style="list-style-type: none"> <li>◇ Safety in the Social Environment: Learning the Cardinal Directions</li> <li>◇ Safety in the Social Environment: Climate Change</li> <li>◇ Natural Hazards: Developing a Model for an Earthquake-Resistant Building</li> <li>◇ Earthquakes</li> <li>◇ Fires</li> </ul> <p><b>Chapter 3: Outline of Lessons (Lower Secondary School)</b></p> <ul style="list-style-type: none"> <li>◇ Safety at Home: Protect Your Health from Water Contamination</li> <li>◇ Climate Hazards: "Let's Become Climatologists"</li> </ul>	<ul style="list-style-type: none"> <li>◇ Climate Change and Our Role in Mitigating It</li> <li>◇ Natural Hazards: Protecting Yourself and Others from Earthquakes Hazards / Preventing Lightning Hazards</li> </ul> <p><b>Chapter 4: Outline of Lessons (Upper Secondary School)</b></p> <ul style="list-style-type: none"> <li>◇ Natural Hazards: Developing a Preparedness Plan for Household Risks</li> <li>◇ Safety in the Social Environment: Preventing Cybercrime</li> </ul> <p><b>Chapter 5: Contents and Methodology of Activities to Support Training</b></p> <ul style="list-style-type: none"> <li>◇ Example Planning of School Activities</li> <li>◇ Objective of Extra-Curricular Activities</li> <li>◇ Primary School: Contents of Extra-Curricular Activities and their Methodological Reasoning</li> <li>◇ Middle School: Contents of Extra-Curricular Activities and their Methodological Reasoning</li> <li>◇ High School: Contents of Extra-Curricular Activities and their Methodological Reasoning</li> </ul> <p><b>Terminology Bibliography</b></p>
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Source: JICA Expert Team

**Table II.1.13 Contents of Guidebook (Pre-School Education)**

<b>Contents of the Teacher's Guidebook for Implementing the "Safety Life Skill" Program in Pre-School Education</b>
<p><b>Introduction</b></p> <ol style="list-style-type: none"> <li>1. Rationale for Developing the "Safety Life Skills" Program</li> <li>2. Contents of the "Safety Life Skills" Program</li> <li>3. Structure of the Manual and Points to Consider</li> </ol> <p><b>Chapter 1 General Understanding of Disasters</b></p> <ol style="list-style-type: none"> <li>1. Current Situation of Disasters</li> <li>2. Disasters, Hazards and Vulnerabilities</li> <li>3. Understanding Earthquakes</li> </ol> <p><b>Chapter 2 Including DRR activities in the Curricula of Kindergartens</b></p> <ol style="list-style-type: none"> <li>1) Relation Between the Pre-School Core Curriculum and the "Safety Life Skills" Program</li> <li>2) Examples of Implementing "Safety Life Skills" Program Activities through Daily School Activities</li> </ol> <p><b>Terminology Bibliography</b></p>

Source: JICA Expert Team

After the final editing works, the Guidebook was printed in October 2019 and distributed to the schools and kindergartens across the country in November 2019.

**Activity 3.1.3** To implement training programs for the instructors of Teacher Training Institutes and experts of educational departments in local governments, using the guideline and materials developed in 3.1.1 and 3.1.2 respectively.

**1) Implementation Plan of the Training Programs**

The implementation plan including the participants to be invited and location of the training course were discussed through the working group activities. In the discussion, the working group members decided to have a pre-workshop for trial implementation of the training for the officers of the Education Research Institute and Institute of the Teacher's Professional Development to confirm the program and methods of the training in advance of the training. Considering the other training schedule for the teachers and instructors in a year, it was decided to conduct the pre-workshop and the training programs for three educational levels as shown in the table below.

**Table II.1.14 Implementation Plan of the Training Programs**

	Pre-Workshop	Training (Batch 1)	Training (Batch 2)
Location	UB City	UB City	UB City
Date	11-13 September 2018	18-21 September 2018	8-11 October 2018
Target Participants	Officers of Education Research Institute and Institute of Teacher's Professional Development	Teacher's Instructors/ Educational Supervisors of Primary and Lower-Secondary Education	Teacher's Instructors/ Educational Supervisors of Pre-School Education
Number of Trainees	Total 50 persons	2 persons from Education Department of each provinces and districts (Total 60 persons)	1 persons from Education Department of each provinces and districts (Total 30 persons)

Source: JICA Expert Team

Further, just before the implementation of the pre-workshop, there was a request from the DPTMC for the participation of the instructors of the Center in the workshop. In consideration for the current situation that the Center is mainly providing education to the school children, the working group decided to accept ten instructors to join the workshop.

## 2) Pre-workshop for the training on "Life-Safety Education"

The pre-workshop was conducted on 11-13 September 2018 attended by 50 officers of Education Research Institute and Institute of Teacher's Professional Development and 10 instructors from DPTMC. Through the active involvement of the participants in the workshop, the contents of the training program on "Life Safety Education" were verified. Also, several important points for promoting "Life Safety Education" were identified and recommended. Major points were as follows.

- To take the "Life Safety Education" as one of the focused research themes of the teacher's professional development
- To promote close collaboration with relevant organizations, such as an emergency management department in each province and district for providing practical education.
- To prepare on-line training materials for "Life Safety Education"

- To create a specific website for the educational tools and materials for “Life Safety Education” for easy access for teachers and stakeholders
- To collect and share good practices of the lessons for “Life Safety Education”
  - To make the visit to DPTMC the regular education activities in the school
  - To promote collaboration with DPTMC for teacher’s training
- To confirm the regulations and rules of the school for the coordination of disaster management and DRR education in the school
- To prepare a brochure to introduce “Life Safety Education” to guardians and stakeholders

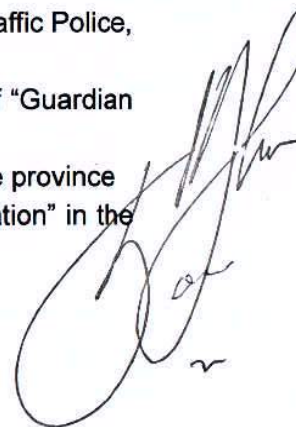
Further, with the participation of the instructors of DPTMC, as a result, the DRR experts and children’s education experts could build a close network through the training program which will help improving their future activities.

### **3) Training Program on “Life Safety Education” (Batch 1)**

The batch 1 of the Training Program on “Life-Safety Education” was held on 17-21 September 2018 with 57 teacher’s instructors/ educational supervisors for Primary and Lower-Secondary Education from Education Departments of 21 provinces and 9 districts.

Compared to the participants of the pre-workshop, the participants of the training had less experience with newly introduced education, integrated subjects as well as education with practical activities, such as arts and crafts and workshop-style discussion. Therefore, it took more time to gain understanding of the contents of “Life Safety Education” than expected. The working group member discussed in the course of the training, and slightly changed the program for taking more time for the explanation of the contents and giving trial lessons instead of their own planning and trial of the lessons. With the change, the participants had better understanding of the contents and could make their own plans for disseminating the “Life Safety Education” at their own provinces and districts at the end of the program. Some of the good ideas in the proposed plans were as follows.

- To form a team for promoting “Life Safety Education” composed by the principal, vice-principal, manager, social worker, teachers of Science and Health & Physical Education in each school
- To establish a “Safety Learning Room” with relevant information and educational tools and materials in the school
- To create close collaboration with Emergency Management Department, Traffic Police, and Red Cross, etc.
- To provide “Life Safety Education” to guardian utilizing the opportunities of “Guardian Day” or home visit
- To conduct a contest for good practices of the “Life Safety Education” in the province
- To propose to the Governor to include the promotion of “Life Safety Education” in the annual plan





Source: JICA Expert Team

**Figure II.1.14 Lectures and Workshops in the Training Program on “Life Safety Education” (Batch 1)**

#### **4) Training Program on “Life Safety Education” (Batch 2)**

The batch 2 of the Training Program on “Life-Safety Education” was held on 8-11 October 2018 with 30 teacher’s instructors / educational supervisors for Pre-School Education from Education Departments of 21 provinces and 9 districts.

With the experience learned in the batch 1 training, the training program was slightly changed in advance and included the observation of a lesson and facility of the No. 61 kindergarten in which the working group conducted trial lesson in May and had some good practices of the safety education through some other past projects and their own efforts. With these changes, the participants of the program had practical and concrete ideas for the safety and DRR education and conducted a good discussion during the training program. In the discussion of the workshop on the final day, the participants proposed the following points to promote the safety education in their own areas:

- To be aware of the relevant stakeholders including the executive officers of the Provinces about the Law of Disaster Management and ensure the 1% of total budget of the organization for DRR activities
- To provide safety education linking to the daily life
- To regularly conduct DRR drills in cooperation with the community.
- To try to announce and promote life safety education through mass media
- To get necessary cooperation from local government, NGOs, international organizations, and donors for solving the issues and challenges to conduct the life safety education in each kindergarten
- To promote the life safety education focusing on the point that the education should be provided in combining with the existing subjects and education activities
- To increase the staff members who understand the contents and methods of the life safety education.

The pre-school education is basically closely connected with life safety education. Therefore, all the participants seriously considered how they can effectively implement the

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education based on the guideline throughout the program.



Source: JICA Expert Team

**Figure II.1.15 Lectures and Workshops in the Training Program on “Life Safety Education” (Batch 2)**

### **5) Review of the Training Programs on “Life Safety Education”**

The working group 3-1 members had a review meeting of the training program on 12 October 2018

. The members proposed to take the following actions as follow-up activities of the training.

- To share the training materials through a mailing list of the Primary School Education Departments
- To recommend conducting meetings or training sessions for introducing the life safety education guideline by utilizing autumn school holidays and remaining budget of Year 2018.
- To incorporate the life safety education training (half-day or one day) into the regular training program, such as Orientation training, 5th-year training, and 10th-year training provided by Institute of Teacher’s Professional Development
- Make a desirable training program for the Province level training
- To conduct model activities in some selected kindergarten and schools

A questionnaire survey was conducted for evaluating the training programs on “Life Safety Education” for teacher’s instructors/ educational supervisors in September and October 2018. As shown in the figure below which compiles the result of the survey, most of the participants were satisfied with the overall contents, activities, and arrangements of the training. Further, about 80% of the participants described that the training contents were satisfactory, very timely and important. As for the most important points they learned through the training, they pointed out the following; importance of disaster preparedness, uncertainty of occurrence of disasters, how to save themselves, mutual cooperation in a disaster, integration life-safety education into existing subjects, understanding of “Life-safety Education” program, contents of “Be Ready” education kit, etc.



Source: JICA Expert Team

**Figure II.1.16 Result of Questionnaire Survey**

**Activity 3.1.4** To implement the training program for teachers by the instructors and experts who received the training programs mentioned in 3.1.3

On 27-28 December 2018, a training program on “Life-Safety Education” was conducted for the principals and teacher’s instructors of kindergartens in Bayanzurkh District with the support of EMDC, WG3-1 members, and Japanese Expert Team.

On 16 January 2019, the instructors who were trained in the Activity 3.1.3 conducted DRR training in the MECSS’s regular in-service training for teachers with 10-year of experience with the support of the Japanese Expert Team.

Further, the model school activities were conducted to give good examples for promoting DRR education in line with the “Life-Safety Education Program” in the No. 244 kindergarten, No.13 school, and No. 42 school as shown in the table below.

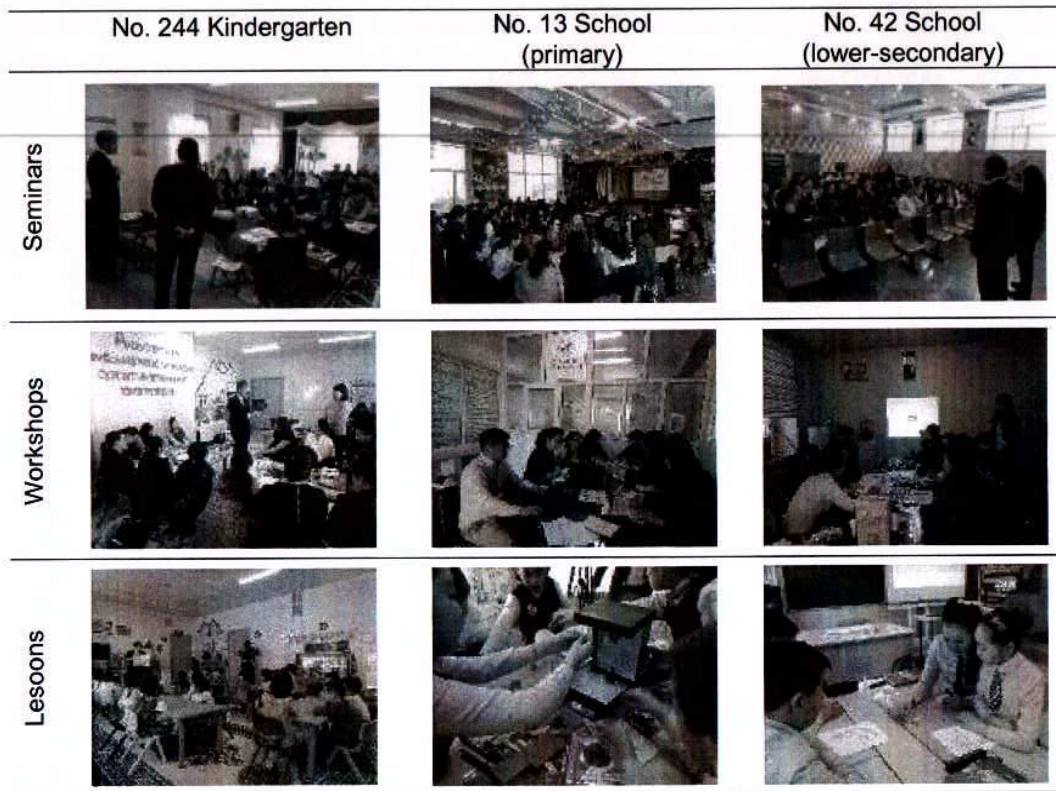
**Table II.1.15 Outline of Model School Activities**

<b>Purpose</b>	<ul style="list-style-type: none"> <li>◇ To give good examples for promoting DRR education in line with the “Life-Safety Education Program” in pre-school, primary and secondary education</li> <li>◇ To develop video program of the lessons which are conducted as a final result of model school activities for the annex of “Guidebook”</li> </ul>
<b>Participants</b>	Students, teachers and staff of the selected model schools, Staff of Education Department and EMDC of the respective district which the selected model schools are located, and WG3-1 members
<b>Duration</b>	5-19 March 2019
<b>Venue</b>	Selected Model Schools

*The Project for Strengthening the National Capacity of  
Earthquake Disaster Protection and Prevention in Mongolia  
Project Completion Report*

Main Activities, Date and Time (no. of participants)		No. 244 Kindergarten	No. 13 School (primary)	No. 42 School (lower-secondary)
	1) Seminar for Teachers and Staff	3/5 10:00~13:00 (43 persons)	3/7 10:10~13:10 (53 persons)	3/6 9:30~12:30 (38 persons)
2) Workshop 1 for model lessons	3/11 10:00~13:00 (14 persons)	3/12 10:15~13:10 (4 persons)	3/11 14:00~17:00 (5 persons)	
3) Workshop 2 for model lessons	3/13 14:00~17:00 (16 persons)	3/14 16:00~18:00 (4 persons)	3/13 10:00~13:00 (5 persons)	
4) Research Lessons of "Life-Safety Education"	3/15 9:30~10:30 (Evaluation meeting after the lesson) (13 persons)	3/19 10:15~11:40 (Evaluation meeting after the lesson) (4 persons)	3/18 12:20~14:00 (Evaluation meeting after the lesson) (8 persons)	

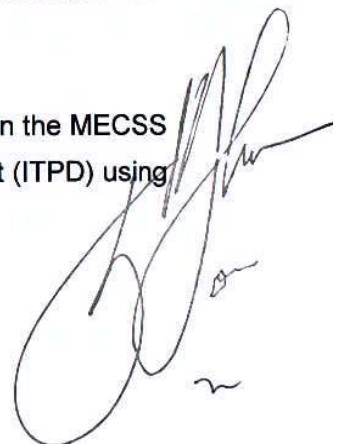
Source: JICA Expert Team



Source: JICA Expert Team

**Figure II.1.17 Model School Activities in Each Level**

The training program for "Life-Safety Education Program" will be conducted in the MECSS regular in-service training by Institute of Teacher's Professional Development (ITPD) using the developed "Guidebook" for the Program.



**Activity 3.2.1 To develop comprehensive work plan for disaster risk reduction education and raising awareness at national and local levels**

**1) Framework for the Comprehensive Work Plan**

**(a) Issues about coordination of DRR**

At the beginning of Activity 3.2.1, JET examined the current situation and issues for planning the DRR education and raising awareness and summarized in the WG 3-2 activities. Major issues for DRR education and awareness coordination are as follows.

- DRR education and training annual plans of the NEMA and the EMDC are individually developed. The plans are not updated in the course of implementation in a year.
- Donors' activities which provide a lot of assistance to the DRR education and training are not considered when making the plans in NEMA and EMDC.
- There is no coordination mechanism among donors regarding DRR education and awareness raising activities and material development, and some of the donors' activities overlap.
- Information of the DRR education and awareness activities are not published well.



Source: JICA Expert Team  
**Figure II.1.18 Regulation approved by NEMA Administrator**

In order to respond the above-mentioned issues, the following activities were proposed during the WG 3-2 meeting.

- i) Development of an institutional framework among stakeholders of the DRR education and awareness raising activities to regularly update the training schedule.
- ii) Development of a website which can be accessed by government organizations and donor agencies and manage the DRR education and training activities plans. The simple system and design of the website is to be developed in consideration of easy to update at any time of the year and ensuring sustainability.
- iii) Integration of the donor's activities in the annual plan
- iv) Development and operation of a mailing list with which government organizations and donor agencies can share the latest information

**2) Development and Activities of Comprehensive Training Schedule**

**(a) Operational system development**



The operational system for sustainable activities of the Comprehensive Work Plan was developed through WG3-2 activities, and was discussed in the meeting that the stakeholders relevant to the DRR education and awareness activities had been invited to. As a result of the discussions in the meeting, a “DRR Training and Raising Awareness Team” was established as a system led by the Disaster Prevention Department of NEMA and supported by the Policy Coordination and Cooperation Department of NEMA, with external support by World Vision Mongolia for the Comprehensive Training Schedule. The operational rules including purpose, composition and roles of the members of the Team were designated as shown in the Table II.1.16, and approved as a regulation by the NEMA Administrator.

After establishing the “DRR Training and Raising Awareness Team”, JET supported NEMA implementing regular meetings to build a culture of coordinating with related agencies to implement programs not by communicating with an agency one-by-one. Since May 2017, in total five meetings with SC has been held and various small meetings with limited number of members has been held.

**Table II.1.16 Purpose and SC Members Stipulated in the Regulation**

Regulation of DRR Training and Raising Awareness Team Activities	
<b>Purpose:</b>	To plan and implement DRR training and awareness activities in a comprehensive manner, and to improve coordination between the governmental, non-governmental and international organizations for effective implementation of the activities. To publish information on DRR training and awareness activities to the public.
<b>Steering Committee (SC) Members</b>	Chair: Director of Disaster Prevention Dept., NEMA Vice-chair: Humanitarian Emergency Management Dept., World Vision Mongolia Members: (Government organizations) <ul style="list-style-type: none"> <li>• Program Officer, Policy Coordination and Cooperation Dept., NEMA</li> <li>• Deputy Director and Senior Officer of Disaster Prevention Div., EMDC</li> <li>• Officer of the Lifelong Education Policy Planning and Coordination, Education Policy Div., MECSS</li> <li>• Senior Researcher, IAG</li> <li>• Lecturer, DRR Training Center, EMDC</li> </ul> (Non-government organizations) <ul style="list-style-type: none"> <li>• Staff of UNDP</li> <li>• Officer of DRR Program, MRCS</li> <li>• Staff of Save the Children Japan</li> </ul>

Source: JICA Expert Team

**(b) Development of Website for the Comprehensive Training Schedule**

Information to be shared for the Comprehensive Training Schedule was discussed in detail with the references to the cases in Myanmar and Nepal. As a result of the discussion, the WG concluded that the major necessary information regarding the activities, such as

“When (date)”, “Who (organizers)”, “Where (place)” and “What kind of activities” at a glance was designed. Also, the data entry system was developed in consideration of easy input of data by each stakeholder.

Website development was completed in January 2019 with the creation of a manual<sup>1</sup>. On 31 January, a meeting to explain the system was conducted for the persons concerned in the NEMA. Twenty-one (21) people from NEMA, EMDC, UNDP, Save the Children, World Vision, Mongolian Red Cross, and other donor organizations were attended the meeting. Further on-line briefing session was provided for the fifty-seven (57) people in charge in 21 NEMA district offices.

The website (<http://4w.ontsgoisur.gov.mn/>) started trial operation from 1 February 2019 and was modified and improved based on the comments and opinions by the users by the end of April 2019. No major modifications were proposed.



Top Page of the Website for the DRR training schedule



Meeting to explain the website system



On-line briefing to district offices

**Figure II.1.19 Developed Website and Trainings**

### (c) Mailing List for the Team

A mailing list ([mdptteam@googlegroups.com](mailto:mdptteam@googlegroups.com)) for the DRR Training and Raising Awareness Team had been effectively used for schedule sharing and coordination. At the beginning, only NEMA was posting the information related to the training and meetings, yet the Project promoted other member agencies to post the information that is valuable for sharing with other members including request for collaboration to DRR related events organized by NEMA.

### Activity 3.2.2 To develop materials for the training on disaster risk reduction education and

<sup>1</sup> Refer to <http://ontsgoisur.gov.mn/pages/taylan-4w-programm-khangamzhiyn-taniltsuulga-garyn-avлага>



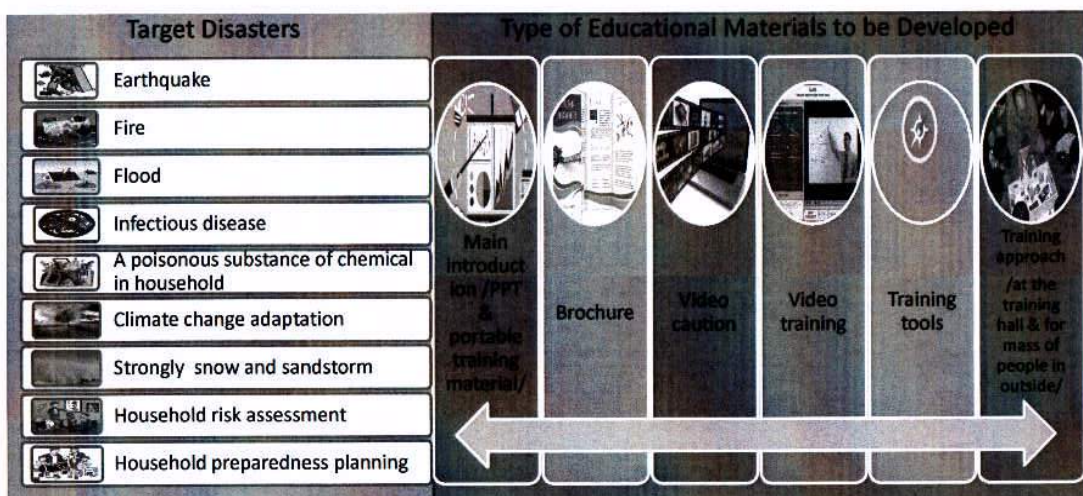
raising awareness, and implement the training for the target groups in pilot areas

**1) Development of the DRR Training Materials for the Community**

Prior to starting development work for the new educational materials, the existing DRR education materials for the community were collected and listed. (Refer to Activity 3.1.2).

Among the collected materials, a series of the textbooks and curriculum developed by UNDP for the DRR education to “Residents”, “Volunteers”, and “Employees of Companies and Organizations” were approved by the NEMA Administrator Regulation. The Project team reviewed the textbooks and curriculum for “Residents” in detail, since DRR education and awareness activities by NEMA and relevant organizations are conducted based on the Regulation. As a result, it was identified that the textbooks have very detailed explanations for the DRR education and training contents, however, more easy-to-understand educational materials are required for the community training program.

The activities of component 3 (called “Be Ready!”) of the “Disaster Resilient Ulaanbaatar Project” conducted by the World Vision Mongolia with help from NEMA included the development of a set of DRR training materials and implementation of DRR awareness activities for the community. The Project team learned that the development of the educational material for the “Be Ready!” segment was also planned for the preparing of easy-to-understand additional educational materials for conducting the DRR educational activities under the UNDP curriculum approved by the NEMA Administrator Regulation, which is similar to the Project. After the identification of the similarity, the Disaster Prevention Department of NEMA requested the collaboration of the two Project activities so as to develop one package of educational materials as a standard for DRR training and education.



Source: JICA Expert Team

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**Figure II.1.20 Target Disasters and Type of Educational Materials to be developed  
by the “Be Ready!” Project**

In view of the circumstances, the Project team studied and sorted out the proposed outputs of the “Be Ready!” (Refer to the Table II.1.17), so as to avoid duplication of the activities to be conducted in the Project. The development of the educational materials in the Project will be pursued in coordination with the activities of “Be Ready!”

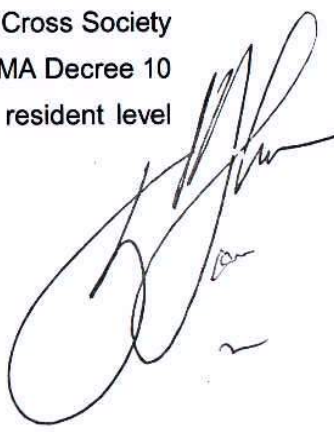
NEMA, the JET and World Vision held a coordination meeting in August 2017 and decided to work on the material development under the leadership of NEMA. After extensive coordination with the World Vision Mongolia related to the activities of component 3 (called “Be Ready!”) of the “Disaster Resilient Ulaanbaatar Project” throughout the period and the WG3-2 activities, including a 2-day workshop in February 2018, meetings in February and March 2018, and individual work, the draft DRR training materials and tools in the Project were prepared in March 2018.

**Table II.1.17 Demarcation between JET and Stakeholders for Developing  
Educational Material**

No	Topic	Organization in charge
1	Understanding hazard, accident, disaster, disaster risk	JICA Project
2	Assuring HH disaster response, disaster risk reduction by disaster	World Vision (Be Ready) Except for EQ and HH
3	Search and Rescue, First Aid	MRCS
4	Participation of community DRR activities	JICA Project

Source: JICA Expert Team

The Project conducted an intensive workshop for educational material development in February 2018 to determine the contents that JICA Project developed considering the existing “Be Ready!” material and Chief of NEMA Decree. C/P members concluded that the Project should cover practical training as a supplement of “Be Ready!” which is mainly composed of lectures. C/P members also appreciated Japanese experience-based training programs during the Counterpart Training Program in Japan. Therefore, C/P members concluded the demarcation between JICA, World Vision, and Mongolia Red Cross Society (MRCS) as shown in the table below. The timeframe follows the Chief of NEMA Decree 10 May 2016 A/130 that prescribes the DRR Awareness raising activities at resident level based on the Amended Law of Disaster Protection.

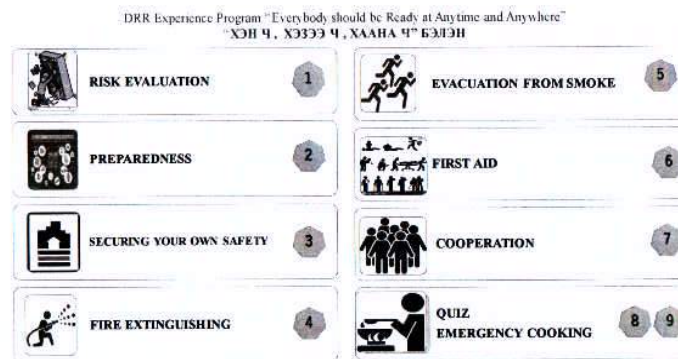

  
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**Table II.1.18 Demarcation between JET and Stakeholders for Developing Educational Material**

No	Items	Organization in charge
1	Understanding hazard, accident, disaster, disaster risk 【Lecture 1 hour】	World vision JICA Expert Team (Technical assistance for Earthquake's lecture )
2	Understanding hazard, accident, disaster, disaster risk 【Practical Training 1 hour】	World Vision JICA Expert Team
3	Assuring HH disaster response, disaster risk reduction by disaster 【Practical Training 5 hour】	JICA Expert Team
4	Search and Rescue, First Aid 【Lecture 1 hour】	MRCS
5	Search and Rescue, First Aid 【Practical Training 1 hour】	MRCS JICA Expert Team
6	Participation of community DRR activities 【Lecture 1 hour】	World Vision

Source: JICA Expert Team

The training was named as “DRR Experience Program – Everybody be ready at anytime and anywhere-” composed of practical training that reaffirms what the trainees learned in the “Be Ready!” program.



Source: JICA Expert Team

**Figure II.1.21 Contents of the Training Program**

Based on the review of ToT and the workshops as well as the event in the school, WG3-2 revised and finalized the Instructor’s Manual “DRR Experience Program – Everybody be ready at anytime and anywhere-” for wide dissemination of the activities in Mongolia. Contents of the Instructor’s Manual includes the step-by-step process and items to prepare for each training session and a DVD that includes Power Point lecture files used for explaining the program and short movie that summarizes each training program. The soft

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copy of the Instructor's Manual and short movie are also available on the website<sup>2</sup> so that everyone can download the contents.

The JET printed out the Instructor's Manual and distributed to nine districts in UB city and all aimags to promote implementing the program. In addition, NEMA obtained funding from MRCS to print out additional 1,000 copies for MRCS volunteers to implement the training. The soft copies of the manuals are also available on the NEMA website so that everyone can download the contents.

The training equipment used in the TOT and community workshops is stored in EMDC office and rent for those who are interested in conducting the training program.

## **2) Selection of the Pilot Areas for Community DRR Training and Education**

The selection of the pilot areas for the community DRR training and education in the Project was discussed in the WG3-2 meeting. As selection criteria, risks of deteriorated buildings for urban areas, and disaster risks other than earthquakes, such as flooding, for the Ger area, and earthquake risks for rural areas were proposed. As a result, the areas in the Table II.1.19 were proposed in the JCC held in June 2017. The final decision of the pilot areas was made in the Steering Committee held in the end of September after the detailed discussions and studies with the relevant persons. Bayngol District, Bayanzurkh District, and Zavkhn Aimag were selected. The selection of the pilot areas, i.e., Bayngol District and Bayanzurkh District in UB City, and Zavkhan Aimag, was confirmed in the SC meeting held in March 2018 and the JCC meeting in April 2018.

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<sup>2</sup> <http://ontsgoisur.gov.mn/pages/khen-ch-khezee-ch-khaana-ch-belen>



**Table II.1.19 Proposed Pilot Areas for Community DRR Training**

	Proposed Area	Location	Reasons for Selection	
1	UB city (center)	Bayangol district	Central Western Part of UB	District with both new and old residential areas , and tall buildings
		<u>Additional option:</u> Khan-Uul district	South Western Part of UB	High flood risk areas with soft soil
2	UB city (ger areas)	Bayanzurkh district	Central Eastern Part of UB	Highly dense ger areas.
		<u>Additional option:</u> Songinokhairkhan district	Western Part of UB	Same as above
3	Rural areas	Zavkhan aimag		High probability of earthquakes less duplication with other donors' activities
		<u>Additional options:</u> Khuvsgul aimag Erdenet (Orkhon aimag)		

Source: JICA Expert Team

### 3) Implementation of the Training for Trainers

The workshops for the ToT were conducted on 21 March 2018 in UB City and on 26 March 2018 in Zavkhan Aimag combined with the “Be Ready” training program organized by the World Vision Mongolia and MRCS. Total 75 participants including the DRR Volunteer Team members, and staff members of the local governments and the lifelong learning centers in the target Aimags and Soums attended the workshops.

After the ToT workshops, the materials used in the training were compiled with detailed instruction points, information for preparation of “DRR Experience Program”, and reference data as a draft guidebook for instructors.



Source: JICA Expert Team

**Figure II.1.22 Trainings for Trainers in the Pilot Areas**

### 4) Implementation of the Workshop for DRR Awareness Raising

The workshops for DRR Awareness Raising in Zabkhan Aimag were successfully conducted on 12 May 2018 in Otgon Soum and on 14 May 2018 in Uliastai Soum. Also the workshops in the pilot area in UB City were conducted on 17 May 2018 in Bayangol District and on 20 May 2018 in Bayanzurkh District with great success. Each workshop was mainly coordinated by the instructors trained in the TOT workshop in March 2018 using the draft guidebook for instructors. Approximately 50 local residents of each workshop were trained in consideration of community characteristics of disasters.



Source: JICA Expert Team

**Figure II.1.23 Workshops for DRR Awareness Raising in the Pilot Areas**

Besides, on 20 March 2018, prior to the TOT, based on the request from NEMA, WG3-2 provided support to conduct the “DRR Experience Program” in the 87 schools of the Bayanzurkh District utilizing the materials and tools prepared for the Project activities as one of the events for the Earthquake Awareness Day in Mongolia.

**5) Expansion to Other Regions**

After implementing the workshops at the community level, JET printed out the Instructor’s Manual and distributed it to nine districts in UB City and all aimags to promote implementing the program. In addition, NEMA obtained funding from MRCS to print out an additional 1,000 copies for MRCS volunteers to implement the training.

The training equipment used in the TOT and community workshops is currently stored in the EMDC office and available for rent for those who are interested in conducting the training program. EMDC Bayangol District voluntary conducted the program after the ToT training by utilizing the equipment. As for purchasing the training equipment, some of EMDC and emergency management offices requested the district government to secure the budget to purchase the items used in the workshop.

After the implementation of the TOT and community workshop, in order for the 21 aimags and 9 districts to implement the pilot activities, NEMA and MRCS jointly implemented competition among EMAs.



In addition, in order to institutionalize the pilot activities, the Director of Disaster Prevention Department Mr. Batsaikhan issued a letter to each EMA on April 5th, 2018 (11/ No.717 Letter). The letter was an instruction to prepare the educational material that was created by the pilot project funded by Disaster Risk Reduction fund from each municipality and implement DRR awareness raising by May 1st, 2018. NEMA would send the information on how to prepare educational material.

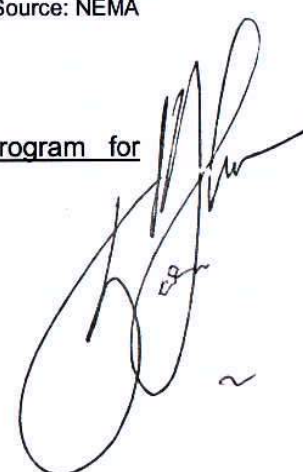
The period of competition was until December 2018 and the result of each EMA and the result of the training from the 1st to 3rd phase of 2019 are shown in the table below.

**Table II.1.20 Record of Training and Development of Equipment**

№	Aimags /District EMA name	As of end of 2018		From January 2019 to end of the 3rd quarter		
		Training number	Participants number	Training number	Participants number	Training package
1	Arkhangai	25	1,279	11	1,717	1
2	Bayankhongor	6	500	1	12	1
3	Bayan-Ulgii	6	900	8	511	1
4	Bulgan	4	58	12	58	1
5	Gobi-Altai	5	450	6	9,484	1
6	Gobisumber	57	5,878	4	247	1
7	Darkhan-Uul	78	4,838	17	1,341	1
8	Domogobi	80	6,200	16	1,707	1
9	Domod	6	378	18	906	1
10	Dundgobi	45	606	12	900	1
11	Zavkhan	6	1,076	32	10,011	1
12	Orkhon	10	341	27	929	1
13	Umnugobi	43	1,543	4	104	1
14	Uvurkhangai	3	230	28	7,639	1
15	Sukhbaatar	15	1,350	38	1,174	1
16	Selenge	4	1,200	27	1,729	5
17	Tuv	1	40	33	1,142	1
18	Uvs	5	306	2	223	1
19	Khovd	8	756	23	2,376	1
20	Khuvsgul	6	756	6	347	1
21	Khentii	10	570	12	3,360	1
22	Ulaanbaatar	100	6,347	229	27,466	9
	<b>Total</b>	<b>523</b>	<b>35,602</b>	<b>566</b>	<b>73,383</b>	<b>34</b>

Source: NEMA

**Activity 3.2.3 To develop and implement educational and training program for implementing disaster prevention and simulation program in DPTMC**


  
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As a first activity, the current situation of the operation of the education program and equipment installed in DPTMC was reviewed. DPTMC officially launched the training activities in October 2016 and had conducted many training programs, with the training equipment provided from China and Korea, such as an earthquake simulation shaking table and a vehicle with DRR experience devices.



Source: JICA Expert Team

**Figure II.1.24 Observation  
of the Program of DPTMC**

Through the WG3-2 activities including the observation of the current training program in the Center, the current situation and issues of the Center were discussed. The major issues raised in the discussion were as follows.

- Only a part of the Program officially prepared for DPTMC in October 2016 is implemented due to the lack of educational materials, etc.
- Mainly school student groups are the current target of the training, although the schools without school buses have difficulty to visit DPTMC.
- More exhibits which school children can directly experience are required.
- The movie used in the earthquake simulation shaking table, which starts with an earthquake early warning alert should be improved. There is no early warning service for earthquake at this moment and usually most of earthquakes occur without any previous warning.
- Consideration of the use of volunteers for the operation of DPTMC so as to provide more training programs, is a proposal from the practice learned in the training in Japan.

Based on the above identified issues, discussions on the improvement of the Program were held in May and June 2017. After the introduction of the training programs and basic plans of some DRR training centers in Japan, the Program was revised with the view to incorporate the importance of experiences into the purpose of the Program as a whole. Also, the other Japanese ideas for the educational contents, such as the catch phrase "Don't push, don't run, don't speak, and don't return (O-Ha-Shi-Mo) for the experience program for evacuation from smoke, were taken as good examples for learning which children can easily remember.

After the training in Japan in November 2017, WG3-2 discussed the improvement of the exhibition of DPTMC based on the learning in Japan through several meetings and the 2-day workshop held in February 2018. Also, the members made coordination with the World Vision Mongolia which has a plan to support DPTMC's activities for avoiding

duplication. As a result, the members decided to develop the following items for the improvement of the exhibits in DPTMC for the Project activities.

- i) Posters/Panels for the Earthquake Experience Room
- ii) Miniature Building Models for learning Seismic Resistant Structure (Brick and Wall Precast Concrete structure)
- iii) Educational Material for Kids' Room

**1) Posters/Panels for the Earthquake Experience Room**

WG3-2 appointed one of the instructors of the DPTMC as a person in charge of the panel development. After the discussion in the several meetings in September 2018, the panels to be developed were decided as follows.

**Table II.1.21 Contents of the Panels**

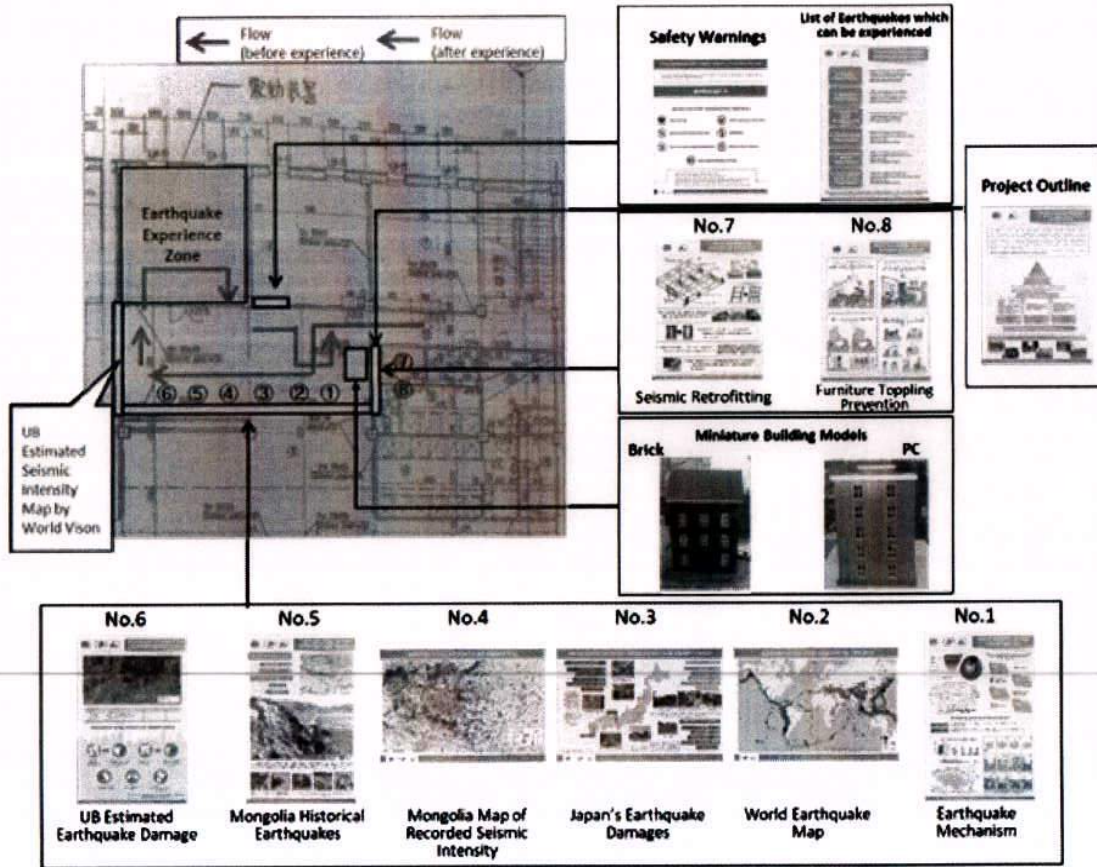
1) Basic Precautions for the Experience of Shaking Table	7) Basic Information of Earthquake in Mongolia (Active Faults, Observation Data, etc.)
2) Basic Mechanism of Earthquake	8) Basic Information of Past Earthquakes in Mongolia
3) World Earthquake Map	9) Earthquake Risks in Mongolia (simulation data, pictures of 1988 Spitak Earthquake, etc.)
4) Basic Information of the Great Hanshin-Awaji Earthquake	10) Earthquake Preparedness: Prevention of Furniture Toppling
5) Basic Information of the Kumamoto Earthquake	11) Earthquake Retrofitting of Buildings
6) Basic Information of the Niigata Chuetsu Earthquake	*4)-6) for as information of shakes of the Shaking Table

Source: JICA Expert Team

JET provided technical advices, information, materials and data for the panel development through some meetings in September, October, and November 2018. Also, the coordination for the data to be used in the panels was made with IAG (Institute of Astronomy and Geophysics) and other relevant activities in October and November 2018.

The panel development was completed in March 2019 and all the panels were exhibited together with the miniature building models for learning seismic retrofitting in the earthquake experience room of the DPTMC as shown in the image below.


  
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Source: JICA Expert Team

**Figure II.1.25 Layout of Panels and Models Installed in the Earthquake Experience Room**

Further, the model to learn the relation of scale of Magnitude and its energy was developed and installed in the earthquake experience room.



Source: JICA Expert Team

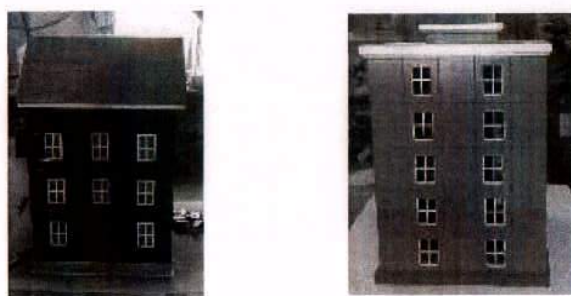
**Figure II.1.26 Panels and Models Installed in the Earthquake Experience Room**

**2) Miniature Building Models for Learning Seismic Resistant Structure (Brick and PC Structures)**

WG3-2 appointed one of the instructors of DPTMC as a person in charge of the development of miniature building models. On 3 May 2018, a mini workshop was

conducted for the development of the miniature building model with the support of JET of WG2. Further, several meetings were conducted for providing technical advices to develop the models throughout the period from June to November 2018.

After structure design and images were developed by the working group team members, the models were developed with the help of a furniture worker in Mongolia as shown in the pictures below.



Source: JICA Expert Team

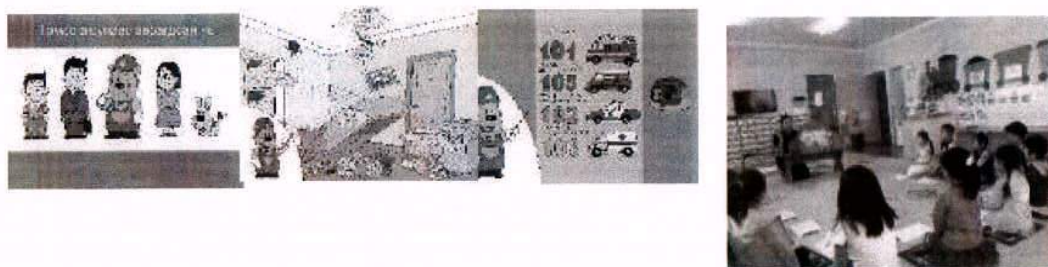
**Figure II.1.27 Miniature Building Models (Left: Brick Structure/ Right: PC Structure)**

### **3) Educational Material: Paper-Story Telling for Kids' Room**

One of the instructors of DPTMC was appointed as a person in charge of the development of the Kids' Room Educational materials. She attended the training program for instructors targeted Pre-school Education and enhanced the understanding of education materials for kids. Through further discussion in the WG3-2 meeting, the materials to be developed were decided.

As the Kids' Room educational material, a picture-story show (Kamishibai) for learning earthquake DRR was developed after discussion among working group members and coordination with the World Vision's relevant activities. On 24 April 2019, using the developed picture-story show, a lesson for kindergarten pupils were conducted as a launching of the material. Beside the picture-story show with frame which was installed in the DPTMC, the printed materials were distributed to NEMA, EMDC, MECSS, Education Research Institute, ITPD, and the model schools of the WG3.1 activities.

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Developed picture-story show for learning earthquake DRR

Lesson used the picture-story show

Source: JICA Expert Team

**Figure II.1.28 Picture-Story Show for Kid's Room**

## II.2 Achievements of the Project

### II.2.1 Outputs and indicators

#### (1) Output1

The following three indicators are applied to evaluate the achievement of the Output 1 based on the PDM.

##### 1.1 The number of guidelines, operational rules, provisions which are developed.

As described in Activity 1.1.1, three (3) kinds of GLs were decided to be developed in Output 1 namely, the "Earthquake Disaster Risk Assessment GL", "Earthquake Disaster Protection Planning GL", and "Disaster Database GL". In the category of "Earthquake Disaster Protection Planning GL", three (3) administrative levels of GLs were decided to be developed, namely "National Level", "State Service Level", "Regional Level".. Thus, finally five (5) GLs were developed as shown below.

- ✓ Earthquake Disaster Risk Assessment GL
- ✓ National Earthquake Disaster Protection Planning GL
- ✓ State Earthquake Disaster Protection Service Planning GL
- ✓ Regional Level Earthquake Disaster Protection Planning GL
- ✓ GL on Operation and Management of Spatial Information System for Disaster Risk Reduction

The WG1 also developed the following documents as an appendix for the GLs.

- ✓ Technical GL for Earthquake Risk Assessment
- ✓ Operation Manual on Earthquake Risk Assessment Software

✓ Manual for Earthquake Disaster Risk Reduction Planning

A total of eight (8) GLs and manuals are developed by WG1. Therefore, it is concluded that the achievement is high.

1.2 The number of the drafts of agreements developed and participants who participated in the programs on agreements

The number of the drafts of the agreements developed by the WG1 is nine (9). At the beginning of the Project, it was considered to be four (4) cases. Thus, the number of the draft agreement shows a high degree of achievement.

For the training program, a total of 38 people from the Ministry of Health, National Hospital, Private hospital association, Pharmaceutical association, Ministry of Food and Agriculture, Ministry of Construction and Urban Development, Ministry of Road and Transportation Development, Mineral Resource and Petroleum Agency, Communication and Information Technology Agency, NEMA and EMDC participated to the training. Of the 50 invitees, 38 actually attended. Although the number of participants is not large, the participants' organization contributed the promotion of conclusion of agreement with NEMA.

From these viewpoints, it can be said that the achievement rate is high.

1.3 White paper on disaster risk reduction

"Mongolia Disaster Risk Reduction White Paper 2017" in both Mongolian and English was published with 300 copies in December 2018.

Prior to this, for the AMCDRR held in July 2018 at UB City, summary of the 2017 White Paper in English was edited by WG1. One thousand copies of the summary were printed and distributed to the participants of the Conference.

"Creation Manual of the Disaster Risk Reduction White Paper" was also developed by WG1.

Although the 2018 version of the Paper has not been published yet, WG1 completed the contents of the Paper and the composition of the Paper was approved at the executive meeting in October 2019. Currently, editing work is in progress at the Disaster Prevention Department. It is expected that the Paper will be published in December 2019.

**(2) Output2**

The following two indicators were applied to evaluate the achievement of the Output 2

based on the PDM.

2.1 Guideline for seismic assessment: The number of the participants in the training program on seismic assessment

After obtaining the approval on the draft GLs by STC of MCUD, WG2 conducted a training course of seismic evaluation for buildings on June 4<sup>th</sup> to 6<sup>th</sup>, 2018, and one for infrastructures and lifeline structures on June 7<sup>th</sup>, 2018. For the former, 110 trainees including inspectors from GASI participated. For the latter, 70 trainees which were also beyond the estimate participated.

In addition to the planned training course above, a training course on seismic evaluation was held in Erdenet on September 8<sup>th</sup>, 2018 in response to MACE's request. Twenty-three (23) engineers in Erdenet attended it. It is noted that collaboration with MACE will be one of practical way to disseminate the technology on seismic evaluation and seismic strengthening, since the MACE's program can make attendees motivated to participate by giving them "points" needed to be a registered engineer.

On November 12<sup>th</sup> to 13<sup>th</sup>, 2018, the training course on non-destructive inspection equipment for seismic evaluation was conducted, in which 64 trainees participated.

After the publication of guidelines, TOTs started to disseminate the technology as mentioned before, in which 53 officers participated. Also 68 engineers from private companies participated in the training program for seismic evaluation supported by MACE, to which WG2 contributed.


The total number of participants is considerably beyond the estimate. So it is concluded the achievement is high.

2.2 Guideline for seismic strengthening: The number of the training program on seismic strengthening

Since the training program for seismic strengthening contains RC, PC and masonry buildings, it became unnecessary to prepare several programs. On May 1<sup>st</sup> to 3<sup>rd</sup>, 2019, the planned training course on seismic strengthening was conducted, in which 65 trainees participated.

It is noted that the number of participants was beyond the estimate and the achievement is high.

**(3) Output3**

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The following two indicators are applied to evaluate the achievement of the Output 3 based on the PDM.

3.1 The number of the cases of delivering classes on disaster risk reduction based on the activities of the Project

Due to the delay of the editing work, the WG3 developed the Guidebook for teachers to implement “Life-Safety Education” Program with the reference DVDs in October 2019 which was printed and distributed to the schools in November 2019. Full-fledged implementation of the Program at schools will be started from second semester of 2019 school year. Therefore, at this moment, it is difficult to evaluate the number of the cases of delivering classes on DRR based on the activities of the Project. Since the implementation of the “Life-Safety Education” is the responsibilities of each school under the approved Decree, it would be conducted in all schools. Further, another Decree to support the implementation of the “Life-Safety Education” is under preparation which includes descriptions on necessary measures for enabling environment, budget preparation, coordination with relevant stakeholders, and capacity development for teachers. This will ensure the delivering of classes on DRR.

3.2 The number of visitors in DPTMC

The WG3 developed educational materials in March 2019 and improved the training program for DPTMC in line with the “Life-Safety Education” Program for DRR education and raising awareness. The program was approved in July 2019 by Decree of EMDC Director.

After the handing over ceremony of the equipment of earthquake simulation experience conducted at the Earthquake Experience Room of DPTMC on 20 March 2019, the equipment and all exhibitions including explanatory materials of earthquake mechanism and the miniature building models for learning seismic retrofitting have been made available for the training program for implementing earthquake disaster prevention.

As of 17 September 2019, the number of visitors to DPTMC who participated in the training program for implementing earthquake disaster prevention from opening at the Earthquake Experience Room was about 16,820 persons collectively. The breakdown of visitors' number is shown in below.

**Table II.2.1 Number of visitors to DPTMC**

Group of Visitors	Number of Visitors
	From March 23 to September 17, 2019

59

*The Project for Strengthening the National Capacity of  
Earthquake Disaster Protection and Prevention in Mongolia  
Project Completion Report*

Public Service	4,008
Private Firm	5,054
Residents	4,372
School Students including Kindergarten, Primary, Lower-Secondary, higher-Secondary	9,041
University & College Students	1,835
Teachers	427
<b>Total</b>	<b>24,737</b>

Source: DPTMC

**(4) Indicators**

The project output indicators are summarized in Table II.2.2.

**Table II.2.2 Project Output and Indicator**

Outputs	Objectively Verifiable Indicator	Achieved Value	
1. Capacity for data collection on disaster risk reduction and coordination among related organizations will be enhanced.	1.1 To improve frameworks for disaster risk reduction by reflecting the Amended Law of Disaster Protection	<ul style="list-style-type: none"> <li>· Guideline(GL) on Earthquake Disaster Risk Assessment</li> <li>· GLs on Earthquake Disaster Protection Planning ( 3 GLs for "National", "State", "Regional")</li> <li>· GL on Operation and Management of Spatial Information System for Disaster Risk Reduction</li> <li>· Manual to Support Earthquake Disaster Protection Planning</li> <li>· Manual to Support Conclusion of Agreements on DRR</li> <li>· Manual to Support development of White Paper for DRR</li> </ul>	<ul style="list-style-type: none"> <li>· The number of guidelines, operational rules, and provisions which are developed. 8 / 8 (developed) (5 GLs of 8 GLs were approved.)</li> </ul>
	1.2 To strengthen cooperation among related organizations for disaster risk reduction	<ul style="list-style-type: none"> <li>· Agreements on cooperation among governmental agencies and related organizations for DRR actions ( 9 agreements planned to be developed)</li> <li>· Agreements on spatial database exchange among the DRR related organizations ( 2 agreements planned to be developed)</li> </ul>	<ul style="list-style-type: none"> <li>· The number of the draft of agreements developed 11 / 11 (developed) (9 agreements have already been signed officially.)</li> <li>· The number of participants who participated in the training programs on agreements : 38 trainees (Apr. 8, 2018)</li> </ul>
	1.3 To improve monitoring and information gathering methods for national and local disaster protection plans	<ul style="list-style-type: none"> <li>· Earthquake Disaster Protection Plans in pilot aimags and Districts (2 aimags and 2 Districts in UB city)</li> <li>· White Paper for DRR in 2017, 2018</li> <li>· Spatial Information System for Disaster Risk Reduction including Disaster Spatial Database</li> </ul>	<ul style="list-style-type: none"> <li>· Pilot Activity for local earthquake disaster protection planning in the pilot area(2 aimags, 2 districts of UB City)</li> <li>· White Paper for Disaster Risk Reduction 1 (approved) / 2 (developed)</li> </ul>
2. Capacity of public	2.1 To establish seismic	<ul style="list-style-type: none"> <li>· GLs on Seismic</li> <li>· Guideline for seismic</li> </ul>	

*The Project for Strengthening the National Capacity of  
Earthquake Disaster Protection and Prevention in Mongolia  
Project Completion Report*

administration officer related with the seismic assessment and seismic strengthening for buildings will be enhanced.	assessment methods for buildings, infrastructures and lifelines in the country, and to implement training program on seismic assessment	Evaluation of Buildings ( 3 GLs : RC, PC and Masonry) ·GL on Seismic Evaluation on Infrastructures and lifelines · Manual to Support Training Program Implementation	assessment 4 (approved) / 4 (developed) · The number of the participants in the training program on seismic assessment · Seismic evaluation 180 trainees (Jun. 4-7, 2018, Hosted by Project) 247 trainees (Hosted by others, including TOT and MACE's program) · How to use equipment for seismic evaluation 64 Trainees (Nov. 12-13, 2018, Hosted by Project)
	2.2 To develop seismic strengthening guidelines for buildings in the country, and to implement training program on seismic strengthening	· GLs on Seismic Strengthening of Buildings ( 3 GLs : RC, PC and Masonry) · Trial Designs of Rebuilding and Strengthening Construction ( 5 kinds of buildings) · Manual to Support Training Program Implementation	· Guideline for seismic strengthening 3(approved) / 3 (planned to be developed) · The number of training programs on seismic strengthening : · The number of training programs on seismic strengthening : 65 participants (May. 1-3, 2019, Hosted by Project) 42 participants (Hosted by others, including TOT and MACE's program)
3. Implementation plan on disaster risk reduction education and awareness raising activities will be developed and realized.	3.1 To develop a guideline for disaster risk reduction education and educational materials in kindergartens and schools, and to implement training program for instructors and teachers	· GL titled "The Program for Life Safety Education" · Guidebook for teachers to implement lessons based on the GL "The Program of Life Safety Education"	· The number of the cases of delivering classes on disaster risk reduction based on the activities of the Project: Classes on DRR education will be delivered from the second semester of the 2019 school year.
	3.2 To develop materials for disaster risk reduction education and raising awareness, and to implement training program for target groups and residents	· DRR Training Materials for the Community · Disaster Prevention and Simulation Program with related Materials in the DPTMC · Webpage for sharing the DRR training schedule	· The number of visitors in DPTMC: Total 24,737 (9,041 students and 15,696 citizens visitors from 23 Mar. to 17 September 2019 (16,820 persons for the Earthquake Experience Room)

Source: JICA Expert Team

### II.2.2 Project Purpose and indicators

The "The Capacity of the National Emergency Management Agency will be enhanced through the activities for strengthening the countermeasures for seismic risk" were achieved based on the assessment of objectively verifiable indicators that revised in the 8th JCC held on June 5, 2019. The achievements of the Project Purpose are summarized in Table II.2.3.

*The Project for Strengthening the National Capacity of Earthquake Disaster Protection and Prevention in Mongolia  
Project Completion Report*

**Table II.2.3 Project Purpose Output and Indicator**

Project Purpose	Objectively Verifiable Indicator	Achieved Value
The Capacity of the National Emergency Management Agency will be enhanced through the activities for strengthening the countermeasures for seismic risk.	The number of the approved guidelines, rules, and provisions/  The number of the Earthquake Disaster Protection Plans formulated or revised based on the guidelines developed through the activity in the Project	OUPUT 1 Activity: 8 (approved) / 9 (developed) OUPUT 2 Activity: 7 (approved) / 7 (developed) OUPUT 3 Activity: 2 (approved) / 2 (developed)  The number of the Earthquake Disaster Protection Plans formulated or revised based on the guidelines developed through the activity in the Project: • 2 (approved) / 5 developed : National Level, 2 Aimags, 2 Districts)
	Following systems for Earthquake Disaster Risk Reduction which have taken root in NEMA based on the approved guidelines, rules, and provisions:	<ul style="list-style-type: none"> <li>• Formulation and Revision of Regional Earthquake Disaster Protection Plan</li> <li>• Development of White Paper for Disaster Risk Reduction</li> <li>• Collection and Management of Disaster Related Information</li> <li>• Implementation of Earthquake Risk Assessment</li> <li>• Promotion of Disaster Risk Reduction Education and Awareness Raising</li> </ul>

Source: JICA Expert Team

### II.3 History of PDM Modification

The modification of PDM was made in the following JCC meeting as shown in Table II.3.1.

**Table II.3.1 History of PDM Modification**

Parent Document	Date of Signing	Revised Content
MM on the 8 <sup>th</sup> JCC	June 5, 2019	Objectively Verifiable Indicators for Overall Goal a -The formulation of Disaster Protection Plan -The system of formulating White Paper established -Referring to the guideline on Seismic Evaluation -Continue to foster seismic engineers -Referring to guidelines of DRR education in a school for Project Purpose -The number of the approved guidelines -Formulation and/or revision the plan -Development of White Paper -Collection and Management of Disaster Related Information -Promotion of DRR education and Awareness

Source: JICA Expert Team

### II.4 Others

#### II.4.1 Results of Environmental and Social Considerations

The Project does not involve environmental and social considerations. However it is important to pay attention to the environmental impact in the activities of DRR.

**II.4.2 Results of Considerations on Gender/Peace Building/Poverty Reduction**

It is necessary to consider gender, especially in the operation of evacuation centers and educational activities, when implementing disaster prevention measures using the guidelines formulated in this project. It is also necessary to take care that the information on disaster prevention measures should be steadily disseminated to residents at all levels.

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