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Application for the
Technical Cooperation (Development Study)
by the Government of Japan

1. Project Digest

(1) Project Title

The Study on Earthquake Disaster Risk Mitigation for Almaty, Republic of Kazakhstan.

(2) Location

Almaty (Location map and study area are shown in Figures 1 and 2, respectively)

(3) Implementing Agency

The City Administration of Almaty will be the counterpart agency for the Study.

They will work in close collaboration with the Emergency Agency, the Ministry of Economy and Trade, Ministry of Transport and Communication, Institute of Seismology, Institute of Geology, the Kazakh Scientific Research Institute of Seismic Resisted Construction and Architecture, the Kazakh State Academy of Architecture and Construction, and the National Society of Red Crescent and Red Cross. Also, there will be several related central government ministries, departments and organizations, who will help in providing human resources and manpower.

(4) Justification of the Study

Present conditions of the sector

In the south and south-eastern parts of Kazakhstan have been repeatedly suffered destructive earthquake disasters in the past. These include disasters caused by the 1887 Vernoye earthquake (Magnitude, M=7.3), the 1889 Chilik earthquake (M=8.3), the 1911 Kemin earthquake (M=8.2), the 1990 Zaisan earthquake (M=6.3), the 1991 Baisorum earthquake (M=6.5), and the 1993 Tekely earthquake (M=7.3).

More than one third of the country's population (approximately 6 million people) live and more than 40% of the country's industrial output are produced in this seismic high risk region. Almaty, the former capital and located in the heart of the region, remains a financial, business and cultural centre with a population of 1.1 million.

Once an earthquake strikes the region, especially Almaty, the damage can be tremendous. The emergency agencies of the Republic of Kazakhstan estimated that the severe earthquake near the city would cause approximately 75,000 deaths and

Figure 1 Location Map

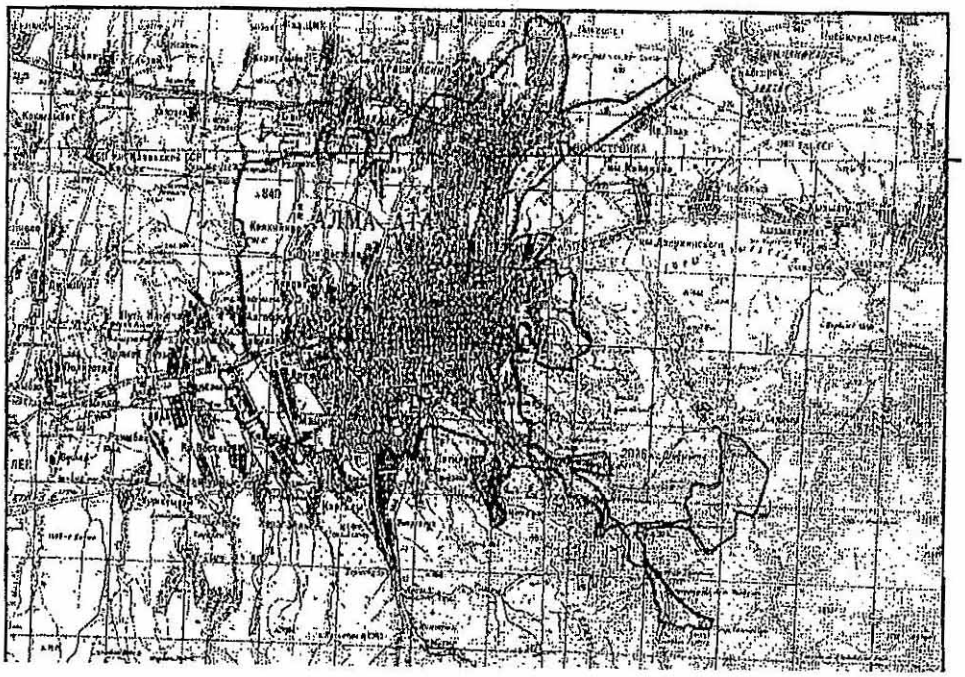

Figure 2 Study Area

300,000 injuries, and tremendous damages to the housing, essential infrastructure and life-saving facilities, along with enormous social and economic losses. Furthermore, a terrible toll will be inflicted as divert attention and resources needed for the greatest challenges of the country, i.e. economic development through transforming to the market economy, and social and environmental improvement.

Sectorial development policy of the national government

The Government of Kazakhstan is aware of this situation and has taken some initial steps to reduce the seismic risks and vulnerabilities of the country. However, because of the extent and complexities of challenge, a more comprehensive, holistic and regional cooperative approaches are required to further strengthen the Kazakhstan's capacity in order to reduce social, economic and financial impacts of potential future earthquakes.

Problems to be solved in the sector

Kazakhstan inherited significant amounts of infrastructure from Soviet times and has a relatively well-educated population. However, both physical and human capitals have eroded over the past decade; much of the existing building stocks and infrastructures as well as administrative, scientific and technological capacities have been eroding. These have enhanced the urban vulnerability of Kazakhstan, which lead to human, social, financial and economic losses, to the earthquake disaster.

Improvement of seismic resistance of building stock is the first priority for mitigating earthquake disaster risk of Kazakhstan. Capacity building is urgently required for evaluation and retrofitting of existing buildings and infrastructures, mechanism of enforcement of building codes and zoning regulation, and mechanism of quality control and construction management.

Creation and strengthening of community institutional systems are urgently required to enable them to take a lead role in risk mitigation and response management activities.

Whilst there is some liaison and information sharing, there needs to be a more consistent interface between the scientific and technological experts, communities, disaster management officials and the decision maker and planner. The effectiveness of response capacities can be strengthening by improvement of information management.

Kazakhstan has an institutional mechanism for disaster management. However, it focuses toward response and recovery that is activated as and when a disaster situation presents. A more holistic approach, wherein the processes of assessment of earthquake disaster risk, community preparedness, implementation of mitigation measures, integrated response effort, and recovery are integrated, is required.

Other CIS countries in Central Asia and the Caucasus have common problems. Past earthquakes in the region have repeatedly emphasized the inherent urban vulnerability of the countries, which lead to human, social, financial and economic losses. There is a high probability that a severe earthquake will occur near the capital of one or more of the countries in the region within the next 20 years, with consequences as devastating as or worse than those demonstrated by 25,000 deaths and 31,000 injuries caused by the recent Spitak, Armenia earthquake occurred on December 7, 1988. Regional cooperation for earthquake risk reduction is crucial for both Kazakhstan and other Central Asia and the Caucasus countries.

Outline of the Project/Study

The Study is focused on earthquake disaster risk mitigation for the City of Almaty. Basic data and information required for the earthquake disaster risk management will be compiled and presented on GIS maps. Field reconnaissance and field survey will be carried out to prepare digital topographic maps and to supplement the existing data and information. Earthquake impact to Almaty caused by anticipated earthquakes in future will be assessed and presented on GIS maps. Main issues faced in the earthquake disaster management of Almaty as well as of Kazakhstan will be identified and evaluated. These include policy, planning, technology, laws and regulations, institutional structure, and human resources.

Based on the complied data and information, the results of impact assessment, and the main issues identified and evaluated, recommendations for earthquake disaster management will be prepared, including emergency response and relief, recovery, disaster mitigation and preparedness. Emphasis shall be placed on improvement of seismic resistance of buildings, community preparedness, information sharing and management, integrated responses, and the regional cooperation. Implementation programs of the proposed recommendations will be prepared.

Purpose (short-term objective) of the Project/Study

The main objectives of the Study are:

(i) To assess earthquake disaster risk of Almaty,
(ii) To prepare recommendations to mitigate earthquake disaster risk of Almaty as well as Kazakhstan,
(iii) To prepare programs to enhance capacity of Kazakhstan to implement the recommendations,
(iv) To promote the regional cooperation for earthquake disaster risk mitigation, and
(v) To pursue technology transfer to the counterpart personnel as well as to disseminate findings to public, administrator and experts of Kazakhstan and the region.

Goal (long-term objective) of the Project/Study

Goal of the Study will be:

(i) To reduce social, economic and financial impacts to Kazakhstan as well as to Central Asia and the Caucasus countries from potential future earthquakes, and
(ii) To enhance capacity of Kazakhstan, and Central Asia and the Caucasus countries for earthquake disaster risk mitigation.

Prospective beneficiaries

Prospective beneficiaries are:

(i) The population in Almaty (in general) especially the vulnerable groups like the poor, persons with handicaps, the elderly, women and children,
(ii) The community administrators or leaders, specifically those involved with disaster management,
(iii) Almaty City Administration, especially agencies responsible for disaster management, and emergency response and relief,
(iv) The National Government Agencies or Departments, particularly those responsible for disaster management, and emergency response and relief,
(v) Research institutes who focus on disaster risk mitigation,
(vi) The revenue-generating instrumentalities of government and the business sector, including those with investment interests in the country, and
(vii) Above mentioned sectors of Central Asia and the Caucasus countries.

(5) Desirable or scheduled time of the commencement of the Project/Study

September 2006

(6) Expected funding source and/or assistance (including external origin)

Japan International Cooperation Agency (JICA)

(7) Other relevant projects, if any

Under a grant by the Government of Japan through its JICA's technical assistance programme, "the Mini-Project-Type Technical Cooperation for Continuation and Improvement of the Seismological Monitoring System for Earthquake Preparedness and Risk assessment in the Region of Almaty City in the Republic of Kazakhstan" was conducted between 2000 and 2003.

The project "Kazakhstan Natural Disaster Preparedness Plan (2001)" was carried out with the funding of UNDP to reduce the number of significant gaps disaster preparedness policy and planning in Republic of Kazakhstan,