



National Emergency
Management Agency (NEMA)



Japan International
Cooperation Agency (JICA)



Ministry of Construction and
Urban Development (MCUD)



Ministry of Education, Culture,
Science and Sports (MECSS)



General Agency for
Specialized Inspection (GASI)



Master Planning Agency of
Capital City

PROJECT FOR STRENGTHENING THE NATIONAL CAPACITY OF EARTHQUAKE DISASTER PROTECTION AND PREVENTION IN MONGOLIA





CHIEF OF NEMA,
MAJOR GENERAL
T. BADRAL

FOREWORD

Among the over 40 types of disaster that are caused by unanticipated phenomenon of nature and human beings throughout the world, earthquake is a disaster that causes enormous damage in human life, health, society, economy and the environment in the shortest time.

While 85% of the population concentrates in urban areas, seismicity remains active in the central, northern, western and southern regions of Mongolia.

An earthquake of magnitude 6.6 to 7.6 may occur in active areas of the earthquake, and survey result shows that in that situation 22 to 50% of the buildings in Ulaanbaatar city will be damaged and collapsed, and more than 30,000 people will be affected.

The above circumstances and the results of the related study are major alarms for us, and the necessity to strengthen the system for prevention of earthquake disasters, disaster preparedness, strengthening the structure for risk mitigation, and improving national capacity of earthquake disaster prevention is high.

Under such circumstance, Japan International Cooperation Agency (JICA), extended the following cooperation for the Emergency Management Department of the Capital City (EMDC) through the technical cooperation for development planning named "The Project for Strengthening the Capacity of Seismic Disaster Risk Management in Ulaanbaatar City" from February 2012 to October 2013. As a result of requesting JICA to implement Phase 2 after the previous project was implemented smoothly, "The Project for Strengthening the National Capacity of Earthquake Disaster Protection and Prevention in Mongolia" is being implemented from 2016 to 2019.

By implementing this project, we will acquire the latest practice of Japan and improving legal frameworks of earthquake disaster protection countermeasures, and coordination among related organizations will be enhanced, progress of prevention and preparedness and also awareness of public will be developed and realized.

We will do our best to make this project smoothly.

OVERALL GOAL

Seismic risk will be reduced.

PROJECT PURPOSE

The capacity of the National Emergency Management Agency (NEMA) will be enhanced through the activities for strengthening the countermeasures for seismic risk.

PROJECT PURPOSE

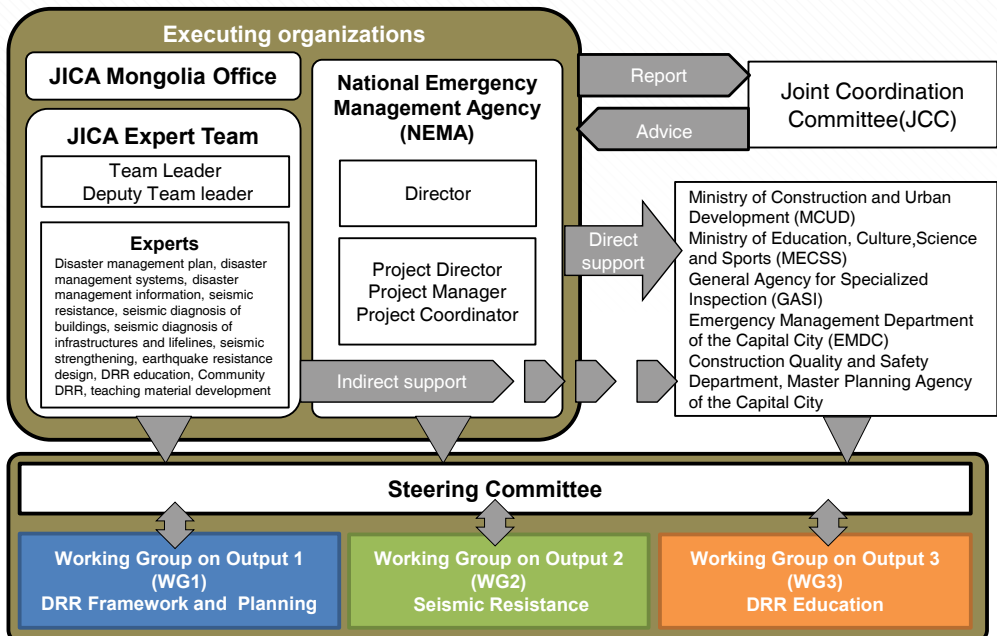
- Output 1:** Capacity for data collection on disaster risk reduction and coordination among related organizations will be enhanced.
- Output 2:** Capacity of public administration officer related to the seismic assessment and seismic strengthening of buildings will be enhanced.
- Output 3:** Implementing a plan on disaster risk reduction education and awareness raising activities will be developed and realized.

December, 2016

PROJECT PERIOD: 3 YEARS

January, 2020

PROJECT IMPLEMENTATION STRUCTURE



OUTPUT1: DRR FRAMEWORK AND PLANNING

1-1. DISASTER RISK ASSESSMENT

The WG1 decided to develop two types of earthquake disaster risk assessment guidelines (GLs). One is comprehensive version for the central and local governments and the other is detailed version for experts and researchers. As a first step, the comprehensive version has been developed to be applied to the pilot activities for regional earthquake disaster protection planning. In this GL, the risk assessment method prescribes a method suitable for Mongolia, so that governmental staff who are not familiar with expertise in earthquake risk can also evaluate it by using the attached application software.

1-2. DISASTER PROTECTION PLANNING

The WG1 is preparing four types of disaster protection planning guidelines (GLs) targeted at National level, Aimag /Soum Level, Capital City/ District Level and State services. The WG member learned the composition and concept of the disaster protection plan in Japan at the training in Japan. The results of the learning at the training were reflected in the contents of new GLs. Especially, in order to use the results of risk assessment in the earthquake disaster protection plan effectively, we have adopted a new concept in Mongolia that sets earthquake disaster reduction goals.

1-3. DISASTER REDUCTION AGREEMENT

Draft agreements for each field such as "information / communication", "fuel", "medicine" are under discussion within each related organization. It is expected to be signed between NEMA, organization and private sectors in the near future.

In order to test the effectiveness of agreement for earthquake disaster response, and to demonstrate good practice of agreement to promote agreement in health sector to other sectors, a joint training was made on April 9th. A total of 38 participants from various sectors joined the training.

1-4. WHITE PAPER

The preparation work of the "2017 White Paper" has been completed. This document was edited by reference to the white paper on disaster management in Japan and it was the first trial in Mongolia.

1-5. DISASTER DATABASE

The need to establish a management team to operate and manage Disaster Spatial Database (DSDB) for DRR had been discussed in the WG continuously. Finally the new division was established under the Public Announcement and Emergency Administration Centre in NEMA at the end of May 2018. The Guideline (GL) for operation and management of DSDB using the Internet-based Disaster Spatial Information System (I-DSIS) is being developed in parallel with discussing the detailed work procedure and responsibility in the new division.



Pilot activity for regional disaster protection planning in Umnugovi Aimag



Table top exercise in the joint training for testing effectiveness of agreement



Group exercise for utilization of I-DSIS in the database training

OUTPUT2: SEISMIC RESISTANCE

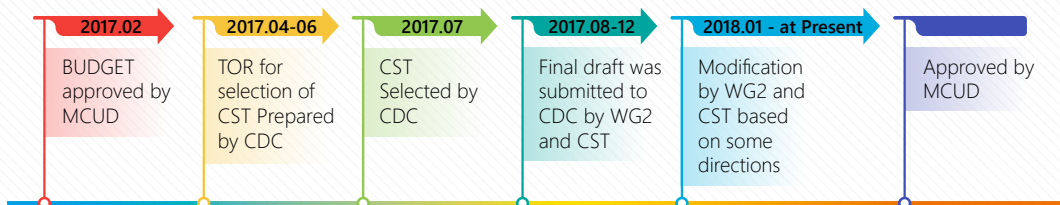
2-1. SEISMIC DIAGNOSIS OF BUILDINGS

The WG2 decided to develop three types of guidelines (GLs) for seismic evaluation and retrofitting method of existing buildings based on the Japanese standard for seismic evaluation and seismic strengthening. Reinforced Concrete Buildings(RC), Wall Type Precast Concrete Buildings (PC) and Masonry Buildings were selected as targets for preparation of GLs.

Since the newly established GLs must be used practically, WG2 decided to follow the approval procedure in the Ministry of Construction and Urban Development (MCUD) shown in the figure below to make standards and regulations. In the figure, a tentative schedule is also given.



Draft guidelines for seismic diagnosis of buildings



TOR: Terms of Reference, CDC: Construction Development Centre, CST: Consulting Service Team

Procedure to prepare guidelines

2-2. SEISMIC DIAGNOSIS OF INFRASTRUCTURES AND LIFELINES

The WG2 is also preparing the GL of seismic evaluation for infrastructures and lifelines by going through the same procedure as GLs of buildings. The GL has already been approved by the Science and Technology Council of MCUD in December 2017, and now in waiting for signing by the Minister of MCUD.



Explanatory meeting for seismic diagnosis of infrastructures & lifelines

2-3. DESIGN FOR SEISMIC STRENGTHENING

The WG2 is going to implement a trial design for seismic strengthening targeted at existing buildings for Kindergartens (Masonry), School (Masonry), Public Office (Masonry), Hospital (RC) and Apartment House (PC).

4-DAY TRAINING FOR SEISMIC EVALUATION

For improvement of knowledge and ability for those who carry out seismic estimation on buildings, infrastructures and lifelines, 4-day training was conducted in collaboration with the MCUD from June 4th to 7th, 2018. This training attracted a lot of interest of responsible officers for seismic evaluation and there were more than 100 participants for the training on building diagnosis (June 4th-6th) and more than 80 participants for the training on infrastructure and lifeline diagnosis (June 7th) respectively.



OUTPUT3: DRR EDUCATION

3-1. SCHOOL DRR EDUCATION

The WG3 is preparing the guideline (GL) which shows contents, teaching method and implementation way of Disaster Risk Reduction (DRR) Education titled "The Program for Life Safety Education" in kindergarten and primary and secondary schools based on amended Law on Disaster Protection and the knowledge learned in the training in Japan. After submitting the final draft GL to the Ministry of Education, Culture, Science and Sports (MECSS) in March 2018, the GL was modified based on the comments provided by the reviewers in the official approval process in the MECSS. The GL was approved by the MECSS on 6th April 2018.

As the educational materials such as textbooks and supplementary reading materials for DRR education, the "Guidebook" is being developed as an annex of "The Program of Life Safety Education".

TRIAL LESSONS FOR DRR EDUCATION

For the reference of the sample lesson plans, trial lessons for pre-school, 5th grade students, and 8th grade students were conducted by the JICA Expert Team on 1st and 2nd May 2018 by inviting the staff members of the counterpart organizations including of working group members and teachers of the target schools.



3-2. COMMUNITY DRR EDUCATION

Development of Institutional Framework for DRR Education and Raising Awareness

For developing better environment for comprehensive work planning for DRR education and raising awareness at national and local levels in Mongolia, the institutional framework among stakeholders such government organizations and donor agencies is being constructed through a series of regular meetings and developing a mailing list and a user-friendly website for managing related activities plans with every stakeholder.

Development of DRR Training Materials for Community

The WG3 is developing the instructor's guidebook and tools for the community-based DRR education and raising awareness in cooperation with the World Vision Mongolia. Now, the materials is being revised and updated through a series of pilot trainings as well as other support activities for wide dissemination of the activities in Mongolia.

Development of Educational & Training Program in Training Centre

The WG3 is also developing the educational and training program in the Disaster Protection Training and Methodology Centre of the Emergency Management Department of the Capital City (EMDC) by improving the exhibits and training program for the earthquake experience room based on the learning in Japan.

IMPLEMENTATION OF TRAININGS ON DRR EDUCATION AND RAISING AWARENESS

The Training for Trainers (ToTs) were conducted on March 2018 in Ulaanbaatar City and in Zavkhan Aimag combined with the "Be Ready" program organized by the World Vision Mongolia and Mongolian Red Cross Society. And then, under the initiative of instructors trained in ToTs, the Workshops for DRR Awareness Raising were successfully conducted on May 2018 in Otgon Soum and Uliastai Soum in Zavkhan Aimag, and Bayangol District and Bayanzurkh District in Ulaanbaatar City.



BACKGROUND OF THE PROJECT

No large-scale human and property damage due to earthquakes has occurred until now in Mongolia, however, the largest inland earthquakes of magnitude 8 class have been recorded frequently in the western and southwestern area. In addition, movements of multiple active faults are observed near Ulaanbaatar, the Capital City of Mongolia, which is densely concentrated with half of the Mongolian population, and increased fault movement is said to be observed at one of those active faults. There are growing concerns about rising earthquake risk.

In February 2017, the amended Law on Disaster Protection was enforced in Mongolia. The content of the former Law, which focused on preventive measures against dzuds as well as emergency response to fires, had been reviewed and newly developed clauses related to activities for Disaster Risk Reduction (DRR) such as disaster risk assessment, enhancement of disaster protection plan, training and awareness raising for disaster management and others were incorporated in the amended Law.

As represented by enforcing the amended Law

on Disaster Protection, the importance of DRR is being recognized increasingly in Mongolia. On the other hand, it is an urgent task for the National Emergency Management Agency (NEMA) and other related authorities and organizations to improve the overall capacity of responding appropriately to DRR activities especially to earthquake disaster management. Under these circumstances, the central government of Mongolia requested the government of Japan to provide aid for technical cooperation project aiming at strengthening the national capacity of earthquake disaster management.

In Japan, there is a long history of improving the legal framework and social systems for disaster prevention and mitigation based on a lot of lessons learned from each experience of past major disasters. On the basis of such longtime Japanese experience and knowledge gained from past disasters, the technical cooperation project to support mainly improvement of the capacity for disaster prevention and mitigation against earthquake disaster in Mongolia with the NEMA as the main counterparts of the project has begun.



IMPLEMENTATION OF TWO TIMES TRAININGS IN JAPAN

For learning the disaster risk reduction and management system in Japan, the first training was conducted from March 20th to 29th, 2017. The twelve trainees from the Mongolian side took part in the training. After the training, representatives of each Working Group (WG) who attended in the training shared their knowledge and experiences obtained through the training with other WG members and related officers in NEMA and other organizations, and they actively advanced each WG activity by reflecting the lessons learned from the first training.

For gaining more specific knowledge and learning a technical approach which are directly utilized to prepare guidelines, agreements, and training programs for the activities of each WG, the Mongolian side

requested further training in Japan on April 2017. As the result of series of discussions about the further training in Japan, implementation of the second training was decided by dividing into three times for each WG. First, the training for WG3 (OUTPUT3) with ten trainees named "Capacity Improvement for the promotion of DRR" was implemented from October 29th to November 11th, 2017. Then, the training for WG2 (OUTPUT2) with nine trainees named "Capacity Improvement for Seismic Diagnosis and Strengthening Buildings" was also implemented from November 12th to 22nd, 2017. Finally, the training for WG1 (OUTPUT1) with thirteen trainees named "Capacity Improvement for Disaster Management Planning" was implemented from December 6th to 16th, 2017.



PROVISION OF EQUIPMENT

The equipment for seismic diagnosis of buildings and the equipment of earthquake simulation experience for the Disaster Protection Training and Methodology Centre are supposed to be procured and donated by JICA. In order to illustrate the role equipment,

the Mongolian side proposed the Operation and Maintenance (O&M) plans with training program respectively and those plans were submitted to JICA. The process of procurement of the equipment has begun.



JICA EXPERT TEAM

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