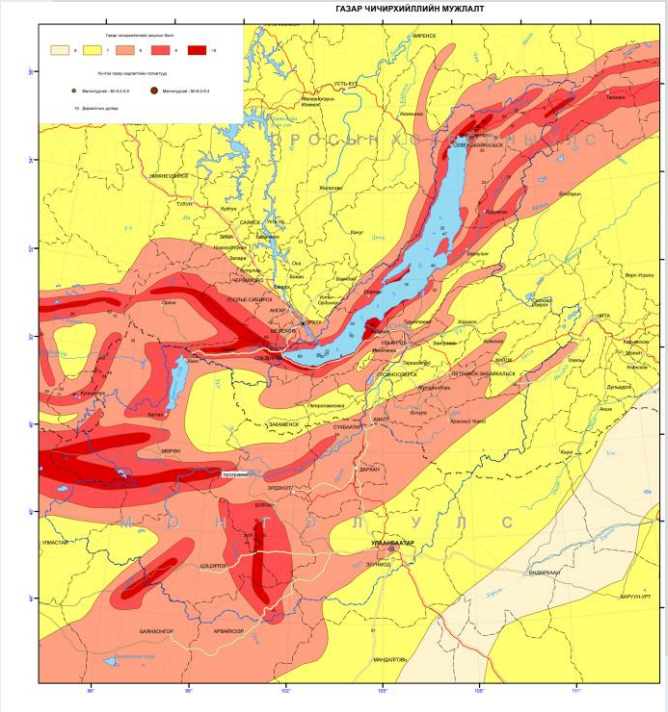
УНДЭСНИЙ АУДИТЫН ГАЗАР

Auditing Report on the implementation of National Program for Reduction of Earthquake Risks



National program was implemented efficiently and effectively

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You can see the report from the website of the National Auditing Office
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Executive summary:

Within the mandate of State Audit Law of Mongolia, the National Audit Office performed a performance audit as the operational entrusted responsibilities. The objective of the auditing activities is to assess efficiency and effectiveness of the national program implementation and to improve its result.

Audit scope was concentrated on the following bodies: National Emergency Management Agency (NEMA), Ministry of Finance (MF), Ministry of Buildings and Urban Development (MBUD) responsible for implementation of the National program of earthquake disaster risk reduction and Action plan. The audit covered the period from 2010 to 2015 and focused on the capital city.

We found following key issues in the audit:

- Network for Earthquake registration stations has been expanded,
- Public knowledge is sufficient on prevention from earthquake risk,
- No detailed operation plan of implementation of re-development planning the city and the works to demolish earthquake-intolerant buildings and include them in re-development planning are being delayed,
- Insufficient monitoring of national program implementation and of its results,
- There is no respective and independence budget to implement national program.

The draft audit report was shared with the audited entity but there was no comment from audited entity and agreed the draft audit report. The ***key recommendation are***

- Develop detailed operation plan of implementation of the city re-development planning, and based on the professional organization's evaluation in terms of buildings' withstand earthquake, put into an order and take step-by-step measures
- Make detailed plan of results and levels will be reached after implementation of the program through financial fund, include it in annual plan till 2020 and take related measures

Part 1. About the audit

Within the mandate of State Audit Law of Mongolia, the National Audit Office is performed by performance audit as the operational entrusted responsibilities.

Performance audit is under Performance Audit Manual complying with international Standardss of Supreme Audit Institution (ISSAI) 3000 and 3100. Furthermore, ISSAI 5500 and 5510 being the standard of disaster auditng are applied in this auditing.

Audit objectives, source of criteria:

The objective of the auditing activities is to assess efficiency and effectiveness of the national program implementation and to improve its result.

Sub-objective 1:

To assess the efficiency the national program management in achieving targets.

Sources of criteria

- Law on Disaster Protection of Mongolia;
- State Policy on Disaster Management adopted by Parliament Resolution No.22 of 2011;
- Action Plan of Earthquake Disaster Risk Reduction for the National Program Implementation approved by the Government Resolution No.157 of 2009;
- Government Acceleration Plan of Earthquake Disaster Preparedness approved by the Government Resolution No.118 of 2014;
- Establishment of State Renovated Offices on the Disaster Protection approved by the Government Resolution No.81 of 2015;
- General agency for specialized inspection
- Rules, regulations, and templates to the relevant bodies and laws and acts, standards and norms;

Sub-objective 2:

To identify whether resources are provided and used efficiently and effectively.

Sources of criteria:

- Appendix to the Mongolian Law on State Budget such titled by "The List of Implementing Projects and Measures of funding by state budget";
- Law on Disaster Protection of Mongolia;
- State Policy on Disaster Management adopted by Parliament Resolution No.22 of 2011;Action Plan of Earthquake Disaster Risk Reduction for the National Program Implementation approved by the Government Resolution No.157 of 2009;
- Government Acceleration Plan of Earthquake Disaster Preparedness approved by the Government Resolution No.118 of 2014;

- Rules, regulations, and templates to the relevant bodies and laws and acts, standards and norms;

Auditing scope: Audit scope is concentrated on the following bodies such as the National Emergency Management Agency (NEMA), Ministry of Finance (MF), Ministry of Buildings and Urban Development (MBUD).

The implementation of the National program of earthquake disaster risk reduction and Action plan were audited. The audit covered the period from 2010 to 2015, as the National program was approved in 2009.

The audit was focused on the capital city. The main focus of the audit is on pre-disaster activities.

Audit timelines: Advanced auditing research work was planned from March 07, 2016 with the plan to perform the site works from August 29, to complete the report within September 12, 2016 for review and discussion at the Meeting of Auditing Board in order to deliver to the relevant organizations and officials within October 18, 2016.

The auditing work was managed and supervised by Naranjargal M., a senior auditor and Chairman of Performance Auditing Department to revise step by step control and performed by experts Khash-Erdene B. and Berkhsaikhan Ch. from Performance Auditing Department.

Audit methodology: Performance audit is carried out as per the international auditing standards, guidelines issued by the SAI Mongolia which are based on the INTOSAI performance audit ISSAIs and guidelines. SAI Mongolia performance audit planning follows prioritization of audit subject matters through strategic planning and as per important selection criteria. Using assessment scoring matrix, performance audit subject matters are prioritized and topics selected for audit. Audit used the following audit procedures:

- Interviewed the executives and staffs of relevant agencies that is National Emergency Management Agency, Ministry of Buildings and Urban Development, and sampled local authorities.
- Gathering evidence from National Emergency Management Agency through Comparisons, file examination, situation analysis
- Develop audit findingd
- Preperattion of report

Part 2. Introduction

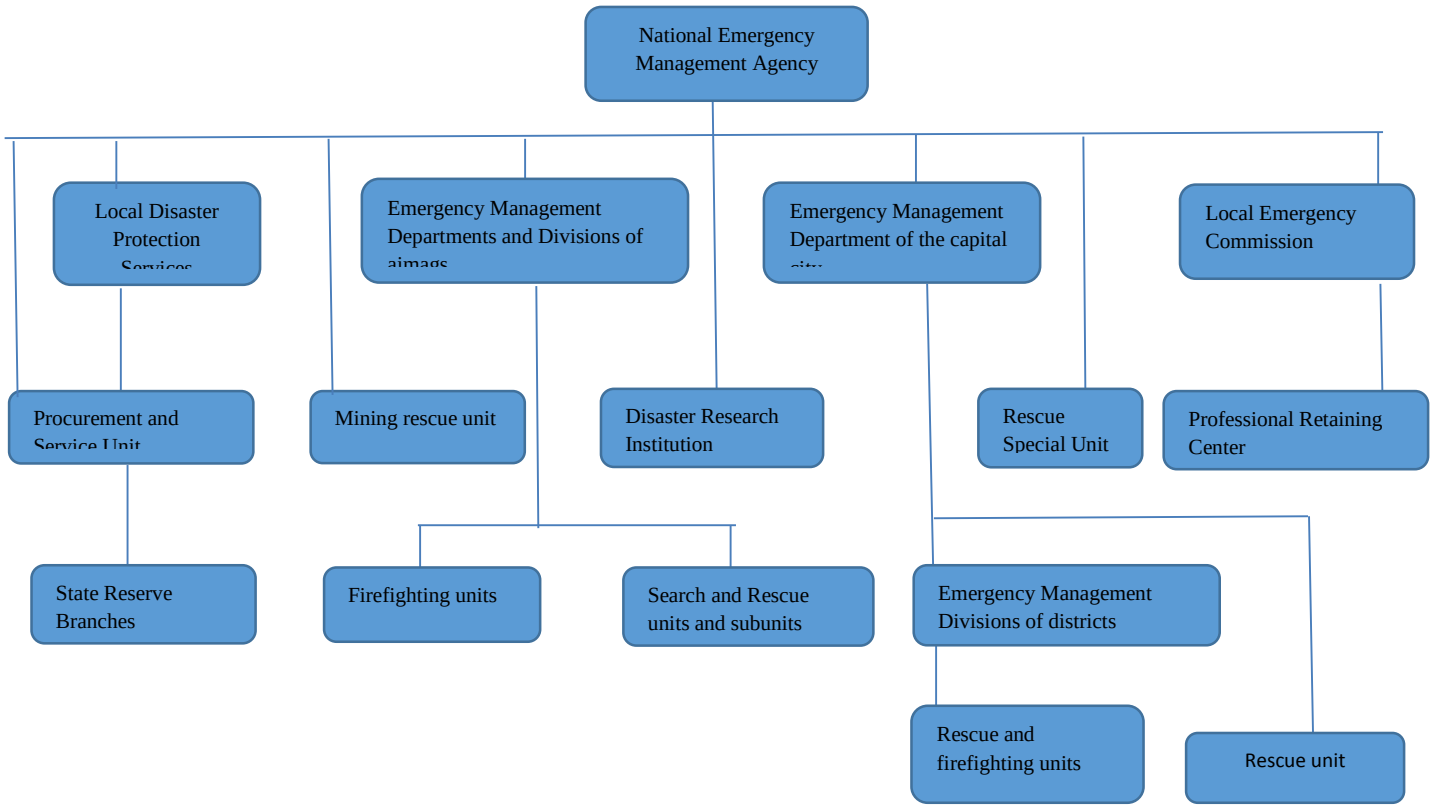
“National Program for Reduction of Earthquake Risks” was approved by the Governmental Resolution Nr. 157 in 2009 to be implemented in two stages in 2009-2014 and in 2015-2020, respectively.

The objective of the program is to prevent from possible earthquake risks within the territory of Mongolia, to reduce disaster risks in the areas of strong earthquake focus, to reduce damages that might be caused by the destroy and ruin of constructions and buildings through improvement and enhancement of the presently used building constructions, to provide safety for apartment buildings, public, civil, and industrial building, road and bridges, water channels and dams, and engineering lines, and to prevent from possible natural disasters and dangers.

The financial resource to implement the national program is international donations, assistances, and state budgets.

About the audited entity: The main implementer of the program shall be the National Emergency Management Agency, Ministry of Buildings and Urban Development and Ministry of Finance.

Institutional framework:



Mongolian National Emergency Management Agency is headed by the Deputy Prime Minister of Mongolia. According to the Disaster protection law the agency responsible to implement the disaster protection policy, law and regulations, to organize and manage disaster protection activities at the national level.

The NEMA managing more than 120 disaster protection services, departments and units of Mongolia.

Part 3. Audit finding, recommendation and conclusion

The audit finding have been collated based on following two sub-objectives:

1. To assess the efficiency the national program management in achieving targets.
2. To identify whether resources are provided and used efficiently and effectively.

Sub-objective 1	*To assess the efficiency the national program management in achieving targets.*
Conclusion 1	*The national program is being implemented successfully*

Researchable question 1.1: Are the goals and objectives achieved of the national program?

Conclusion 1.1: National Program has been reaching its objectives and mission statement

Audit finding 1. *Training on prevention from earthquake risks has been organized.*

Criteria: *Trainings on prevention of earthquake should be organized.*

Conditions: Within the framework of the National Program on Reduction of Earthquake risks, totally 14 trainings were organized domestically and abroad in 2009-2015 whereas international trainings were organized jointly with USA, Russian Federation, Korea, Malaysia, and China. In 2009-2015, complex disaster and disaster prevention management team trainings were organized in 21 provinces of Mongolia.

These trainings and workshops have fully involved all the local natural disaster authorities and professional disaster groups through organization of various earthquake disaster prevention trainings including searching and excavating ruins and tatters, rescue activities in order to experiment the disaster prevention plan together with relevant clarifications to the disaster prevention plan.

The natural disaster alarm was given simultaneously at state level: in 2012-2015, some economic entities and organizations had a training practice to remove and transport people from the disaster areas. Totally 1,745,726 persons were involved into the training in duplicate numbers that were equal to 54% of the total population of Mongolia.

Within the framework of these trainings and practices, permanent training activities are organized on prevention from earthquake disasters, on reduction of risks, and on first aid on yourself and others. In addition, totally 14000 pieces of introduction pages were printed jointly with Mongolian Red Cross Association to distribute to relevant province and local area people and organizations.

Audit finding 2: *National Emergency Management Agency has many responsibiltities and implementation but there is no single office operating on prevention from earthquake disasters.*

Criteria: *Capacity of the organizations in charge of earthquakes prevention should be enhanced.*

Causes: Due to lack in human resources and insufficient financial resources

There is no professional organization to develop project implementation measures in detail and to provide the implementation of the project.

Due to insufficient human resources and financial capacity, it might be the capacity of organizations responsible for prevention from earthquake risks has not improved.

Audit finding 3 *Settlement and regional risk assessment were conducted*

Criteria: *Settlement and regional risk assessment should be conducted.*

Due to population centralization and too much construction in local areas in many countries, disaster and risk estimation and risk reduction planning have been done through usage of geographical information system in different geographical location. In this accordance, Japanese specialists have conducted general earthquake risk estimation of Ulaanbaatar city under the auspice of UNDP project and financing in 2000.

In addition, Ulaanbaatar City earthquake risk estimation has been done in 2013-2014 under the auspice of the "Project to strengthen the earthquake risk prevention and protection capacity of Ulaanbaatar City" implemented jointly with Japanese international cooperation organization. In accordance with the estimation, 22-50% of Ulaanbaatar City construction shall be ruined and damaged and over 30000-60000 persons shall be affected in case of 6-7.6 scale earthquake in Ulaanbaatar neighborhood.

In accordance with advanced research summary of researchers and scientists, Ulaanbaatar City territory may have areas of earthquake risk with 6.5-6.8 magnitude that may cause 9-10 scale earthquakes in the Ulaanbaatar city neighborhood.

The risk covers 30 km long and 13km deep areas in Emeelt and Songino neighborhoods, active zones of Ulaanbaatar City in accordance with the advanced surveys.

In 2014, disaster risk estimation has been made in 18 soums of Bayan-Ulgii, Khovd, and Uvs aimaks jointly with World Vision-Mongolia International Organization.

Within the framework of the Second Stage for the "Project to strengthen earthquake risk prevention capacity of Ulaanbaatar area" jointly with JICA International organization, we have exchanged with opinions on the conducting risk estimations in earthquake of Darkhan Uul and Orkhon aimaks.

Risk estimations have been done successfully in Ulaanbaatar and 29 soums of 8 aimaks through projects and programs of international organizations while the risk estimations have been planned for the rest aimaks and soums.

Audit finding 4 *General and micro-zones mapping were developed*

Criteria: *General and micro-zones mapping should be developed.*

1:25000 000 scale mapping for earthquake zones in Mongolia was developed in 1982, which has been used for urbanization and construction mapping and planning purposes since 1988. Ulaanbaatar City micro zoning scheme was developed in 1968, which has been used for construction projects until today. In 2012, 1:25000 scale mapping of Ulaanbaatar City earthquake zoning has been transferred into 1:10000 scale by 50.0 million tugriks finance of Capital City Budget. Ulaanbaatar City, Emeelt, Nalaikh, Baganuur, and Bagakhangai districts' 1:10000 scale earthquake mapping was developed through dominating frequency zones, soil maximum acceleration, and MSK-64 scaling. Within this framework, over 6000 drilling information, measurements of 2557 gravimeter points, measures through 226 km long vibrating exploration lines, measures of 1660 points by seismic tools in order to create information data in WGS-84 system for further processing.

At the level of Mongolia, 1:10000 scale earthquake zoning activities have been implemented stage by stages. In due to general and micro-zones mapping developed, community would be possible to aware of unexpected risk by the risk calculation of earthquake.

Audit finding 5: *Network for Earthquake registration stations has been expanded.*

Criteria: *Station network for earthquake registering should be extended.*

The first station for earthquake vibration measurement was established in 1957. In accordance with "Intergovernmental Agreement on Cooperation in Geophysical Sector" signed by and between the Governments of Mongolia and France in 1994, a network station with earthquake registration data registration and electronic tools was installed in the Ulaanbaatar neighborhood. In accordance with normal operations of

the station, learning new software and methodology of digital station information processing and an implementation of new technology has allowed to reach a new stage of the research materials formation.

This station registers loose earthquake of less than 3.5 magnitude scale. About 600 earthquake cases were registered in distances of 100 km from Ulaanbaatar; most of which were loose earthquake; however, they were very important for setting active earthquake zones.

In December 2014, "Succeed to Warn" system was established to give alarms of S wave around 55-100 seconds prior to danger through modern broadcasting and information transmitting systems in case of in Ulaanbaatar.

In due to Network for Earthquake registration stations has been expanded it would be possible to get detailed information.

Researchable question 1.2 Do the outputs support improvement of disaster risk reduction?

Conclusion 1.2: Outputs support improvement of disaster risk reduction

Audit finding 6: *Public knowledge is sufficient on prevention from earthquake risk.*

Criteria: *Knowledge of the community on earthquake disaster prevention should be increased.*

In 2012-2015, totally 1,745,726 people have been involved into the training to transmit economic entities, organizations, and citizens from the disaster points through public alarm system and emergency announcement simultaneously at state level.

In accordance with the Resolutions 339 and 340 of the Mongolian Government in 2011 and Schedule of Training approved by the Chairman of the Chancellery Department at the Governor's Office of the Capital City on March 11, 2016, and under the auspice of the Instructions approved by Capital City Emergency Service Chairman on March 11, 2016, Earthquake Prevention and Disaster Training was organized among 49000 students of elementary, secondary, and high schools of 80 secondary educational institutions and 850 children from Special Schools for Disabled Children, 39150 children from 52 kindergartens, and 100000 students from 36 universities and colleges, respectively.

Pens with warning to prevent from earthquake, Warning of Rescuer Gobi Bear, placards with instructions to prevent from earthquake disasters, and TV strokes on measures to announce earthquake disasters to citizens earlier have been delivered to citizens. NEMA should continue to train and create awareness on the risk of disaters in the country as a whole

Audit finding 7: *Earthquake bearability estimations have been done on constructions and buildings*

Criteria: *Buildings and structures should be assessed.*

Risk estimation and documenting of constructions and buildings in the earthquake risk zones of Ulaanbaatar have been intensified through inclusion of 58 buildings in 2011, 120 buildings in 2012, and 150 buildings in 2013 into the earthquake information and data fund, respectively.

Since 2011, inspection activities have been conducted on earthquake bearability and quality of 328 buildings as a representative of other similar buildings and made a summary and construction passports for 856 constructions to include into information data fund.

Ministry of Construction and Urbanization has made a blacklist of 535 constructions susceptible to the earthquake risks; 177 of them were involved into sectional planning of re-planning activities while other 210 constructions can be used through construction enhancement and improvements, and other 148 constructions are intended for re-planning activities.

Audit finding 8: *No detailed operation plan of implementation of re-development planning the city and the works to demolish earthquake-intolerant buildings and include them in re-development planning are being delayed.*

Criteria: *Evaluated in terms of their capacity to withstand earthquakes and earthquake-intolerant ones should be put subject to re-development planning (or demolition).*

A survey was conducted on the constructions that fail the exploitation requirements. First of all, re-planning and renovation issues have been solved for constructions with the summary of professional inspection authorities on prohibition for further residence with the assistance of residents and project implementing organizations.

Due to population density of the capital city, possible risks and damages for constructions in overpopulated areas of the capital city, and roads traffic overloads, transmission activities are planned for 24 areas of 6 directions with the designation to remove from ger districts and downtown areas.

Even city re-development operations have been running together with favorable legal environment, constructions susceptible to the earthquake dangers are delayed to dismantle for further re-development process due to lack of detailed re-development plan of the capital city and insufficient financial resources to

run the re-development process. It can't prevent from earthquake dangers thereby having higher risks of earthquake.

Audit finding 9: *Scientific and technological advances are insufficient and can't use modern advanced technology.*

Criteria: *Scientific and technological progress and achievements should be introduced and used for the purposes of the disaster damage reduction.*

All the rescue teams, branches, and units operating at state level have insufficient technique and equipment for rescue and exploration activities *(around 40 per cent)*, can't use modern advanced technology due to There is no financial resources, staffs not available to use new technology.

In further, it is necessary to research top experiences of foreign countries on the usage and exploitation of modern advanced technology in the prevention from disaster conditions, to deliver the relevant authorities with the calculation of necessary financial resources for solution of the investment issues.

Causes: There is no financial resources, staffs not available to use new technology.

Researchable question 1.3: Was there a result based monitoring mechanism used?

Conclusion 1.3: There was not result based monitoring mechanism used

Audit finding 10*: Insufficient monitoring of national program implementation and of its results*

Criteria: *Result based monitoring mechanism should be existed*

Due to absence of professional units and officials to monitor the projects and programs, the project implementation and results are not monitored. In further, it is necessary to establish a national program monitoring unit to conduct monitoring and controlling activities permanently and to report the result.

Causes: **No officials and official department to monitoring the program**

Sub-Objective 2

Conclusion 2

To identify whether resources are provided and used efficiently and effectively.

Resources were insufficient and there weren't regulation about program resources

Researchable question 2.1: Is financial resources adequate for implementing the national program?

Conclusion 2.1: Financial resources are not adequate for implementing the national program.

Audit finding 11: *Financial resources do not planned based on program's measures and actions to be implemented. There is no specific budget as the funds are provided through the National Emergency Management Agency.*

Criteria: *Financial resources should be planned based on the measures and actions to be implemented.*

There is no special budget for the implementation of National Program for Reduction of Earthquake Disaster; however, the necessary amount is reflected into the budget of program implementing organizations for approval by the Parliament of Mongolia.

In order to implement National Program for Reduction of Earthquake Disaster in Mongolia, many foreign countries and international organizations have granted various aids and donations.

Outcomes of project implementation and intended levels were planned in details on basis of the financial resources and reflected into year-by-year annual plans up to 2020 in order to take the relevant measures.

Causes: **There is no administrative and financial independence**

Researchable question 2.2: Is the program funding being used according to approved plan?

Conclusion 2.2: The program is not funding being used according to approved plan.

Audit findings 12: *There is approved plan but no respective budget to implement national program*

Criteria: *Financial resources should be spent as budgeted and programmed.*

Budget specifically for implementing the program is not available therefore it is financed by operational expenses. Action plan for implementing the program is not linked with budget plan. Thus it is required to develop a separate budget for implementing the program and it should be linked with the action plan.

Causes: Government doesn't provide independent budget

Researchable question 2.3: Were resources used as per the regulations?

Conclusion 2.3: There weren't regulation about program resources

Audit finding 13: *There is no regulation sources of budget and how to spend that*

Criteria: *Budget should be funded according to approved budget timeline.*

Although there are a procedure to implement the program and action plan, generation and disbursement of budget fund are not reflected in the procedure. This could result in inappropriate utilization of budget fund and inadequate generation of budget due to uncertain sources and appropriation. Therefore, it is necessary to include issues releted to budget in the procedure in order to implement.

Causes: National Emergency Management Agency didn't develop regulation about budget spending

Conclusions:

National program was implemented efficiently and effectively

- ***There weren't regulation about program resources***
- ***The program is not funding being used according to approved plan.***
- ***Financial resources are not adequate for implementing the national program.***
- ***There was not result based monitoring mechanism used***
- ***Outputs support improvement of disaster risk reduction***
- ***National Program has been reaching its objectives and mission statement***

Recommendations:

- ***To establish professional services to take detailed measures of the program to be implemented and provide its implementation, solve financial issues, prepare specialists***
- ***Search for financial resources from donor agencies. Should organize training on using new technology for staffs***
- ***To develop detailed operation plan of implementation of the city re-development planning, and based on the professional organization's evaluation in terms of buildings' withstand earthquake, put into an order and take step-by-step measures***
- ***To appoint a monitoring department (service) and constantly make monitoring based on results***
- ***NEMA should make specific regulations to provide administrative and financial independence to project and ensure regular provison of budget***
- ***Search for financial resources from donor agencies***
- ***NEMA should develop draft regulation about budget spending and get it approved by the government***

Appendix 1

Evaluated in terms of their capacity to withstand earthquakes

(Ulaanbaatar city)

	2011	2012	2013	2014	2015
Number of buildings need to be assessed	42	120	150	150	129
Number of assessment buildings	58	120	150	85	129
Number of earthquake intolerant buildings	20	24	50	72	126