

**MINUTES OF MEETING
BETWEEN
JAPANESE TERMINAL EVALUATION TEAM
AND
AUTHORITIES CONCERNED OF THE ISLAMIC REPUBLIC OF IRAN
ON JAPANESE TECHNICAL COOPERATION PROJECT
FOR
THE ESTABLISHMENT OF EMERGENCY RESPONSE PLAN
FOR THE FIRST 72 HOURS AFTER AN EARTHQUAKE**

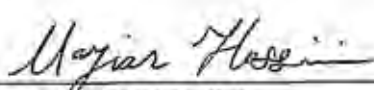
Tehran, January 30th, 2010



Mr. Kazuo SUDO

Leader

Japanese Terminal Evaluation Team
Japan International Cooperation Agency
(JICA)



Dr. Maziar HOSSEINI

President

Tehran Disaster Mitigation and
Management Organization
(TDMMO)

The Japanese Terminal Evaluation Team, organized by the Japan International Cooperation Agency (hereinafter referred to as JICA) and headed by Mr. Kazuo SUDO visited the Islamic Republic of Iran (hereinafter referred to as Iran) from January 15th to January 30th, 2010 for the purpose of conducting the joint terminal evaluation on "the Project on the Establishment of the Emergency Response Plan for the First 72 Hours after an Earthquake" in the Islamic Republic of Iran (hereinafter referred to as the Project). During its stay in the Islamic Republic of Iran, the Japanese Terminal Evaluation team conducted a field study and had a series of discussions to exchange their views and opinions with people concerned on the achievements of the Project.

The Iranian Terminal Evaluation Team, which consists of three experts of the International Institute for Earthquake Engineering and Seismology, was also assigned by Tehran Disaster Mitigation and Management Organization (hereinafter referred to as TDMMO) for the purpose of conducting the joint evaluation with the Japanese Terminal Evaluation Team.

1. Joint Terminal Evaluation Report

After intensive study and discussion on the achievement of the project and its activities, the Joint Evaluation Team of both the Iranian and Japanese sides (hereinafter referred to as the Team) produced and agreed upon the Joint Terminal Evaluation Report attached hereto, which was approved at the Joint Coordination Committee held on January 30, 2010.

2. Recommendation

Five recommendations are made to further improve the emergency response command system of TDMMO and to secure stable and good functions of the QD&LE system at the outbreak of a significantly big earthquake in the Tehran area.

(1) Completion of the operational framework and procedures of emergency response command of ERCC

As the roles and responsibilities for different organizations are defined in the emergency response plan of Tehran and other related laws, the operational framework and procedures of emergency response command should be shared and understood by those organizations more effectively in order to secure the speedy emergency responses of TDMMO and other related organizations.

(2) Improving collaboration and communication among TDMMO and other concerned organizations



At the occurrence of an earthquake, close collaboration and communication among various organizations of both the government and non-government organizations is crucial to quickly and properly respond to the situation. Information and directives of ERCC should be quickly transmitted to respective districts and organizations concerned, and organized rescue and relief operations be properly conducted. Therefore, collaboration and communication among TDMMO and other concerned organizations for emergency responses after an earthquake should be further strengthened.

(3) Continued efforts to further upgrade the QD&LE data

The precision and quality of output data of the QD&LE system depend on those of input data, which ought to be updated from time to time. Some input data such as ones on buildings and on ground model are yet to be collected and fed into the system to upgrade damage and casualty estimation. Those services are entrusted to IIEES on contract. Continued efforts to further upgrade the QD&LE data should be made.

(4) Additional measures to secure an alternative system for seismic data transmission to ERCC

Seismic data are currently transmitted to ERCC through telephone lines. However, there is a high possibility that telephone lines are cut off at an occurrence of a high magnitude of earthquake. Therefore alternative measures to transmit seismic data to ERCC without intermission such as through radio or satellite should be taken at the earliest possible time.

(5) Maintenance and upgrade of seismometer networks and the QD&LE software

There are currently ten (10) seismometers installed around the Tehran Municipality. Needless to say, the QD&LE system should be properly maintained to secure its stable functions and to quickly take necessary measures for rescue and relief operations. It is planned that more seismometers will be installed in the Municipality to get more data from more than 50 locations. Since consulting and maintenance services for seismometer networks and the QD&LE software are outsourced on contract, the next contract need to be concluded as soon as possible.

Attachment: Joint Terminal Evaluation Report

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JOINT EVALUATION REPORT
ON
TERMINAL EVALUATION
ON
JAPANESE TECHNICAL COOPERATION PROJECT
FOR
THE ESTABLISHMENT OF EMERGENCY RESPONSE PLAN
FOR THE FIRST 72 HOURS AFTER AN EARTHQUAKE

Tehran, January 30th, 2010

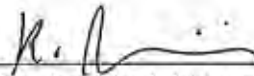


Mr. Kazuo SUDO

Leader

Japanese Terminal Evaluation Team

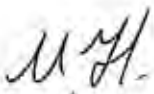
Japan International Cooperation Agency



Dr. Kambod Amini Hosseini

Director of Risk Management Research
Center

International Institute of Earthquake
Engineering and Seismology



ATTACHMENT

JOINT EVALUATION REPORT
ON JAPANESE TECHNICAL COOPERATION
FOR
PROJECT ON
THE ESTABLISHMENT OF EMERGENCY RESPONSE PLAN
FOR THE FIRST 72 HOURS AFTER AN EARTHQUAKE
IN THE ISLAMIC REPUBLIC OF IRAN

January 2010

LIST OF ABBREVIATIONS

DES	Damage Estimation System
DIG	Disaster Imagination Game
ER	Emergency Response
ERP	Emergency Response Plan
GIS	Geographic Information Systems
IIEES	International Institute of Earthquake Engineering and Seismology
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
KNT	Khaje-Nasir University
M/M	Minutes of Meeting
PCM	Project Cycle Management
PDM	Project Design Matrix
PO	Plan of Operations
QD&LE	Quick Damage & Loss Estimation
RCS	Red Crescent Society of Islamic Republic of Iran
RD	Record of Discussion
SNS	Strong Motion Seismometer Network System
TDMMC	Tehran Disaster Mitigation and Management Center
TDMMO	Tehran Disaster Mitigation and Management Organization



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1. Introduction

1-1 Objective of the Evaluation

The evaluation activities were performed with the following four objectives:

1. To confirm the progress and achievements of the Project as per the Project Design Matrix (hereinafter referred to as "PDM") and the Plan of Operations (hereinafter referred to as "PO") of the 'Project on the Establishment of Emergency Response Plan for the First 72 Hours After an Earthquake';
2. To evaluate the results of the Project from the view point of five criteria (relevance, effectiveness, efficiency, impact and sustainability); and,
3. To make recommendations for the Project stakeholders;

1-2 Members of the Joint Evaluation Team

The evaluation and the recommendations on the Project were made by the following members of the Joint Evaluation Team (hereinafter referred to as "the Team").

[Iranian Side]

Name	Job title	Occupation
Dr. Kambod Amini Hosseini	Team Leader	Director of Risk Management Research Center International Institute of Earthquake Engineering and Seismology (IIEES)
Dr. Mohamed Reza Ghaemghamian	Team Member	Manager Urban and Regional Development Department IIEES
Dr. Babak Mansouri	Team Member	Manager Emergency Situation Management Department IIEES



K.O.

[Japanese Side]

Name	Job title	Occupation
Mr. Kazuo Sudo	Leader of Japanese Team	Senior Advisor Japan International Cooperation Agency
Ms. Mamiko Tanaka	Evaluation Planning	Project Officer Disaster Management Division 1, Water Resources and Disaster Management Group, Global Environment Department, JICA
Mr. Akira Hayakawa	Cooperation Planning	Associate Expert Disaster Management Division 2, Water Resources and Disaster Management Group, Global Environment Department, JICA
Ms. Yoshie Yamamoto	Evaluation and Analysis	Researcher Social Development Department Global Link Management



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1-3 Schedule of the Study

The Team conducted documentary reviews, data collection, and interviews from 16th January to 29th January 2010. The following table shows the detailed schedule.

			Team Leader and Evaluation Planning	Evaluation and Analysis
1	14-Jan	Thu		HANEDA 19:50 → 21:10 OSAKA (JL185) OSAKA 23:15
2	15-Jan	Fri		→ 05:55 DUBAI (JL5099) DUBAI 07:55 → 09:35 TEHRAN (EK971)
3	16-Jan	Sat		09:10 JICA Briefing 10:40 JICA Experts (Mr. Kawasaki, Mr. Kobayashi) 11:30 Interview with Mr. Kawasaki 13:30 Interview with Mr. Kobayashi 15:10 Dr. Amini, Project Manager
4	17-Jan	Sun		09:30 Interview with Mr. Kawasaki 11:00 Interview with Mr. Maeda 13:30 Interview with Mr. Imamura 14:50 Interview with Mr. Sabeti
5	18-Jan	Mon		09:20 Interview with Ms. Saleh 13:30 Interview with Ms. Khazaie
6	19-Jan	Tue		09:20 Interview with Mr. Norouzi 10:20 Interview with Mr. Aminaie 11:30 Visit at ERCC 16:00 Interview with Dr. Amini
7	20-Jan	Wed		09:00 Interview with Ms Shaw 10:00 JICA Experts (Mr. Kawasaki, Mr.
8	21-Jan	Thu	HANEDA 19:50 → 21:10 OSAKA (JL185) OSAKA 23:15	Discussion with JICA Experts and Dr. Amini Documentation
9	22-Jan	Fri	→ 05:55 DUBAI (JL5099) DUBAI 07:55 → 09:35 TEHRAN (EK971) 16:30-20:30 Internal Meeting at Hotel	Documentation 16:30-20:30 Internal Meeting at Hotel
10	23-Jan	Sat	09:00-11:00 Meeting with JICA Iran Office 11:30-15:30 Meeting with JICA Experts at TDMMO 16:00-16:40 Interview with Dr. Amini and Mr. Aminaie 18:00-19:00 CC to Dr. Hosseini (President of TDMMO)	
11	24-Jan	Sun	09:00-13:30 Discussion with JICA Experts (Evaluation Team) 10:00-12:30 Discussion with TDMMO (Mr.HAYAKAWA) 14:00-17:00 Site Visit on Municipal District 6 (related to Output 3) in Tehran 15:00-19:00 Discussion with Dr. Amini (about Draft Evaluation Grid)	
12	25-Jan	Mon	09:00-12:00 Internal Meeting 14:00-20:00 Site Visit on Municipal District 17 and 16 in Tehran	
13	26-Jan	Tue	09:30-13:00 Site Visit on Municipal District 7 and 1 in Tehran 14:00-16:00 Internal Meeting 16:20-17:30 Emergency Drill at ERCC 17:45-18:30 Discussion with Dr. Amini	
14	27-Jan	Wed	11:00-13:00 Internal Meeting about JER, M/M 15:00-18:00 Documentation	
15	28-Jan	Thu	09:30-12:30 Finalizing Evaluation Report and M/M 13:30-14:30 Internal Meeting	
16	29-Jan	Fri	Preparation for JCC and Documentation	
17	30-Jan	Sat	09:00- Discussion with TDMMO and Site Visit (Mr.HAYAKAWA) 09:00- Preparation for JCC 15:00-16:30 Joint Coordination Committee and Signing M/M 16:30-16:45 Handing-over ceremony	
18	31-Jan	Sun	AM Report to JICA Iran Office 14:00-15:00 Report to Embassy of Japan TEHRAN 21:20 → 23:50 DUBAI (EK978)	
19	1-Feb	Mon	DUBAI 02:50 → 16:40 OSAKA (JL5090) OSAKA 19:15 → 20:25 HANEDA (JL188)	

2. Outline of the Project

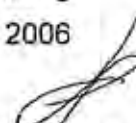
2-1 Background of the Project

Iran is situated on part of the Alp-Himalaya orogenic belt and is known to be part of the youngest and last orogenic regions of the world. The capital city of Tehran is located in the one of the world's most active seismic belts and has sustained repeated substantial damages due to high magnitude earthquake activities happening in some 150 year cycle. Already 170 years have passed since the last one in 1830. It is feared that a major earthquake in Tehran, a megalopolis of over 8 million inhabitants, situated on among active faults, could well lead to considerable loss of life at some 380,000 in the worst case scenario and substantial financial damages particularly due to rapid urbanization started in the 1950s.

In response to the request from the Government of Iran (GOI), Japan International Cooperation Agency (JICA) conducted 'The Study on Seismic Micro-zoning of the Greater Tehran Area in the Islamic Republic of Iran' between 1998 and 2000. The Study concluded that a severe earthquake could cause Tehran approximately 380,000 casualties in the worst case scenario. Considering this damage estimation, the GOI then requested JICA to implement 'The Comprehensive Master Plan Study on Urban Seismic Disaster Prevention and Management for the Greater Tehran Area in the Islamic Republic of Iran' in order to formulate a systematic seismic disaster management plan between August 2002 and August 2004.

Tehran Disaster Mitigation and Management Centre (TDMMC) was established in May 2003 by integrating the Centre for Earthquake and Environmental Studies of Tehran (CEST) and the Tehran Comprehensive Emergency Management Secretariat (SEMS). TDMMC was later reformed to the Tehran Disaster Mitigation and Management Organization (TDMMO) in 2004 whose tasks were to (1) improve level of safety and to reduce risks in Tehran through coordination, research, training programs and executive measures prior to occurrence of disasters; (2) perform measures and necessary coordination to increase efficiency of disaster management system in Tehran and in related organizations at the time of disasters for implementation of rescue and relief operations and also decrease of damages and human and property losses; and, (3) coordinate and perform emergency response with related organizations at the time of disasters. TDMMO had developed an emergency response plan covering 20 priority areas. This plan has overall framework but was found to lack details for full implementation. The Project was proposed by the GOI to improving emergency response capacity in Tehran. JICA dispatched a preparatory study team from April to May 2006. In August 2006, the Record of Discussions on the Project on the Establishment of Emergency Response Plan for the First 72 Hours after an Earthquake was signed.

The Project was commenced with a preparation stage to collect necessary information for detailing out the Project framework and formulate PDM and PO for four months between November 2006



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and March 2007. As a result of the study and discussion with TDMMO, PDM 1 Version 1 and PO 1 were endorsed on March 7, 2007. Subsequently the Stage II of the Project was commenced in July 2007 and will be terminated in March 2010.

Implementation of activities for Output 1 'Emergency response command system is improved' was initially postponed due to on-going discussions on the government's decree on disaster management in Iran. As clarifications of roles and responsibilities of TDMMO were deemed necessary for effective implementation of activities of Output1, the Project had to postpone its implementation. In the meantime TDMMO has taken steps to undertake activities pertaining to Output 1. JICA dispatched a Monitoring Study Team in February 2008 to discuss issues. In the Minutes of Meetings signed on 12th February 2008, it was agreed that TDMMO would be responsible for implementation of Output 1 and Japanese experts would continue to provide technical inputs where TDMMO finds necessary. No modification was made on PDM1 Version 2. JICA dispatched the Mid-Term Review Mission in November 2008 and reactivation of the Output 1 was proposed. The detail plan of activities for Output 1 was then agreed upon in February 2009 and subsequently a new PDM2 was approved.

2-2 Summary of the Project

Project Name	Project on the Establishment of Emergency Response Plan for the First 72 Hours After an Earthquake
Implementing Agency	Tehran Disaster Mitigation and Management Organization (TDMMO)
Date of Signing (R/D)	29 th August 2006
Cooperation Period	October 2006 – March 2010
Cooperation Scheme	Technical Cooperation Project

Overall Goal

Capacity for emergency response for the first 72 hours after an earthquake in Tehran is continually improved.

Project Purpose

The emergency response plan and capacity for the priority activities for the first 72 hours after an earthquake in Tehran are improved.

Outputs

0. PDM and PO for Stage II is established
1. Emergency response command system is improved.

2. Quick Damage and Loss Estimation (QD&LE) system is developed and operated.
3. Emergency evacuation plan and capacity are improved.

Activities

Activities for Output 0

- 0-1 To review and comment on the present conditions on emergency response systems in 72 hours after an earthquake at national and Tehran Municipality levels including related laws, plans, implementation systems and activities, roles and responsibilities, etc.
- 0-2 To conduct related trainings in Japan.
- 0-3 To select priority activities for the emergency response systems (In addition to quick damage and loss evaluation, other activities will be selected at the end of stage 1).
- 0-4 Design the details of priority activities chosen at 0-3.
- 0-5 To review and revise PDM and PO related to the activities for Stage II.

Activities for Output 1

- 1-1 To promote formulation of initial action plans for emergency response through application of Japanese experiences.
- 1-2 To promote establishment of modes and mechanisms to alert, gather and communicate at the time of emergency by learning Japanese systems.
- 1-3 To hold seminars for TDMMO staff members on emergency response command systems that are being used in Japan.
- 1-4 To develop knowledge on operation guidelines of ERCC at normal and emergency conditions through sharing of such guidelines developed in Japan.
- 1-5 To implement trainings for emergency response command system to TDMMO staff.

Activities for Output 2

- 2-1 To design QD&LE system including database and information system, casualty and damage estimation, estimation of necessary responses.
- 2-2 To update related database.
- 2-3 To prepare and install necessary materials and equipments in pilot areas.
- 2-4 To develop QD&LE software.
- 2-5 To develop operational guidelines of the QD&LE system.
- 2-6 To conduct trainings on operation of the QD&LE.
- 2-7 To operate the QD&LE system.

Activities for Output 3

- 3-1 To clarify the evacuation responsibility, authority and management after an earthquake.
- 3-2 To select pilot areas for evacuation drills.



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- 3-3 To develop evacuation map and instruction for the residents in pilot areas both in temporary and regional evacuation places for promoting interaction.
- 3-4 To develop evacuation guideline based on existing conditions.
- 3-5 To implement trainings based on guideline to TDMMO staffs.
- 3-6 To implement evacuation drills in pilot areas with participation of local residents.

2-3 Plan of Operation

The PO is shown in Annex 1. It has been revised by the Project and is being implemented thereby.

3. Methodology of the Terminal Evaluation

3-1 Methodology of Evaluation

In accordance with the JICA Project Evaluation Guideline of January 2004, the terminal evaluation of the Project was conducted in the following process:

Step 1: The Project design is summarized in the Project Design Matrix¹ (PDM) 2 as agreed upon by both Iranian and Japanese sides in March 2009. PDM 2 is attached as Annex 2. Based on the PDM 2, project achievements were assessed vis-à-vis the newly set Objectively Verifiable Indicators. The level of inputs and activities were evaluated in comparison with the output levels. Evaluation Grid and the Evaluation Grid with assessment results are also attached as Annex 3 and Annex 4.

Step 2: Analysis was conducted on the factors that promoted or inhibited the Project's achievement levels including matters relating to both the project design and project implementation process;

Step 3: An assessment of the Project results was conducted based on the five evaluation criteria: "relevance", "effectiveness", "efficiency", "impact", and, "sustainability".

Step 4: Recommendations for the Project stakeholders and lessons learned were formulated.

The definition of the five evaluation criteria² that were applied in the analysis for the Terminal

¹ Within the latest JICA Evaluation Guideline of 2004, the term Logical Framework, or Log Frame has been introduced in place of Project Design Matrix (PDM). However since the Project continued referring to this tool as PDM throughout the Project Period, this Report will use the term PDM. "JICA Project Evaluation Guideline (revised: January 2004)," Office for Evaluation and Post-Project Monitoring, JICA.




Evaluation is given in Table 1 below.

Table 1 : Definition of the Five Evaluation Criteria for the Final Evaluation

Five Evaluation Criteria	Definitions as per the JICA Evaluation Guideline
1. Relevance	Relevance of the Project is reviewed by the validity of the Project Purpose and Overall Goal in connection with the Iranian government's emergency response sector development policy and the needs of the target group and/or ultimate beneficiaries in Iran.
2. Effectiveness	Effectiveness is assessed to what extent the Project has achieved its Project Purpose, clarifying the relationship between the Project Purpose and Outputs.
3. Efficiency	Efficiency of the Project implementation is analysed with emphasis on the relationship between Outputs and Inputs in terms of timing, quality and quantity.
4. Impact	Impact of the Project is assessed in terms of positive/negative, and intended/unintended influence caused by the Project.
5. Sustainability	Sustainability of the Project is assessed in terms of institutional, financial and technical aspects by examining the extent to which the achievements of the Project will be sustained after the Project is completed.

Both quantitative and qualitative data were gathered and utilized for analysis. Data collection methods used for the evaluation were as follows:

- ✓ Literature/Documentation Review;
- ✓ Questionnaires;
- ✓ Key Informant Interviews; and,
- ✓ Direct Observations

The detailed list of the parties consulted by the evaluation teams is included in Annex 5.

3-2 Limitation of the Evaluation Methodology

The Team had the limitation of the evaluation methodology regarding data collection and analysis. That is, definitions, contents and targets of some activities of Output 1 to measure the Project's achievements were not clearly identified and agreed upon till the time of terminal evaluation. Subsequently, there found to be significant gaps on how outcomes of the Output 1 and respective activities should be understood and analyzed between the Iranian side and the Japanese. This in turn has placed the Team in a position to rely heavily on empirical data collected through stakeholder interviews.





4. Record of Project Implementation

The Team reviewed the progress of the Project in accordance with the PDM 2.

4-1 Progress of the Project

Most of the project activities, as specified under the PDM2 and the Project's Plan of Operations, have been implemented. However, some more work needs to be done for Output 1 and Output 2 where delays in implementation occurred. The activities carried out by January 2010 are summarized as follows;

	Activities	Progress
OUTPUT 0: PDM and PO for Stage II is established.		
0-1	To review and comment on the present conditions on emergency response systems in 72 hours after an earthquake at national and Tehran Municipality levels including related laws, plans, implementation systems and activities, roles and responsibilities, etc.	Review was undertaken. This activity was incorporated into Output 1 for implementation during the stage 2.
0-2	To conduct related trainings in Japan.	Counterpart Training in Japan was organized and conducted for 2 representatives from TDMMO.
0-3	To select priority activities for the emergency response systems (In addition to quick damage and loss evaluation, other activities will be selected at the end of stage 1).	Emergency Response Command Center, QD&LE System and Emergency Evacuation were selected as priority activities.
0-4	Design the details of priority activities chosen at 0-3.	Details were prepared and incorporated into PO.
0-5	To review and revise PDM and PO related to the activities for Stage II.	Based on situation analysis during the Stage 1, PDM1 version 1 and PO1 were prepared. They were endorsed and signed by TDMMO and the JICA Monitoring Study Team in March 2007. After inception of Stage 2, specific objective verifiable indicators were identified and thus a revision was made. PDM1 Version2 was prepared in August 2007 and was endorsed by the Japanese Project Team and the TDMMO in August 2007, 5 months later than initially expected.
OUTPUT 1: Emergency response command system is improved.		
1-1	To promote formulation of initial action plans for emergency response through application of Japanese experiences.	A draft initial action plan for emergency response is being drafted with reference to initial action plans of 3 local governments in Japan. This is expected to be further developed and finalized by TDMMO.
1-2	To promote establishment of modes and mechanisms to alert, gather and communicate at the time of emergency by learning Japanese systems.	A draft guideline is being prepared and is expected to be further developed and finalized by TDMMO.
1-3	To hold seminars for TDMMO staff members on emergency response command systems that are being used in Japan.	8 members were trained in Japan in August-September 2009. Dispatch of Japanese experts was planned to conduct training but was not undertaken due to un-availability of suitable local

		government officials.
1-4	To develop knowledge on operation guidelines of ERCC at normal and emergency conditions through sharing of such guidelines developed in Japan.	Operation guidelines are being drafted with reference to those of 3 local governments in Japan and are expected to be further developed by TDMMO.
1-5	To implement trainings for emergency response command system to TDMMO staffs.	Two seminars on emergency response command system was conducted in November 2009 by those who were trained in Japan. One was designed to train solely TDMMO staff members and the other to train both 22 district disaster management officers and TDMMO staffs.
OUTPUT 2: Quick Damage and Loss Estimation (QD&LE) system is developed and operated.		
2-1	To design QD&LE system including database and information system, casualty and damage estimation, estimation of necessary responses.	Development of QD&LE system and its software development was commissioned and completed by Khaje-Nasir (KNT) University. Damage and casualty estimation functions are under preparation by IIEES.
2-2	To update related database.	TDMMO has contracted this activity to IIEES and is not expected to be completed during the Project period.
2-3	To prepare and install necessary materials and equipments in pilot areas.	Seismometer network system connecting 10 pilot stations was developed and was installed by October 2009.
2-4	To develop QD&LE software.	Software development has been contracted out by TDMMO to a team at KNT University. A final version was submitted but still requires some modifications. It is expected to be finalized by end February 2010.
2-5	To develop operational guidelines of the QD&LE system.	The Guideline has been prepared by KNT University in parallel to software development. A final version has been submitted but will be revised in accordance with final modifications being made. It is expected to be finalized by February 2010.
2-6	To conduct trainings on operation of the QD&LE.	Training for QD&LE system operators was conducted both in October/ November 2009 and in January 2010.
2-7	To operate the QD&LE system.	QD&LE system has started its operation in November 2009.
OUTPUT 3: Emergency evacuation plan and capacity are improved.		
3-1	To clarify the evacuation responsibility, authority and management after an earthquake.	All the possible actions during emergency evacuation were identified and organized in chronological order. Responsibilities of organizations and required actions were clarified.
3-2	To select pilot areas for evacuation drills.	Two districts, the northern district of 2 and the southern district of 17, were selected.
3-3	To develop evacuation map and instruction for the residents in pilot areas both in temporary and regional evacuation places for promoting	Evacuation maps were developed for 4 mahalehs including two pilot areas and two additional mahalehs. 15,000 and 10,000 maps were printed

	interaction.	for the pilot area of district 2 and district 17 respectively. 10,000 maps were printed for district 4 while another 12,000 were printed for district 6. Another map is in print and survey and mapping is being undertaken for additional one mahaleh. Therefore, a total of 6 evacuation maps are to be completed by end March 2010. Detailed information and guidance on evacuation and emergency response were identified and were given on the back of the evacuation maps.
3-4	To develop evacuation guideline based on existing conditions.	The guideline was finalized in January 2009 and has already been distributed to district disaster management offices that had conducted evacuation drills.
3-5	To implement trainings based on guideline to TDMMO staffs.	DIG trainings were conducted initially only for TDMMO staffs and then for both TDMMO staffs and district disaster management officers. TDMMO staffs have obtained sufficient skills to facilitate DIG training for community volunteers.
3-6	To implement evacuation drills in pilot areas with participation of local residents.	Evacuation drills with participation of local residents were implemented in the northern district of 2 in December 2008; in the southern district of 17 in February 2009; in the district 4 October 2009; and, in the district 6 in December 2009. TDMMO is taking a strong initiative to plan another drill for district 10 in February 2010.

4-2 Inputs

Inputs to the Project since its inception in October 2006 to December 2009 are as follows:

4.2.1. Japanese Side

a) Experts Dispatched

A total of 14 short-term experts in 14 areas of expertise were assigned for a total of 64.6 months since the inception of the Stage 1 of the Project till December 2009. These short term experts were dispatched in the areas of (1)Chief Advisor; (2) Disaster Risk Management; (3)Emergency Response; (4)Emergency Information and Communication; (5) Seismograph Network; (6)Evacuation and Dissemination (1); (7)Evacuation and Dissemination (2); (8)Community Disaster Management Organizations; (9)Administrative Institutions/Project Design; (10) GIS and Database Management; (11)Damage Estimation; (12)QD&LE System; (13) Evacuation Drill; and, (14)Project Coordinator. The detailed list of Japanese experts is shown in Annex 6.

b) Training Conducted

A total of 10 counterpart personnel received training in Japan.



Name	Period	Training Course Title	Hosting Institution	Job Title
Dr. Maziar Hossseini	2007/02/03 ~2007/2/17 (15 Days)	Individual Training	"National Research Institute for Earth Science and Disaster Prevention" "Disaster Management Section, Hyogo Prefecture" "Fire and Disaster Management Agency" "Cabinet Office, Government of Japan" "Emergency Management Office, City of Yokohama" 16 Institutions in Total	President
Dr. Kambod Amini Hossseini				Chief Advisor
Mr. Alireza SABETI	2009/08/25 ~ 2009/09/08 (15Days)	Disaster Management Drill	"Japan International Cooperation Agency Hyogo International Centre", "Training Coordinator(Persian Translator):Japan International Cooperation Center"	Coordinator of JICA Project
Mr. Ali EMAM				Vice Presiden
Mr. Amirabbas REZAEIBANHANG				Manager/ Presidential Office
Mr. Abdolreza AMINAIE				Manager/ Basic Projects, Mitigation Deputy
Mr. Rahim NOROUZI				Expert/ Mitigation Deputy
Mr. Mehdi KHOSRAVANI				Deputy Head/ District Disaster Management, Tehran
Mr. Alireza PANAHI				Head/ Security Office
Mr. Mojtaba NAGHAVI				Expert/ Mitigation Deputy

c) Equipment Provided

Equipment including 10 seismometers valued at 27.6 million Japanese yen in total was provided for the project activities by January 2010. The detailed list of equipment provided is shown in Annex 7.

d) Operational Expenses

By the end of December 2009 a total of JPN 16.6 million yen was provided for the local operational expenses of the Project by the Japanese side. The details of the operational expenses are shown in Annex 8.

4.2.2 Iranian Side

a) Appointment of Counterpart Personnel

A total of 35 at TDMMO were appointed as counterparts since the inception of the Project. At the time of terminal evaluation there were 21 counterparts remaining active. The list of the counterpart personnel as of December 2009 is attached as Annex 9.

b) Provision of Facilities for Project Operations

The Iranian side secured an office space within the TDMMO for the Japanese experts with necessary facilities and equipment necessary for project activities.

c) Cost-sharing of Operational Expenses

Operational cost-sharing with the Iranian side has been promoted since the beginning of the Project. TDMMO allocated US764,000 dollars for the Iranian fiscal year 2008 (between March 2008-March 2009) and another US1.3 million dollars for FY2009, totaling US2.1 million dollars. The Team believes that TDMMO has allocated sufficient level of budget given the fact that it covered costs for the Project implementation such as construction of stations for 10 seismometers, contract for

designing and operation of QD&LE system and for software development, and personnel costs of contractual staff members. The details of the operational expenses shared by Iranian side are shown in Annex 10.

4-3 Achievement of Output

According to the indicators on PDM 2, the achievements of Outputs are as follows:

3.3.1. Achievement of Output 0

Output 0	Objectively Verifiable Indicators
PDM and PO for Stage II is established	1) Final version of PDM1 and PO1 is approved by March 2007.

Output 0 was achieved during the Stage 1. Based on situation analysis during the Stage 1, PDM1 version 1 and PO1 were prepared. They were endorsed and signed by TDMMO and the JICA Monitoring Study Team in March 2007. However, all the specific Objectively Verifiable Indicators were not sufficiently identified at that time and later added after the inception of the Stage 2. Final versions of both PDM1 Version2 and PO2 were both prepared and were endorsed in August 2007, 5 months later than initially expected.

3.3.2. Achievement of Output 1

Output 1	Objectively Verifiable Indicators
Emergency response command system is improved.	<ol style="list-style-type: none"> 1) TDMMO staffs are trained on application of the Japanese ERCS models. 2) Operational framework of ERCC is proposed by the end of the Project. 3) Guidelines of emergency communication (alerting, gathering and communication) are outlined.

For Output 1, the achievement level is limited compared to other Outputs, although the scope of the activities has been formulated and agreed upon jointly by the Iranian and Japanese sides. The Team learned that an operational framework of ERCC and the guidelines of emergency communication are in their preliminary stages of development by Iranian side and require more groundwork to work out the strategies and necessary components based on reference materials on Japanese models provided to TDMMO.

8 officials from TDMMO and the District Disaster Management Office participated in the training in Japan in August-September 2009. Upon return, two seminars were conducted in November 2009 (one for internal and the other for both TDMMO staff members and the district disaster management offices) for sharing knowledge on the Japanese Emergency Response Command System (ERCS) models. TDMMO is to continuously conduct bi-monthly training with the district disaster

management offices.

While operational framework of Emergency Response Command Centres (ERCC) in Japan was not made available to TDMMO, some descriptions and brief outlines of ERCCs were provided. TDMMO is in the process of coming up with an operational framework for the newly constructed ERCC and is expected to be further developed and finalized by TDMMO. Moreover, TDMMO is in the process of developing guidelines of emergency communication in accordance with reference materials provided. This is also expected to be further developed and finalized by TDMMO.

The Team finds one inhibiting factor which may have undermined the achievement of this Output 1. While there was an agreement on detailed plan of activities for Output 1 in February 2009, some ambiguities on the products of Output 1 continued to exist till the time of the final evaluation.

3.3.3. Achievement of Output 2

Output 2	Objectively Verifiable Indicators
Quick Damage and Loss Estimation (QD&LE) system is developed and operated.	<ol style="list-style-type: none">1) Prompt and reliable seismic data is transmitted from 10 seismometer stations.2) Reliability of quick damage and lost estimations software and data is improved.3) The operation and maintenance of developed QD&LE system is institutionalized at TDMMO.

The achievement level of Output 2 is high but still needs to be further strengthened by completing some remaining activities.

After installation in November 2009, there was once an earthquake on 16th January 2010 at 760 km away from Tehran and its data was promptly transmitted from all ten seismometers. Operators of the ERCC are conducting daily monitoring of data. Therefore, this indicator has already been achieved.

As there was no specific definition and indicator set to measure 'reliability' of the quick damage and lost estimations, a level of achievement of the indicator 'Reliability of quick damage and lost estimations software and data is improved' could not be assessed. However, reliability of QD&LE system would further be strengthened once on-going efforts to revise casualty and damage estimation functions and the ground model by IIEES. Continued efforts are to be made to update database by IIEES in addition to already updated data on population and realignment of mahaleh boundaries.



Development of QD&LE system was commissioned to the Team from Khaje-Nasir (KNT) University and its system design and software have been developed and revised. Its 3rd and a final version is now being tested and modified. There would be 6 months service grace period which will then be followed by service and support contract between TDMMO and KNT University.

3.3.4. Achievement of Output 3

Output 3	Objectively Verifiable Indicators
Emergency evacuation plan and capacity are improved.	1) By the end of the Project evacuation map for at least another one mahaleh is developed through application of the same techniques deployed by the Project. 2) At least four (4) evacuation drills are implemented in pilot areas utilizing developed maps and the guideline by the end of the Project.

For Output 3, the achievement level was found to be very high due to the following:

Evacuation maps for selected two districts were developed. TDMMO then took an initiative to print and distribute evacuation maps to residents in these 2 pilot mahalehs. Contents and quality of information added onto the evacuation maps were more upgraded than initially planned. Information such as on evacuation, first-aid, desirable responses at the time of earthquake was developed and printed in the back of respective maps. TDMMO has already developed and distributed maps for additional two districts through application of the steps and techniques developed by the Project. Another one is being finalized by February 2009 and the other is being developed. By the end of the Project, 6 evacuation maps are to be developed. The Team finds this achievement quite excellent as it is twice the number of the intended target.

Two drills for evacuation utilizing Disaster Imagination Game (DIG) were conducted for two pilot mahalehs in July 2008 for TDMMO staff and actual evacuation drills were conducted both in December 2008 and February 2009. Two (2) other drills utilizing DIG were conducted. TDMMO demonstrated outstanding initiative to conduct other two (2) actual evacuation drills in 2009 and the other is to be undertaken in February 2010. Therefore, by the end of the Project, a total of eight (8) drills for evacuation were conducted, which is twice the level of the target set at 4.

Moreover, the Team confirmed that there were additional data that demonstrate achievement of this Output:

1. In addition to initially intended 8 TDMMO staff members, disaster management officers from all the 22 districts of Tehran Municipality have been trained on DIG;
2. The very first emergency evacuation guideline for Iran was developed and finalized by



January 2009;

3. Information printed on the back of evacuation maps to inform people on first-aid, evacuation, preparedness, mutual help at the time of earthquake were found useful. 50,000 were printed for distribution to houses, schools, mosques and other organizations; and,
4. DAWAM groups have been mobilized for development of evacuation maps and drills. Evacuation maps were distributed by DAWAM groups and awareness level of the community on disaster management has increased.

4-4 Achievement of the Project Purpose

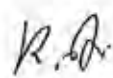
Project Purpose	Objectively Verifiable Indicators
The emergency response plan and capacity for the priority activities for the first 72 hours after an earthquake in Tehran are improved.	<ol style="list-style-type: none">1) 1. QD&LE system is incorporated into the overall framework of emergency response command system.2) Drills for operation of emergency response command system are implemented utilizing improved version of QD&LE software at least once by the end of the Project.3) Emergency evacuation system is institutionalized at least in two pilot districts.

As of January 2010, the Team concludes that the Project Purpose has been achieved to a reasonable extent.

The newly developed QD&LE system has already been set-up and put into operation at the Tehran Disaster Management Headquarter which was officially inaugurated in December 2009. While the extent and the details of the whole emergency command system being developed at the Headquarter are not made available to the Japanese side, the Team confirmed that the QD&LE system is being considered as an integral part of the Headquarter by the TDMMO.

Revisions of the QD&LE software have been repeatedly done. Khaje-Nasir University, a contractor, submitted its 3rd version. A drill for operation of emergency response command system was conducted in November 2009 utilizing this 3rd version. A few glitches were found not only through this drill but other series of drills of QD&LE system and now are being modified. Software is going to be finalized by February 2010.

Development of evacuation maps and implementation of evacuation drills were undertaken for 2 pilot mahalehs by February 2009 when joint activities for Output 3 were completed. Since then, TDMMO has taken outstanding initiatives to prepare maps and conduct drills. Evacuation drills have already been undertaken for two more mahalehs; another is to be undertaken for another



mahaleh in February 2010. These initiatives have been demonstrated mainly by staff members of the Education and Public Participation Deputy in conjunction with its another project to mobilize volunteers for disaster management. These activities to develop maps and conduct of evacuation drills might be transferred to the Deputy of Preparedness for further integration into the mainstream preparedness activities. Whether this in fact is to be taken place or not, the Team confirms that the TDMMO has been fully equipped with technical skills to further develop these activities.

4-5 Project Implementation Process

(1) Promoting factors in Project Implementation Process

- ✓ Strong leadership and commitment at the level of the President and of the counterparts were demonstrated by TDMMO. Some of the cases that demonstrates TDMMO's ownership are: (1) Provision of necessary equipment for QD&LE system in the ERCC; (2) Staff members with specific skill sets were recruited for the Project implementation and assigned as found necessary; (3) Construction of 10 stations for seismometers was done and paid by TDMMO; and, (4) Printing and distributions of evacuation maps were funded and undertaken by TDMMO.
- ✓ Good relationship between the Japanese experts and the counterparts were established. While there is a limitation on periods of time when respective experts could stay in Iran, a level of communication and trust between the Japanese experts and Iranian counterparts were found good. Most of the Japanese experts have worked with TDMMO in prior to the Project (i.e. Micro-Zoning Study, Master Plan) and therefore had already established sound working relationships before the Project commenced.

(2) Inhibiting factors in Project Implementation Process;

- ✓ Technology transfer was undertaken through project implementation, training in Iran and Japan, on-the-job training and other technical training. As for Output 1, disaster management officers from Japanese local governments were initially planned to transfer first-hand knowledge and skills on operation of emergency response command systems. However, this modality of technical transfer was not realized due to unavailability of personnel. This could have limited direct and first-hand technology transfer to the Iranian counterparts.
- ✓ Joint Coordination Committee (JCC) mechanism that was agreed upon in the Record of Discussions of 29th April, 2006, was activated on 17th December 2007. JCC was designed to: (1) To formulate the annual work-plan of the Project; (2) To review the progress of the annual work-plan; (3) To review and exchange opinions on major issues that may arise during the implementation of the Project; and (4) To discuss any other issues pertinent to smooth implementation of the Project. Another 4 JCCs were convened on 4th March 2008; 30th November 2008; 22nd February 2009; and, 10th

November 2009. The last JCC is to be held on 30th January 2010. Currently JCC is providing a platform of discussion mainly on technical matters.

- ✓ Output 1 was virtually suspended since the start of the State 2 till March 2010.
- ✓ Project monitoring has been done on respective activities and outputs. However, there should have been a platform for better communication and management to strengthen combined outcome levels of the Project and to create better linkages among the Outputs.

5. Evaluation Results by the Five Evaluation Criteria

Followings are the summaries of the evaluation results based on five evaluation criteria described in 3-1.

5-1 Relevance

The Project's relevance is excellent vis-à-vis the needs of Iran and the JICA's Country Assistance Program.

Iran is situated on part of the Alp-Himalaya orogenic belt and is known to be part of the youngest and last orogenic regions of the world. The capital city of Tehran is located in the one of the world's most active seismic belts and has sustained repeated substantial damages due to high magnitude earthquake activities happening in some 150 year cycle. Already 170 years have passed since the last one in 1830. It is feared that a major earthquake in Tehran, a megalopolis of over 8 million inhabitants, situated on among active faults, could well lead to considerable loss of life at 380,000 in the worst case scenario and substantial financial damages particularly due to rapid urbanization started in the 1950s. Therefore, improvement of the emergency response plan and capacity for the priority activities for the first 72 hours after an earthquake in Tehran needed to be given urgent attentions.

While there is no policy document available to the Team on national emergency response to disasters including earthquakes, strong commitment of the Tehran Municipality to improve capacities to plan and handle emergency response for imminent earthquake could be easily witnessed through newspaper articles and rapid expansion of TDMMO's structure and seemingly sufficient budget allocation. Relevance was also found high as the Project Purpose is in line with one of six priority sector of the JICA's Country Assistance Program developed in July 2007.

5-2 Effectiveness

Effectiveness of the Project was found to be good. The Project Purpose "The emergency response plan and capacity for the priority activities for the first 72 hours after an earthquake in Tehran are improved" has been achieved to a good extent verified with sound achievement levels of

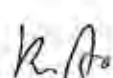
outputs, and of Output 3 in particular. Contributing factors identified by the Team were: (1) Strong leadership at the level of the President; (2) Ample budget allocation; (3) Both the Project Director and the Project Manager being specialists of seismology related fields'; (4) Recruitment and assign of counterparts with specific skill sets required for the Project implementation; (5) High level of commitment and willingness among the Iran counterparts to learn new technical skills; (6) High regards for Japanese technologies on disaster management ; and (7) Provision of equipment necessary to establish seismometers networks with special specifications for Tehran.

Inhibiting factors which may have undermined the achievement of the Project Purpose were: (1) Implementation of activities for Output 1 'Emergency response command system is improved' was initially postponed due to on-going discussions on the government's decree on disaster management in Iran. As clarifications of roles and responsibilities of TDMMO were deemed necessary for effective implementation of activities of Output1, the Project had to postpone its implementation. While the Output 1 was reactivated in February 2009, its implementation was primarily in the hands of TDMMO and the roles expected from the Japanese side was limited to provision of reference materials and counterpart training in Japan; and, (2) Presence of the Project Manager at the TDMMO was limited to thrice-a-week.

5-3 Efficiency

Overall, the level of efficiency of the Project was found to be good with regards to its input and the current achievement level of Outputs. It is commendable to note the TDMMO's concerted efforts to assign counterparts to fill the human resource gap at TDMMO and secure funds to undertake activities beyond the Project's design. While the Team acknowledged the efforts of TDMMO to assign skilled professionals for the Project, relatively high turn-over of skilled and motivated counterparts was witnessed. Whenever a new personnel gets assigned, training needed to be repeated due to limited technical transfers among the Iranian counterparts. Further efforts should have been made to transfer and institutionalize skills in the organization.

As for Japanese inputs, Japanese experts were continued to be dispatched for Output 1 which was effectively suspended. Assignment's duration and combination of expertise of Japanese experts need to be further clarified and coordinated in order to improve efficiency. Due to difficulties in procuring equipment to Iran, delays in procurement and full operationalization of seismometer network by 15 months has limited the time available to stabilize the QD&LE system and hindered reinforcement of applications of skills and knowledge to troubleshoot. As for the training in Japan, timing should have been planned better to allow sufficient time to contribute its learning to the Project implementation. Participation of female counterparts in the training in Japan was not realized.



5-4 Impact

Overall Goal:	Objectively Verifiable Indicators
Capacity for emergency response for the first 72 hours after an earthquake in Tehran is continually improved.	<ol style="list-style-type: none"> 1) Emergency response planning framework for other priority areas mandated for TDMMO is prepared. 2) Emergency Response Command Center (ERCC) is made fully functional by TDMMO. 3) Evacuation maps are prepared and distributed to the residents for at least another five (5) mahalehs. 4) QD&LE system is updated and maintained by TDMMO.

The impact of the Project to the Overall Goal was confirmed excellent. The Team recognized that the Project has substantive direct and indirect impacts on continuous improvement of capacity for emergency response for the first 72 hours after an earthquake in Tehran. All the four indicators to measure the achievement level of the Overall Goal are highly likely to be achieved.

In December 2009, Tehran Disaster Management Headquarter (Setad) or ERCC, was officially inaugurated. While there are some more work to be done to make the Headquarter functional with assignment of required personnel, the Headquarter is expected to be fully functional in relatively short time period. Therefore, it is highly likely that both indicator 1 and indicator 2 will be achieved.

Evacuation maps were prepared for 2 pilot mahalehs by February 2009. Since then, TDMMO has taken outstanding initiatives to prepare maps for additional 4 mahales and 2 of which have already been completed. Another one is in its final stage and the other is in its survey stage. Since TDMMO has already planned to expand this activity to other mahalehs, it is highly likely that a target of additional five mahalehs will be achieved even in 2010.

The newly developed QD&LE system has already been incorporated into the integrated emergency response system at the Tehran Disaster Management Headquarter in the TDMMO's compound. While the extent and the details of the system being developed at the Headquarter are not made available to the Japanese side, the QD&LE system is being considered as an integral part of the Centre by the TDMMO. Preparation of contracts to maintain ten seismometers and the damage estimation system are being developed and are expected to be finalized by the end of the Project.

With regards to any unintended positive impacts emerging from Project implementation, some positive impacts by the Project activities have been observed:

- (1) Ever first evacuation maps and evacuation guidelines were produced. TDMMO has taken strong initiatives to print evacuation maps and distribute to each households in 4

mahalehs.

- (2) The other two evacuation maps are being developed and evacuation drills are being planned;
- (3) Strengthened relationships with other research and academic institutions like KNT University and IIEES; and,
- (4) Knowledge and skills obtained by Iranian counterparts are being transferred to students at academic institutions.

No unintended negative impacts have been reported so far.

5-5 Sustainability

Sustainability of the Project results, after the completion of the Project, is good but needs to be further strengthened.

5.5.1. Organizational Aspect

From the organizational point of view, TDMMO is expected to continue working on development of emergency response plans, ERCC guidelines, ERCS and etc to fulfill its mandate. However, its institutional mechanism and a detailed plan were not made available to the Team.

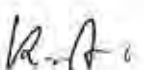
5.5.2. Financial Aspect

High level of financial commitment has been demonstrated by TDMMO throughout the Project term. While budget papers and future plan of TDMMO were not made available to the Team, it is highly likely that the TDMMO will continue to provide sufficient level of funds to the activities undertaken by the Project.

5.5.3. Technical Aspect

Counterparts who have been assigned and trained to respective activities of Output 2 and 3 have demonstrated sufficient level of knowledge and skills to sustain activities on their own. Counterparts for Output 2 remain to have vital roles in training system operators at ERCC and conduct close follow-ups for actual application of skills and knowledge. As for Output 3, TDMMO staff members have been trained as master of trainers to train district disaster management officers in 22 districts. The Team acknowledges that both KNT University and IIEES would continue to assist TDMMO on technical issues, however, high turn-over of staff members of TDMMO combined with many counterparts are on part-time or short contract might affect technical sustainability. Enhancing institutional memories and continuity by establishing mechanisms to internalize technical skills and knowledge and train staff members needs to be strengthened.

Equipment and devices have been utilized by the counterparts. In order to ensure timely and



proper maintenance be undertaken, TDMMO is in the process to draw up two service contracts (KNT University for maintenance of QD&LE system software and Padyab for maintenance of seismometer network) .

6. Conclusion of Evaluation

The Project has achieved its Project Purpose to a good degree. Most activities have been implemented as described in PDM2 and most of quantitative and qualitative performance indicators are being achieved. However, several activities need yet to be continued to gain higher outcome till the end of the Project in March 2010.

The Project's relevance in the overall context of disaster management and emergency response is high as the TDMMO remains to be the organization mandated to plan, implement and supervise emergency responses for Tehran at the time of earthquake. Due to the outstanding ownership of the Project by the Iranian side, the Project's sustainability is good. On the other hand, its effectiveness and efficiency may have been enhanced further if the Project's design and strategies had been more carefully considered by both sides during the planning and implementation stages. It should be noted that progress needs to be further made for Output 1 to establish emergency response command systems at TDMMO.

Given the evaluation results on the Project, the Project should be terminated in March 2010 as planned.

7. Recommendation of the Evaluation

Five recommendations are made to further improve the emergency response command system of TDMMO and to secure stable and good functions of the QD&LE system at the outbreak of a significantly big earthquake in the Tehran area.

(1) Completion of the operational framework and procedures of emergency response command of ERCC

As the roles and responsibilities for different organizations are defined in the emergency response plan of Tehran and other related laws, the operational framework and procedures of emergency response command should be shared and understood by those organizations more effectively in order to secure the speedy emergency responses of TDMMO and other related organizations.

(2) Improving collaboration and communication among TDMMO and other concerned organizations

At the occurrence of an earthquake, close collaboration and communication among various



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organizations of both the government and non-government organizations is crucial to quickly and properly respond to the situation. Information and directives of ERCC should be quickly transmitted to respective districts and organizations concerned, and organized rescue and relief operations be properly conducted. Therefore, collaboration and communication among TDMMO and other concerned organizations for emergency responses after an earthquake should be further strengthened.

(3) Continued efforts to further upgrade the QD&LE data

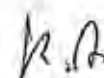
The precision and quality of output data of the QD&LE system depend on those of input data, which ought to be updated from time to time. Some input data such as ones on buildings and on ground model are yet to be collected and fed into the system to upgrade damage and casualty estimation. Those services are entrusted to IIEES on contract. Continued efforts to further upgrade the QD&LE data should be made.

(4) Additional measures to secure an alternative system for seismic data transmission to ERCC

Seismic data are currently transmitted to ERCC through telephone lines. However, there is a high possibility that telephone lines are cut off at an occurrence of a high magnitude of earthquake. Therefore alternative measures to transmit seismic data to ERCC without intermission such as through radio or satellite should be taken at the earliest possible time.

(5) Maintenance and upgrade of seismometer networks and the QD&LE software

There are currently ten (10) seismometers installed around the Tehran Municipality. Needless to say, the QD&LE system should be properly maintained to secure its stable functions and to quickly take necessary measures for rescue and relief operations. It is planned that more seismometers will be installed in the Municipality to get more data from more than 50 locations. Since consulting and maintenance services for seismometer networks and the QD&LE software are outsourced on contract, the next contract need to be concluded as soon as possible.



Annex - 1 Plan of Operations (PO)

February 23, 2009

Plan of Activities for each Outputs														Remarks		
Activities		2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1-1	To promote formulation of initial action plans for emergency response through application of Japanese guideline															Japanese side will provide appropriate guidelines to Iranian side
1-1-1	To select appropriate guidelines from Japan															Local disaster management plan from Tokyo, Hyogo and Hiroshima prefectural governments and Yokohama City government.
1-1-2	To get approval of translation from local governments in Japan															Tokyo, Hyogo and Hiroshima prefectural governments and Yokohama City government
1-1-3	Translation of the guidelines to Farsi															Work in Tehran
1-1-4	Explanation of Guideline															Explanation of guideline by the Japanese expert
1-2	To promote establishment of modes and mechanisms to alert, gather and communicate at the time of emergency by learning Japanese system															Japanese side will provide appropriate guidelines to Iranian side.
1-2-1	To select appropriate guidelines from Japan															Local disaster management plan from Tokyo, Hyogo and Hiroshima prefectural governments and Yokohama City government.
1-2-2	To get approval of translation from local governments in Japan															Tokyo, Hyogo and Hiroshima prefectural governments and Yokohama City government
1-2-3	Translation of the guidelines to Farsi															Work in Tehran
1-2-4	Explanation of Guideline															Explanation of guideline by the Japanese expert
1-3	To hold seminars for TDMMO staff members on emergency response command systems that are being used in Japan															Detailed training course will be determined by JICA Tokyo.
1-3-1	To hold C/P training in Japan															Trainee will attend training programs, which are done by various governments in Japan near Japanese disaster management day of Sep 1.
1-3-2	Dispatch Japanese expert and professor to Tehran to have a seminar															One week Operation of ERCC Lesson learned from Hanshin-Awaji great earthquake and Niigata Earthquake Advanced improvement of QD&LE system in Japan
1-4	To develop knowledge on operation guidelines of ERCC at normal and emergency conditions through sharing of such guideline developed in Japan															Operational guideline is not open to public. Confirm availability of guideline to Tokyo and Hyogo prefectural governments and Yokohama City government.
1-4-1	To get approval of translation from local governments in Japan															same as above
1-4-2	To select appropriate guidelines from Japan															same as above
1-4-3	Translation of the guidelines to Farsi															same as above
1-4-4	Explanation of Guideline															same as above
1-5	To implement training for emergency response command system to TDMMO staffs															Training workshop will be held on November this year
1-5-1	TDMMO staff who attend the training trains other TDMMO staffs															same as above
1-5-2	Japanese Expert presentation															same as above

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Items	Japanese Fiscal Year 2006												J. F. Y. 2007												J. F. Y. 2008												J. F. Y. 2009												2010		
	C. Y. 2007												C. Y. 2008												C. Y. 2009												C. Y. 2010														
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3			
Project Period	Stage 1												Stage 2																																						
Activities																																																			
Activity 0																																																			
0-1 To review and comment on the present conditions on emergency response systems in 72 hours after an earthquake at national and Tehran Municipality levels including related laws, plans, implementation systems and activities, roles and responsibilities, etc.																																																			
0-2 To conduct related trainings in Japan																																																			
0-3 To select priority activities for the emergency response systems (In addition to quick damage and loss evaluation, other activities will be selected at the end of stage 1).																																																			
0-4 Design the details of priority activities chosen at 0-3.																																																			
0-5 To review and revise PDM and PO related to the activities for Stage II																																																			
Activity 1																																																			
1-1 To clarify roles and responsibilities of related organizations in emergency response to promote their interactions and coordination.																																																			
1-2 To review and comment on the existing architectural plan of ERCC.																																																			
1-3 To formulate plan for institution and equipment installation of ERCC.																																																			
1-4 To formulate initial action plan for emergency response.																																																			
1-5 To develop the potential methods of alerting, gathering and communication at the time of the emergency.																																																			
1-6 To hold seminars for related organizations on emergency response command system.																																																			
1-7 To develop operation guideline of ERCC at normal and emergency conditions.																																																			
1-8 To implement trainings for emergency response command system to TDMMO staffs.																																																			
1-9 To implement drills for emergency response command system with participation of related organizations.																																																			

Annex - 2 PDM 2

PROJECT DESIGN MATRIX (PDM)

Version 2

Date: 22 February 2009

Project Name: Project on the Establishment of Emergency Response Plan for the first 72 hours after an earthquake
Period: 2006.10 – 2010.3
Implementing Agency: Tehran Disaster Mitigation and Management Organization (TDMMO)
Target Area: Tehran municipality
Target Group: TDMMO staffs, staffs of the related organizations on emergency response, residents in pilot areas

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal Capacity for emergency response for the first 72 hours after an earthquake in Tehran is continually improved.</p>	<ol style="list-style-type: none"> 1- Emergency response planning framework for other priority areas mandated for TDMMO is prepared. 2- Emergency Response Command Center (ERCC) is made fully functional by TDMMO. 3- Evacuation maps are prepared and distributed to the residents for at least another five (5) mahalehs. 4- QD&LE system is updated and maintained by TDMMO. 	<ol style="list-style-type: none"> 1- Interview with TDMMO experts 2- Activity reports 3- Interview with TDMMO experts and district officers 4- Updated version of QD&LE system 	<p>- Disaster management institution and policy of Tehran Municipality are not fundamentally changed.</p>
<p>Project Purpose The emergency response plan and capacity for the priority activities for the first 72 hours after an earthquake in Tehran are improved.</p>	<ol style="list-style-type: none"> 1- QD&LE system is incorporated into the overall framework of emergency response command system. 2- Drills for operation of emergency response command system are implemented utilizing improved version of QD&LE software at least once by the end of the Project. 3- Emergency evacuation system is institutionalized at least in two pilot districts. 	<ol style="list-style-type: none"> 1- Interview with TDMMO 2- Activity reports 3- Activity reports/ Interview with TDMMO and district officers 	<p>- Disaster management institution and policy of Tehran Municipality are not fundamentally changed.</p>

Outputs		Important Assumptions	
Output 0 PDM and PO for Stage II is established	1- Final version of PDM1 and PO1 is approved by March 2007.	1- Report from the Project monitoring team	- Disaster management institution and policy of Tehran Municipality are not fundamentally changed.
Output 1 Emergency response command system is improved.	1- TDMMO staffs are trained on application of the Japanese ERCS models. 2- Operational framework of ERCC is proposed by the end of the Project. 3- Guidelines of emergency communication (alerting, gathering and communication) are outlined	1- Activity report 2- Activity report/ Proposal on ERCC 3- Draft guidelines of emergency communication	
Output 2 Quick Damage and Loss Estimation (QD&LE) system is developed and operated.	1- Prompt and reliable seismic data is transmitted from 10 seismometer stations. 2- Reliability of quick damage and loss estimations software and data is improved. 3- The operation and maintenance of developed QD&LE system is institutionalized at TDMMO.	1- Activity report 2- Activity report/ Interviews with TDMMO experts 3- Operational guidelines for QD&LE system/ Activity report/ Interviews with TDMMO experts	
Output 3 Emergency evacuation plan and capacity are improved.	1- By the end of the Project evacuation map for at least another one mahaleh is developed through application of the same techniques deployed by the Project. 2- At least four (4) evacuation drills are implemented in pilot areas utilizing developed maps and the guideline by the end of the Project.	1- Evacuation map(s) 2- Activity report on evacuation drills	
Activities	Inputs		Important Assumptions
Activity 0 0-1 To review and comment on the present conditions on emergency response systems in 72 hours after an earthquake at national and Tehran Municipality levels including related laws, plans, implementation systems and activities, roles and responsibilities, etc. 0-2 To conduct related trainings in Japan. 0-3 To select priority activities for the emergency response systems (In addition to quick damage and loss evaluation, other activities will be selected at the end of stage 1). 0-4 Design the details of priority activities chosen at 0-3. 0-5 To review and revise PDM and PO related to the activities for Stage II.	Iranian side 1. Personnel - Project Director - Project Manager - Counterparts - Administrative officials 2. Facility and equipment - Project office 3. Others - Joint Coordinating Committee - Other Committees	Japanese side 1. Expert - Disaster Management - Emergency Response - Disaster Information Systems - Quick Damage and Loss Estimation - Community Disaster Management Organization - Administrative Institutions/ Project design 2. Provision of equipment 3. Counterpart training in Japan 4. Others - Advisory Committee	- Appropriate number of counterparts is assigned from TDMMO. - Project implementation budget is ensured - Relationship between related organizations is maintained. Pre-conditions - The staffs of TDMMO are assigned to the Project based on formal administrative order

Activities	Inputs	Japanese side	Important Assumptions
<p>Activity 1</p> <p>1-1 To promote formulation of initial action plans for emergency response through application of Japanese experiences.</p> <p>1-2 To promote establishment of modes and mechanisms to alert, gather and communicate at the time of emergency by learning Japanese systems.</p> <p>1-3 To hold seminars for TDMMO staff members on emergency response command systems that are being used in Japan.</p> <p>1-4 To develop knowledge on operation guidelines of ERCC at normal and emergency conditions through sharing of such guidelines developed in Japan.</p> <p>1-5 To implement trainings for emergency response command system to TDMMO staffs.</p> <p>Activity 2</p> <p>2-1 To design QD&E system including database and information system, casually and damage estimation, estimation of necessary responses.</p> <p>2-2 To update related database.</p> <p>2-3 To prepare and install necessary materials and equipments in pilot areas.</p> <p>2-4 To develop QD&E software.</p> <p>2-5 To develop operational guidelines of the QD&E system.</p> <p>2-6 To conduct trainings on operation of the QD&E.</p> <p>2-7 To operate the QD&E system.</p> <p>Activity 3</p> <p>3-1 To clarify the evacuation responsibility, authority and management after an earthquake.</p> <p>3-2 To select pilot areas for evacuation drills.</p> <p>3-3 To develop evacuation map and instruction for the residents in pilot areas both in temporary and regional evacuation places for promoting interaction.</p> <p>3-4 To develop evacuation guideline based on existing conditions.</p> <p>3-5 To implement trainings based on guideline to TDMMO staffs.</p> <p>3-6 To implement evacuation drills in pilot areas with participation of local residents.</p>	<p>Iranian side</p> <p>1) Counterpart personnel</p> <ul style="list-style-type: none"> - Project Director - Project Manager - Disaster Management - System Management - Emergency Response - Emergency Response Command System - Emergency Information and Communication - Evacuation and dissemination - Seismograph Network - Damage Estimation - GIS and Database Management - Administrative officials <p>2) Facilities and equipments</p> <ul style="list-style-type: none"> - Project office - Facilities for ERCC. (including computers and other hardware) - Others as necessary <p>3) Project implementation budget</p> <ul style="list-style-type: none"> - Preparation work for installation of QD&E system - Others as necessary <p>4) Others</p> <ul style="list-style-type: none"> - Necessary committee 	<p>1) Expert</p> <ul style="list-style-type: none"> - Disaster Management - System Management - Emergency Response - Emergency Response Command System - Emergency Information and Communication - Evacuation and dissemination - Seismograph Network - Damage Estimation - GIS and Database Management - Project Coordination <p>2) Provision of equipment</p> <ul style="list-style-type: none"> - Training tools and materials - Seismometers and other necessary equipments for QD&E system in pilot areas <p>3) Counterpart training in Japan</p> <ul style="list-style-type: none"> - As necessary <p>4) Others</p> <ul style="list-style-type: none"> - Advisory Committee 	<p>- TDMMO staffs trained continue to work in TDMMO.</p> <ul style="list-style-type: none"> - Equipments are procured on schedule. - Relationship between related organizations is maintained. - ERCC gets fully operational by TDMMO. - Sufficient level of information is shared. <p>Pre-conditions</p> <ul style="list-style-type: none"> - The full-time staffs of TDMMO are assigned to the project based on formal administrative order.



K.P.

Annex - 3 Evaluation Grid

PERFORMANCE			
Topics	Questions	Information/data to be collected	Information sources
Input	<p>Was the input from the Iranian side provided as planned? (Counterparts, offices and equipment, project cost, etc.)</p> <p>Was the input from the Japanese side provided as planned? (experts, counterpart training, equipment, project cost, etc.)</p> <p>Has the Output 0 been achieved? -PDM and PO for Stage II is established.*</p> <p>Has the Output 1 been achieved? -Emergency response command system is improved* has been achieved.*</p>	<p>Input record</p> <p>Input record</p> <p>Final version of PDM T and PO T is approved by March 2007. (Target: Achieved)</p> <p>1. TDMMO staffs are trained on application of the Japanese ERCS models.</p> <p>2. Operational framework of ERCC is proposed by the end of the Project.</p> <p>3. Guidelines of emergency communication (alerting, gathering and communication) are outlined</p>	<p>Progress reports Experts, Counterparts</p> <p>Progress reports Experts, Counterparts</p> <p>Progress reports Experts, Counterparts</p> <p>Activity Report Counterparts</p> <p>Activity report, Proposal on ERCC Experts, Counterparts</p> <p>Draft guidelines of emergency communication Experts, Counterparts</p> <p>Progress reports, TDMMO annual reports Experts, Counterparts</p> <p>Operation Guideline Experts, Counterparts</p> <p>Operational guidelines for QD&LE system, Activity report Experts, Counterparts</p> <p>Evacuation maps, Evacuation Guideline Experts, Counterparts</p> <p>Activity report on evacuation drills Experts, Counterparts</p>
Achievement of the "Outputs"	<p>Has the Output 2 been achieved? -Quick Damage and Loss Estimation (QD&LE) system is developed and operated.*</p> <p>Has the Output 3 been achieved? -Emergency evacuation plan and capacity are improved.*</p>	<p>1. Prompt and reliable seismic data is transmitted from 10 seismic meter stations.</p> <p>2. Reliability of quick damage and loss estimations software and data is improved.</p> <p>3. The operation and maintenance of developed QD&LE system is institutionalized at TDMMO.</p> <p>1. By the end of the Project evacuation map for at least another one mabahath is developed through application of the same techniques deployed by the Project.</p> <p>2. At least four (4) evacuation drills are implemented in pilot areas utilizing developed maps and the guideline by the end of the Project.</p>	<p>TDMMO Annual Report, Sectoral Reports, Project reports</p> <p>TDMMO Annual Report, Progress Report</p> <p>TDMMO Annual Report, Progress Report</p> <p>Interview with TDMMO experts</p>
Achievement of the Project Purposes	<p>By the end of the Project, will the emergency response plan and capacity for the priority activities for the first 72 hours after an earthquake in Tehran be improved?</p>	<p>1. QD&LE system is incorporated into the overall framework of emergency response command system.</p> <p>2. Drills for operation of emergency response command system are implemented utilizing improved version of QD&LE software at least once by the end of the Project.</p> <p>3. Emergency evacuation system is institutionalized at least in two pilot districts.</p>	<p>TDMMO Annual Report, Progress Report</p> <p>Interview with TDMMO experts</p>
Achievement of the Overall Goal	<p>Within 5 years after the completion of the Project, will capacity for emergency response for the first 72 hours after an earthquake in Tehran be continually improved?</p>	<p>Indicator 1. Emergency response planning framework for other priority areas mandated for TDMMO is prepared.</p> <p>Indicator 2. Emergency Response Command Center (ERCC) is made fully functional by TDMMO.</p> <p>Indicator 3. Evacuation maps are prepared and distributed to the residents for at least another five (5) mabahaths.</p> <p>Indicator 4: QD&LE system is updated and maintained by TDMMO.</p>	<p>Activity Reports Experts, Counterparts</p> <p>Interview with TDMMO experts and district officers</p> <p>Updated version of QD&LE system Experts, Counterparts</p>

IMPLEMENTATION PROCESS

Topics	Questions	Information/data to be collected	Information sources
Activities	Have the "Activities" of the Project been implemented as planned throughout the Project period? Was there any problem in the process of transfer of technology from the Japanese experts?	Progress of the "Activities"	Inception report, project reports, progress reports Experts, Counterparts
Transfer of technology	What was the decision-making process in revision of activities and direction, selection of staff, etc.? Written and how the decisions on revisions of the workplan were made?	How the transfer of technology has been carried out. Process of decision-making and its challenge	Progress reports Experts, Counterparts Inception report, progress reports Experts, Counterparts, JICA Iran Office
Decision-making process	How has the Project been monitored? Was the result of monitoring utilized in the Project activities?	Process of decision-making and its challenge System of monitoring. How the result of monitoring is used?	Inception report, progress reports Experts, Counterparts, JICA Iran Office Progress reports Experts, Counterparts
Monitoring	Did the Japanese experts and Iranian Counterparts communicate well?	How and how often the Project members communicate each other. How they reacted to the change of the plan. How they coordinate themselves to solve problems. How trust has been built between the Project members. How the Counterparts participated in the Project and took initiative.	Experts, Counterparts
Communication	Does the Project communicate well with other concerned agencies, officials and members of the pilot communities? Were the CPs assigned appropriately?	Frequency, style and content of communication. How they reacted to the change of the plan. Number of CPs assigned, background, previous positions and skill levels of CPs	Experts, Counterparts Iranian partner organizations Inputs Records Experts, Counterparts
Counterpart	Do the Iranian project leaders actively participate in the project management? Has the Iranian input (budget, personnel, office and equipment) to the Project been appropriate?	Ownership and participation of the Iranian PMU staff members mode and methodologies of project implementation, responsiveness on changes of the Plan of Operation, approaches for joining problem solution, method of developing working relationships	Progress reports, Experts, Counterparts Experts' activity reports, Progress reports, Experts, Counterparts
Ownership	Do the Iranian project members take proactive participation in the Project activities?	level of participation in project activities, frequency, style and contents of participation	Progress reports, Experts, Counterparts
Others	Have there been any difficulties experienced due to contract-based management system? Is there any challenge in the process of project implementation?	mode and methodologies of project implementation, responsiveness on changes of the Plan of Operation, approaches for joining problem solution, method of developing working relationships Issues that came up in the process of Project implementation. Causes and solutions.	Progress reports Experts, Counterparts Progress report Experts, Counterparts

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5 Evaluation Criteria
1. RELEVANCE

Topics	Questions	Evaluation Results	Information sources
Needs	Are the Project Purpose and the Overall Goal relevant to the needs of Iran? Are the Project Purpose and the Overall Goal relevant to the needs of the target groups?	Problems and challenges identified for the disaster management Sector in Iran Needs of the TDMMO	TDMMO's policy document Experts, Counterparts Related documents Experts, Counterparts
Priority	Is the Project relevant with the development policy of Iran? Is the Project relevant to the Japan's country assistance policy for Iran?	National development policy in Iran Japan's development assistance policy (ODA charter, etc.), JICA's assistance policy for Iran and priority areas.	Related national policy documents Related research documents Documents of MOFA, JICA
Strategy	Has the Project taken up a good strategy to tackle challenges identified for the disaster management sector in Iran? (i.e. approach, selection of the target areas) Does Japan has comparative advantage in this technical area?	How the accumulated know-how in Iran and Japan has been utilized. Whether the Project applied methods and techniques that were relevant to the situation of Iran. History and achievement of JICA's assistance in similar areas.	project documents Experts, Counterparts Project documents JICA documents Experts, Counterparts
Others	Was the selection of the Irann Counterpart organization and target groups right? Was there any change in the environment of the Project (political, economic and social conditions) since the Mid-Term Review in November 2008?	Selection process of the Counterpart organizations and the target groups Information on change of political, economic and social conditions.	Related research documents Experts and parties concerned Progress reports Experts, Counterparts

Topics	Questions	Information/data to be collected	Information sources
Achievement of the Project Purpose	Will the "Project Purpose" be achieved by the end of the Project based on the inputs, outputs and the progress of the activities? Were the four "Outputs" only prerequisites for the achievement of the "Project Purposes"? Are there any other activities that would have been necessary for achievement of the "Project Purposes"?	Project performance. Degree of achievement of the Project Purposes Consequences between the Output and the Project Purposes	Progress reports Experts, Counterparts Progress reports Experts, Counterparts
Causality	Have the changes in outputs influenced achievement of the Project Purpose in any way? Are there any factors that particularly contributed to achievement of the Project Purpose?	Consequences between the Output and the Project Purposes Contributing factors	Progress reports Experts, Counterparts Progress reports Experts, Counterparts
Causality	Are there any factors that particularly impeded achievement of the Project Purpose? To what extent "important assumptions" from the Output to the "Project Purpose" were relevant to achievement of the Project Purposes?	Impeding factors Effect of the important Assumptions and other factors	Progress reports Experts, Counterparts Progress reports Experts, Counterparts

3. EFFICIENCY

Topics	Questions	Information/data to be collected	Information sources
Input	Were the Iranian and Japanese inputs appropriate?	Record of Input	Progress reports Experts, Counterparts
	How and why changes in inputs were decided? How did such changes influence the Project?	Records of Inputs	Progress reports
Achievement of Outputs	Are the equipment actively utilized?	How the equipment utilized (record of experiments etc.)	Experts, Counterparts
	Were the four Outputs achieved?	Achievement of Outputs	Progress reports Experts, Counterparts
	Were there any factors hindering fulfillment of Outputs?	Achievement of Outputs	Progress reports Experts, Counterparts
Causality	Were the "Activities" sufficient for the achievement the "Outputs"?	Record of Activities and achievement of the Outputs	Progress reports Experts, Counterparts
	Did the factors described as the "Important Assumption" occur? If they did not, how did the Project approach the issue? . Appropriate number of counterparts is assigned from TDMMO. "Project implementation budget is ensured." -"Relationship between related organizations is maintained."	Record of Activities, Record of Input	Progress reports Experts, Counterparts
Timing	Were the "Activities" carried out timely?	Record of Activities	Progress reports Experts, Counterparts
	How did the Project cope with timing issues of the Inputs (i.e. equipment and project area preparation)	responsiveness in problem solving	Progress reports Experts, Counterparts
Others	Do you think that the current project management system has worked well for the Project?	Record of Activities	Progress reports Experts, Counterparts
	Did the Project use lessons learned from other similar projects in other countries managed by the Japanese partner organizations?	Lessons from other similar projects	Report of other relevant projects Experts, JICA

4. IMPACT

Topics	Questions	Information/data to be collected	Information sources
Achievement of the Overall Goal "Capacity for emergency response for the first 72 hours after an earthquake in Tehran is continually improved"	Will the Overall Goal be achieved within five years after the end of the Project based on the result of inputs, outputs and activities, and achievement of the Project Purposes? Are there any factors that would impede achievement of the Overall Goal?	Achievement, Effect of Important Assumptions, contributing and impeding factors Achievement, Effect of Important Assumptions, contributing and impeding factors	Experts, Counterparts Experts, Counterparts
Causality	Is the consequence from the Project Purposes to the Overall Goal logically designed? Are there any positive and negative impacts on political, social or cultural aspects, except for the Overall Goals? Are there any positive and negative impacts on economy? Did the Project equally benefit people from different background (social class, ethnicity, gender, etc.)? Are there any impacts on technological advancement in the disaster management sector in Iran? Are there any positive and negative impacts on environmental protection? Are there any negative effects brought about by the Project? Does the Project take measures to mitigate them?	Structure of the Project, Effect of Important Assumptions, contributing and impeding factors Examples Examples Examples Examples Examples Examples Examples	PDM2, Progress reports Experts, Counterparts Experts, Counterparts, JICA Iran Office Experts, Counterparts, JICA Iran Office Experts, Counterparts, JICA Iran Office Experts, Counterparts, JICA Iran Office Experts, Counterparts
Impact			

5. SUSTAINABILITY

Topics	Questions	Information/data to be collected	Information sources
Political and institutional aspects	Will the policy directions of the disaster management sector be maintained by the Iranian government after the end of the Project?	Policy and strategy of the Iranian government	Experts, Counterparts, JICA Iran Office
	Have systems and guidelines being developed by the Project to enable the Tehran Municipality to pursue its policy directions ?	Regulations/decrees/laws concerning the disaster management/earthquake response	Experts, Counterparts, JICA Iran Office
	Is there a mechanism to enable utilization of the Outputs of the Project (i.e. operation guidelines, QD&LE system) after the end of the Project?	TDMMO's working plan, staffing plan, budget, Policy and strategic directions of the Iran Government	Experts, Counterparts
	Does the TDMMO have capacities to fully operate and utilize QD&LE system after the Project?	operation and management system, utilization mechanism, staffing and budget, linkage to the ERCC	TDMMO, Experts, Counterparts
	Does the TDMMO have capacities to areas to develop emergency evacuation plan?	TDMMO's policy direction, staffing and budget, working plan	Experts, Counterparts
	Does the TDMMO have capacities to continue training staffs on evacuation guideline and conduct evacuation drills?	TDMMO's policy direction, staffing and budget, working plan	Experts, Counterparts
	Does the TDMMO have capacities to plan and implement emergency response plan?	TDMMO's direction, staffing and budget, working plan, commitment	Experts, Counterparts
	Has the TDMMO embraced sufficient level of ownership of the Project?	organizational structure, staffing and budget, working plan, TDMMO's policy direction	Experts, Counterparts
	Has the TDMMO secured necessary budget for its emergency response planning and full operation of ERCC?	annual budget allocation to TDMMO's, TDMMO's annual plan	Experts, Counterparts
	Are the equipment provided by the Project actively utilized and maintained?	How the equipment is utilized and maintained.	Progress reports Experts, Counterparts
Technical aspects	Are the techniques and methodologies of skill transfer used by the Project being accepted? (i.e level of skills, social and cultural appropriateness)	How the manuals developed by the Project are utilized by the engineers and technicians arises.	Progress reports Experts, Counterparts
	Are the equipments being appropriately used and maintained?	How the manuals developed by the Project are utilized by the engineers and technicians arises.	Progress reports Experts, Counterparts
	Should the Project have been more concerned with the socially vulnerable groups (the poor, women, etc)? Has there been any instances that such lack of concerns hinder the achievements of impacts?	Examples of impeding factors	Experts, Counterparts JICA Iran Office
Social, Cultural and Environmental aspects	Is it probable that the impact of the Project be hindered due to lack of concerns for environment?	Examples of impeding factors	Experts, Counterparts JICA Iran Office
	Are there any factors hindering ensuring sustainability?	Examples of impeding factors	Experts, Counterparts JICA Iran Office
Other aspects			

Evaluation Item	EVALUATION QUESTIONS	Sub-Questions	Result/Findings
Project Achievement	Achievement of Overall Goal	Achievement of Overall Goal (expected) 'Capacity for emergency response for the first 72 hours after an earthquake in Tehran will be continually improved.'	<p>This is being implemented solely by Iranian side and the details of its emergency response framework are not being shared with the Japanese side. Unless this situation is altered, verification on achievement level of this indicator would remain difficult.</p> <p>In December 2009, Tehran Disaster Management Headquarter (Setad) or ERCC, was officially inaugurated. While there are some more work to be done to make the Centre functional with assignment of required personnel, the Centre is expected to be fully functional in relatively short time period. Therefore, it is highly likely that this indicator will be achieved.</p> <p>Evacuation maps were prepared for 2 pilot mahales by February 2009. Since then, TDMMO has taken outstanding initiatives to prepare maps for additional 4 mahales and 2 of which have already been completed. Another one is in its final stage and the other is in its survey stage. Since TDMMO has already planned to expand this activity to other mahales, it is highly likely that this indicator will be achieved even in 2010.</p> <p>The newly developed QD&LE system has already been incorporated into the integrated emergency response system at the Tehran Disaster Management Headquarter in the TDMMO's compound. While the extent and the details of the system being developed at the Centre are not made available to the Japanese side, the QD&LE system is being considered as an integral part of the Centre by the TDMMO. Preparation of contracts to maintain ten seismometers and the damage estimation system are being developed and are expected to be finalized by the end of the Project.</p> <p>The newly developed QD&LE system has already been set-up and put into operation at the Tehran Disaster Management Headquarter which was officially inaugurated in December 2009. While the extent and the details of the whole emergency command system being developed at the Centre are not made available to the Japanese side, the Team confirmed that the QD&LE system is being considered as an integral part of the Centre by the TDMMO.</p> <p>Revisions of the QD&LE software has been repeatedly done. Khaje-Nasir University, a contractor, submitted its 3rd version. A drill for operation of emergency response command system was conducted in November 2009 utilizing this 3rd version. A few glitches were found not only through this drill but other series of drills of QD&LE system and now are being modified. Software is going to be finalized by February 2010.</p> <p>Development of evacuation maps and implementation of evacuation drills were undertaken for 2 pilot mahales by February 2009 when joint activities for Output 3 were completed. Since then, TDMMO has taken outstanding initiatives to prepare maps and conduct drills. Evacuation drills have already been undertaken for two more mahales; another is to be undertaken for another mahale in February 2010. These initiatives have been demonstrated mainly by staff members of the Education and Public Participation Deputy in conjunction with its another project to mobilize volunteers for disaster management. These activities to develop maps and conduct of evacuation drills might be transferred to the Deputy of Preparedness for further integration into the mainstream preparedness activities. Whether this in fact is to be taken place or not, the Team confirms that the TDMMO has been fully equipped with technical skills to further develop these activities.</p> <p>Nothing in particular</p> <p>Based on situation analysis during the Stage 1, PDM1 version 1 and PO1 were prepared. They were endorsed and signed by TDMMO and the JICA Monitoring Study Team in March 2007. However, all the specific Objectively Verifiable Indicators were not sufficiently identified at that time and later added after the inception of the Stage 2. Final versions of both PDM1 Version2 and PO2 were both prepared and were endorsed in August 2007, 5 months later than initially expected.</p>
	Achievement of Overall Goal	Achievement level of Output 0: To what extent has 'Emergency response command system is improved' been achieved?.	

Project Achievement	Achievement of Outputs	Achievement level of Output 1: To what extent has "Emergency response command system is improved" been achieved? "	<p>8 officials from TDMMO and the District Disaster Management Office participated in the training in Japan in August-September 2009. Upon return, two seminars were conducted in November 2009 (one for internal and the other for both TDMMO staff members and the district disaster management offices) for sharing knowledge on the Japanese ERCS models. TDMMO is to continuously conduct bi-monthly training with the district disaster management offices.</p> <p>While operational framework of ERCCs in Japan was not made available to TDMMO, descriptions and brief outlines of ERCCs were provided. TDMMO is in the process of coming up with an operational framework for the newly constructed ERCC and is expected to be further developed and finalized by TDMMO.</p> <p>TDMMO is in the process of developing guidelines of emergency communication in accordance with reference materials provided. This is expected to be further developed and finalized by TDMMO.</p> <p>Nothing in particular</p> <p>After installation in November 2009, there was once an earthquake on 16th January 2010 at 760 km away from Tehran and its data was promptly transmitted from all ten seismometers. Operators of the ERCC is conducting daily monitoring of data. Therefore, this indicator has already been achieved.</p> <p>As there was no specific definition and indicator set to measure 'reliability' of the system, level of achievement of this indicator could not be assessed. However, reliability of QD&LE system would further be strengthened once on-going efforts to revise casualty and damage estimation functions and the ground model by IIEES finalized. Continued efforts are to be made to update database by IIEES in addition to already updated data on population and realignment of mahale boundaries.</p> <p>Development of QD&LE system was commissioned to the Team from Khaje-Nasir (KNT) University and its system design and software have been developed and revised. Its 3rd and a final version is now being tested and modified. There would be 6 months service grace period which will then be followed by service and support contract between TDMMO and KNT University.</p> <p>Nothing in particular</p> <p>Evacuation maps for selected two districts were developed. TDMMO then took an initiative to print and distribute evacuation maps to residents in these 2 pilot mahallehs. Contents and quality of information added onto the evacuation maps were more upgraded than initially planned. Information such as on evacuation, first-aid, desirable responses at the time of earthquake was developed and printed in the back of respective maps. TDMMO has already developed and distributed maps for additional two districts through application of the steps and techniques developed by the Project. Another one is being finalized by February 2009 and the other is being developed. Therefore, by the end of the Project, 8 evacuation maps are to be developed.</p>
Project Achievement	Achievement of Outputs	Achievement level of Output 2: To what extent has "Quick Damage and Loss Estimation (QD&LE) system is developed and operated" been achieved?	<p>Nothing in particular</p> <p>Evacuation maps for selected two districts were developed. TDMMO then took an initiative to print and distribute evacuation maps to residents in these 2 pilot mahallehs. Contents and quality of information added onto the evacuation maps were more upgraded than initially planned. Information such as on evacuation, first-aid, desirable responses at the time of earthquake was developed and printed in the back of respective maps. TDMMO has already developed and distributed maps for additional two districts through application of the steps and techniques developed by the Project. Another one is being finalized by February 2009 and the other is being developed. Therefore, by the end of the Project, 8 evacuation maps are to be developed.</p>
Project Achievement	Achievement of Outputs	Achievement level of Output 3: To what extent has "Emergency evacuation plan and capacity are improved" been achieved?	<p>Two drills for evacuation utilizing Disaster Imagination Game (DIG) were conducted for two pilot mahallehs in July 2008 for TDMMO staff and actual evacuation drills were conducted both in December 2008 and February 2009. Two (2) other drills utilizing DIG were conducted. TDMMO demonstrated outstanding initiative to conduct other two actual evacuation drills in 2009 and the other is to be undertaken in February 2010. Therefore, by the end of the Project, a total of 8 drills for evacuation were conducted, which is twice the level of the target set at 4.</p> <p>(1) In addition to initially intended 8 TDMMO staff members, disaster management officers from all the 22 districts of Tehran Municipality have been trained on DIG; (2) The emergency evacuation guideline was developed and finalized by January 2009. This was the very first one developed in Iran.; (3) Information printed on the back of evacuation maps to inform people on first-aid, evacuation, preparedness, mutual help at the time of earthquake were found useful. 50,000 were printed for distribution to schools, mosques and other organizations.; (4) DAWAM groups have been mobilized for development of evacuation maps and drills. Evacuation maps were distributed by DAWAM groups and awareness level of the community on disaster management has increased.</p>


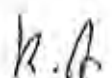



Project Achievement	Were the inputs provided as planned and agreed?	Records of inputs	<p>Iranian side</p> <p>A total of 35 at TDMMO were appointed as counterparts since the inception of the Project. At the time of terminal evaluation there were 21 counterparts assigned.</p> <p>Operational cost-sharing with the Iranian side has been promoted since the beginning of the Project. TDMMO allocated US\$764,000 dollars for the Iranian fiscal year 2008-March 2009 and another US\$1.3 million for FY2009, totaling US\$2.1 million.</p> <p>TDMMO secured an office space and necessary facilities for the Japanese Experts. Most of equipment necessary for QD&LE system was provided by TDMMO.</p> <p>Japanese side</p> <p>A total of 14 short-term experts in 14 areas of expertise were assigned for a total of 64.6 months since the inception of the Stage 1 of the Project till December 2009. These short term experts were dispatched in the areas of (1)Chief Advisor; (2) Disaster Risk Management; (3)Emergency Response; (4)Emergency Information and Communication; (5) Seismograph Network; (6)Evacuation and Dissemination (1); (7)Evacuation and Dissemination (2); (8)Community Disaster Management Organizations; (9)Administrative Institutions/Project Design; (10)GIS and Database Management; (11)Damage Estimation; (12)QD&LE System; (13) Evacuation Drill; and, (14) Project Coordinator.</p> <p>A total of 10 counterpart personnel received training in Japan.</p> <p>Machinery and equipment in total valued at 27.6 million Japanese yen were provided for the project activities by January 2010.</p> <p>A total amount of 16.6 million Japanese yen was provided to supplement a portion of local expenditure by the end of December 2009.</p> <p>From the Japanese side, the first Monitoring Study Team was dispatched in March 2007 to agree on project framework for the Stage II and another in February 2008 to confirm progress and to pave the way for the implementation of Output 1 through exchanges of views. Mid-term review was conducted in November 2008 and draft PDM2 was developed in accordance with a request from Iranian side to reactivate Output 1.</p> <p>Joint Coordination Committee (JCC) mechanism that was agreed upon in the Record of Discussions of 29th April, 2006, was activated on 17th December 2007. JCC was designed to: (1) To formulate the annual work-plan of the Project; (2) To review the progress of the annual work-plan; (3) To review and exchange opinions on major issues that may arise during the implementation of the Project; and (4) To discuss any other issues pertinent to smooth implementation of the Project. Another 4 JCCs were convened on 4th March 2008; 30th November 2008; 22nd February 2009; and, 10th November 2009. The last JCC is to be held on 30th January 2010. Currently JCC is providing a platform of discussion mainly on technical matters.</p>
Implementation on Process	Were there any problems on administration for the Project management?	Status of monitoring activities	<p>Based on a situation analysis during the Stage 1, PDM1 version 1 and PO1 were prepared. They were endorsed and signed by TDMMO and the JICA Monitoring Study Team in March 2007. However, all the specific Objectively Verifiable Indicators were not sufficiently identified at that time and later added after the inception of the Stage 2. Final versions of both PDM1 Version2 and PO2 were both prepared and were endorsed in August 2007. PDM2 was drafted and was later agreed upon in March 2009. Detailed activity plan of operation for Output 1 was drawn up and agreed on in February 2009.</p> <p>Utilization of PDM was found limited. Plan of Operation that has been developed in accordance with PDM1 should have been updated when some changes were made and particularly when PDM was revised. Instead, more detailed activity plans were prepared by respective Japanese experts and were agreed upon with TDMMO counterparts were used for monitoring of activities.</p> <p>Not particular problems are found.</p> <p>Not particular problems are found.</p>



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Implementati on Process	Did the Japanese experts and counterparts communicate well? Were there any problems in the measures of technology transfer?	Relationship between J/E and C/P Was there any issue in technology transfer?	<p>Good relationship between the Japanese experts and the counterparts were established. While there is a limitation on periods of time when respective experts could stay in Iran, a level of communication and trust between the Japanese experts and Iranian counterparts were found good. Most of the Japanese experts have worked with TDDMMO in prior to the Project (i.e. Micro-Zoning Study, Master Plan) and therefore had already established sound working relationships before the Project commenced. Communication among the Japanese experts should have been improved to strengthen combined outcome levels of the Project as a whole rather than that of respective Outputs.</p> <p>Technology transfer was undertaken through project implementation, training in Iran and Japan, on-the-job training and other technical training. As for Output 1, disaster management officers from Japanese local governments were initially planned to transfer first-hand knowledge and skills on operation of emergency response command systems. However, this modality of technical transfer was not realized due to unavailability of personnel. This could have limited direct and first-hand technology transfer to the Iranian counterparts.</p> <p>Strong leadership and commitment at the level of the President and of the counterparts were demonstrated by TDDMMO. Some of the cases that demonstrates TDDMMO's ownership are: (1) Provision of necessary equipment for QD&LE system in the ERCC; (2) Staff members with specific skill sets were recruited for the Project implementation and assigned as found necessary; (3) Construction of 10 stations for seismometers was done and paid by TDDMMO; and, (4) Printing and distributions of evacuation maps were funded and undertaken by TDDMMO.</p>
	Sense of ownership of TDDMMO and personnel towards the Project	Ownership of counterpart organization	

EVALUATION QUESTIONS		Result/Findings
Questions	Sub-Questions	
Relevance	Was there necessity of implementing the Project?	Iran is situated on part of the Alp-Himalaya orogenic belt and is known to be part of the youngest and last orogenic regions of the world. The capital city of Tehran is located in the one of the world's most active seismic belts and has sustained repeated substantial damages due to high magnitude earthquake activities happening in some 150 year cycle. Already 170 years have passed since the last one in 1830. It is feared that a major earthquake in Tehran, a megapolis of over 8 million inhabitants, situated on among active faults, could well lead to considerable loss of life at 380,000 in the worst case scenario and substantial financial damages particularly due to rapid urbanization started in the 1950s. Therefore, improvement of the emergency response plan and capacity for the priority activities for the first 72 hours after an earthquake in Tehran needed to be given urgent attentions.
	Is Overall goal of the Project consistent with development policy of Iran/ Tehran?	Having been established in July 2004 under the Tehran Municipality, the Tehran Disaster Mitigation and Management Organization (TDMMO) is tasked to (1) improve level of safety and to reduce risks in Tehran through coordination, research, training programs and executive measures prior to occurrence of disasters; (2) perform measures and necessary coordination to increase efficiency of disaster management system in Tehran and in related organizations at the time of disasters for implementation of rescue and relief operations and also decrease of damages and human and property losses; (3) coordinate and perform emergency response with related organizations at the time of disasters. In order for TDMMO to undertake these tasks, building of capacities for optimal response to disasters and risks in case of occurrence was considered as urgent requirement for a young organization like TDMMO.
	Priority	District disaster management offices were tasked to be responsible for emergency response in respective areas under the directions of TDMMO, therefore, development of capacities of both TDMMO and of district disaster office were found in line with the needs of these two target groups.
	Is Overall goal of the Project consistent with Japan's foreign aid policy and JICA's plan for country-specific program implementation?	While there is no policy document available to the Team on national emergency response to disasters including earthquakes, strong commitment of the Tehran Municipality to improve capacities to plan and handle emergency response for imminent earthquake could be easily witnessed through rapid expansion of TDMMO's organizational structure and seemingly sufficient budget allocation.
Appropriateness as measure	Does Japan have comparative advantage in skills and technology of disaster management?	Relevance was also found high as the Project Purpose is in line with one of six priority sectors of the JICA's Country Assistance Rolling Plan developed in August 2009.
Others	Any major changes in related policy and external conditions?	Having experienced many earthquake disasters, Japan has one of the highest level of expertise in planning and implementing emergency response command systems and overall earthquake disaster management. QD&LE system in the Output 2 has been made possible mainly thanks to Japan's high level of skills in data collection and analysis on earthquakes. There are seemingly no major changes in policy direction although policy document is not made available to the Team.
		1) Implementation of activities for Output 1 'Emergency response command system is improved' was initially postponed due to on-going discussions on the government's decree on disaster management in Iran. As clarifications of roles and responsibilities of TDMMO were deemed necessary for effective implementation of activities of Output 1, the Project had to postpone its implementation. At the time of mid-term review in November 2008, reactivation of Output 1 was proposed. A detailed plan of activities for Output 1 was then discussed and was agreed on in February 2009. PDM2 was finalized and agreed upon in March 2009. 2) Use of satellite network that was designed to function as a back-up of an existing telephone network has not yet been approved.



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The achievement level of Project purpose	The achievement level of Project purpose	See Achievement of the Project Purpose
The level in which the achievement of Outputs could be attributed for the achievement of the project purpose	Were outputs sufficient to achieve the project purpose?	<p>Prior to the Project inception, TDMMO developed the emergency response plan covering 20 priority areas. This plan has overall framework but was found to lack details for full implementation. It was intended that the Project was to assist TDMMO to revise its emergency response plan in and to improve its capacities in selected priority areas selected as 3 Outputs of the Project: Improve emergency response plan and its implementation in the Output 1, development and operation of Quick Damage and Loss Estimation (QD&LE) system (Output 2) and improvement in emergency evacuation plan and capacity (Output 3). All the outputs are found to be contributing to the achievement of the Project Purpose.</p>
Effectiveness	Were there any influences due to the changes in the external conditions (important assumptions)?	<p>Implementation of activities for Output 1 'Emergency response command system is improved' was initially postponed due to on-going discussions on the government's decree on disaster management in Iran. As clarifications of roles and responsibilities of TDMMO were deemed necessary for effective implementation of activities of Output 1, the Project had to postpone its implementation. However, it was finally resolved and roles and responsibilities of TDMMO were reaffirmed in line with an approval of the Municipal Council of Tehran.</p>
Are there any promoting/inhibiting factors towards realization of Project purpose?	Any other promoting/inhibiting factors towards achievement of project purpose?	<p>There were seven (7) promoting factors identified: (1) Strong leadership at the level of the President; (2) Ample budget allocation; (3) Both the Project Director and the Project Manager being seismology specialists; (4) Recruitment and assign of counterparts with specific skill sets required for the Project implementation; (5) High level of commitment and willingness among the Iran counterparts to learn new technical skills; (6) High regards for Japanese technologies on disaster management; and (7) Provision of equipment necessary to establish seismometers networks with special specifications for Tehran.</p> <p>There were two (2) inhibiting factors identified: (1) Implementation of activities for Output 1 'Emergency response command system is improved' was initially postponed due to on-going discussions on the government's decree on disaster management in Iran. As clarifications of roles and responsibilities of TDMMO were deemed necessary for effective implementation of activities of Output 1, the Project had to postpone its implementation. While the Output 1 was reactivated in February 2009, its implementation was primarily in the hands of TDMMO and the roles expected from the Japanese side was limited to provision of reference materials and counterpart training in Japan. (2) Presence of the Project Manager at the TDMMO was limited to thrice-a-week.</p>

	Production of Outputs	Is the output production adequate?	See achievement level of Outputs.	See achievement level of Outputs
Causal relationships	Were activities sufficient to produce outputs?	Were there any influences due to the changes in the important assumptions at the level of "from activities to outputs"?	See achievement level of Outputs	See achievement level of Outputs
Efficiency	Were inputs adequate in timing, quantity and quality to conduct the activities?	Is the level of achievement of Project purpose adequate in terms of inputs level?	<p>1) The Team acknowledges that IEES and the KNT University would continue to assist TDMMO on technical issues, however, high turn-over of staff members of TDMMO combined with many counterparts are on part-time or short contract. Enhancing institutional memories and continuity by establishing mechanisms to internalize technical skills and knowledge and train staff members needs to be strengthened. 2) With regards to procurement of equipment, a network of 10 seismometers has finally become operational in November 2009, 15 months later than initially expected. With its installations, outcome level of Output 2 improved significantly. 3) Access to information on relationships between the TDMMO and other disaster management related agencies remains constricted. 4) At the time of project inception, ERCC was expected to be completed by December 2007. It was finally inaugurated in December 2009.</p> <p>The Project was implemented in two stages: (1) Stage 1 for collection of necessary information to detail out the Project framework and formulate PDM and PO for four months between November 2006 and March 2007; and (2) Stage 2 between July 2007 and March 2010 for implementation. Japanese experts were continued to be dispatched for Output 1 which was effectively suspended at the inception of the Stage 2. Assignment's duration and combination of expertise of Japanese experts needed to be further clarified and coordinated in order to improve efficiency.</p> <p>Due to difficulties in procuring equipment to Iran, delays in procurement and full operationalization of seismometer network by 15 months has limited the time available to stabilize the QD&LE system and hindered reinforcement of applications of skills and knowledge to troubleshooting.</p> <p>The equipment provided are properly being utilized.</p> <p>Mostly Appropriate but the timing of the second training conducted in September 2009 should have been done as early as inception of the Stage 2 to allow sufficient time to contribute its learning to the Project implementation. Participation of female counterparts in the training in Japan was not realized.</p> <p>The Team acknowledges the concerted efforts were made by the President to secure funds to undertake activities beyond the Project's design.</p> <p>Mostly appropriate. It is commendable to note the TDMMO's concerted efforts to recruit and assign counterparts to fill the human resource gap at TDMMO, however, relatively high turn-over of skilled counterparts was witnessed. Whenever a new personnel gets assigned, training needed to be repeated due to limited technical transfers among the Iranian counterparts. Further efforts should have been made to transfer and institutionalize skills in the organization.</p> <p>Adequate for Output 2 and more than expected for Output 3. However, the level of achievement of Output 1 should have been better.</p>	<p>See achievement level of Outputs</p> <p>See achievement level of Outputs</p> <p>1). TDMMO staffs trained continue to work in TDMMO. 2) Equipments are procured on schedule. 3) Relationship between related organizations is maintained. 4) ERCC gets fully operational by TDMMO. and 5) Sufficient level of information is shared.</p> <p>Dispatch of experts (Number, timing, expertise)</p> <p>Appropriateness of equipment provided (Kind/variently, type/model, number, timing)</p> <p>Receiving trainees in Japan and other countries (timing, number, content of training)</p> <p>Local cost sharing</p> <p>Assignment of CPs (Number, timing, expertise)</p> <p>Utilization of the major inputs to its cost</p>

Achievement of Overall Goal	Can capacity for emergency response for the first 72 hours after an earthquake in Tehran is continually improved within 3-5 years (or 5-10 years?) after the completion of the Project?	[See the achievement of Overall goal]	[See the achievement of Overall goal] Capacity for emergency response for the first 72 hours after an earthquake in Tehran is continually improved.
	Are there any inhibiting factors towards achievement of Overall goal?	President Hosseini has been appointed as the Deputy Mayor of Tehran Municipality and a new president is to be appointed in the next two months. There is concern that this change of leadership might bring in some changes.	Changes in social and cultural factors, accesses, etc.
	Is the gap between Project purpose and Overall goal huge?	There was no gap between overall goal and project purpose addressed.	Logical Framework and logic model
Causal relationship	Were there any influences due to the changes in the important assumptions at the level of "from project purpose to Overall goal"?	No changes in important assumptions.	Possibility of the external conditions that influence on the Project
	Influence due to the external conditions	No influence	Changes in social and cultural factors, accesses, etc.
	Are there any unintended positive situation produced by the implementation of the Project?	With regards to any unintended positive impacts emerging from Project implementation, some positive impacts by the Project activities have been observed: (1) Ever first evacuation maps and evacuation guidelines were produced. TDMMO has taken strong initiatives to print evacuation maps and distribute to each households in 4 mahales. The other two evacuation maps are being developed and evacuation drills are being planned; (2) Strengthened relationships with other research and academic institutions like KNT University and IIEES; and, (3) Knowledge and skills obtained by Iranian counterparts are being transferred to students at academic institutions.	Changes and improvement that indicators can not describe, and good practice
Spread effect	Are there any unintended negative situation produced because of the implementation of the Project?	No negative impacts are observed.	Policy, Law (Preparation of regulation, institutionalization, etc.), Social and cultural changes such as gender, human rights, inequality, etc., Technology changes, economic changes in target society, etc
		No negative impacts are observed.	Cases of negative impact on TDMMO as well as their staff, if any
Impact			

Policy and system	Will current support at the policy level continue after the Project?	While there is no public document to verify policy directions, improvement on performance of the emergency response 72 hours after earthquake would highly likely to remain high priority in Iran and the municipal government of Tehran.
Institutional and Financial aspects	Is there any institutional mechanism in TDMMO to continue improvement in emergency response and 3 priority areas? How high is the probability that TDMMO will increase/continue providing necessary budgetary allocation for ERCS, QD&LE system and emergency evacuation?	Given the mandate, TDMMO is expected to continue working on development of emergency response plans, ERCC guidelines, ERCS and etc. However, its institutional mechanism and a detailed plan were not made available to the Team. Having been incorporated into the ERCC, a newly developed QD&LE system is to be utilized and further developed by TDMMO. As for emergency evacuation plan, staff members of the Deputy of Education and Public Participation have already sufficient level of skills to develop evacuation maps and conduct drills. There seems to be a discussion on if these activities should be incorporated into the Deputy of Preparedness. This move might further mainstream emergency evacuation into overall disaster preparedness framework, however, technical transfers need to be done to ensure continuity of skills.
Technical aspects	Will the equipment be appropriately used and maintained? How high is the possibility that TDMMO could sustain Project's activities on ERCS, QD&LE system and evacuation on its own?	Equipment and devices have been utilized by the counterparts. In order to ensure timely and proper maintenance be undertaken, TDMMO is in the process to draw up two service contracts (KNT University for maintenance of QD&LE system software and PADAP for maintenance of seismometer network). Counterparts who have been assigned and trained to respective activities of Output 2 and 3 have demonstrated sufficient level of knowledge and skills to sustain activities on their own. Counterparts for Output 2 remain to have vital roles in training system operators at ERCC and conduct close follow-ups for actual application of skills and knowledge.
Social and cultural aspects	Promoting factor to sustain the positive effect produced by the Project Inhibiting factor due to lack of consideration to environment and socially vulnerable groups?	Promoting factor: 1) keen interests among counterpart staff members to learn new skills and knowledge; and 2) tangible impacts experienced on Output 2 and Output 3; 3) increased recognition of TDMMO in Iran for pioneering new technologies in disaster management.
Other aspects	Any inhibiting factor?	Nothing in particular.

Sustainability



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Annex - 4 List of Stakeholders Consulted by the Evaluation Mission

(1) The Japanese side

<Experts>

- | | | |
|---|----------------------|--|
| 1 | Mr. Shozo Kawasaki | Chief Advisor, JICA Project Management Office |
| 2 | Mr. Ichiro Kobayashi | Disaster Risk Management (Output 1) |
| 3 | Mr. Osamu Nishii | Emergency Response (Output 1 and Output 3) |
| 4 | Mr. Noboru Ikenishi | Emergency Information and Communication (Output 2) |
| 5 | Mr. Sugio Imamura | Seismograph Network (Output 2) |
| 6 | Mr. Hiroyuki Maeda | GIS and Database Management (Output 2) |
| 7 | Ms Tomoko Shaw | Emergency Evacuation (Output 3) |

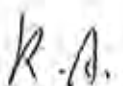
<JICA Office>

- | | | |
|---|---------------------|--------------------------------|
| 1 | Mr. Makoto Ashino | Resident Representative |
| 2 | Mr. Daimin Hanadate | Deputy Resident Representative |

(2) The Iranian side

<Counterparts at the Teheran Disaster Mitigation and Management Organization -TDMMO>

- | | | |
|---|---------------------------|---|
| 1 | Dr. Maziar Hosseini | Project Director/ President of TDMMO |
| 2 | Dr. Kambod Amini Hosseini | Project Manager/ Advisor of TDMMO |
| 3 | Mr. Alireza Sabeti | Project Coordinator, Counterpart (Output 1 and 3) |
| 4 | Mr. Abdolreza Aminiae | Counterpart (Output 2) |
| 5 | Mr. Rahim Norouzi | Counterpart (Output 2) |
| 6 | Ms. Fatemeh Saleh | Counterpart (Output 3) |
| 7 | Ms Raziye Khazaie | Counterpart (Output 3) |
| 8 | Ms. Nafiseh Hasherni | Counterpart (Output 3) |



Annex - 5 List of Japanese Experts

Name	Field	Dispatch Period	Man/Month FY2006 (MM)	Man/Month FY2007 (MM)	Man/Month FY2008 (MM)	Man/Month FY2009 (MM) Contract	Man/Month FY2009 (Est. of Dec. 31, 2009)	Company/University
Shojo KAWASAKI	Chief Advisor	2006/1/26 ~ 12/05 (10 days)	0.67				-	Pacific Consultants International
		2007/03/05 ~ 03/14 (10 days)		0.70			-	
Ienjo KOBAYASHI	Disaster Risk Management	2007/07/12 ~ 07/17 (6 days)					-	PACET
		2008/02/26 ~ 03/11 (15 days)					-	
		2008/06/14 ~ 07/03 (30 days)			1.33		-	
		2008/11/20 ~ 12/09 (20 days)					-	
		2009/07/06 ~ 07/30 (25 days)				2.50	2.50 (1.50)	
		2009/09/20 ~ 10/09 (20 days)						
		2010/01/12 ~ 02/10 (30 days)						
		2006/1/26 ~ 12/10 (15 days)	1.67					
		2007/01/09 ~ 01/26 (20 days)		3.03				
		2007/03/02 ~ 03/16 (15 days)			1.67			
2007/07/12 ~ 08/10 (30 days)								
2007/09/02 ~ 09/10 (9 days)								
2007/10/04 ~ 11/02 (30 days)								
2008/01/29 ~ 02/27 (30 days)								
2008/05/28 ~ 06/24 (30 days)								
2008/10/15 ~ 11/18 (35 days)								
2010/01/07 ~ 02/10 (35 days)								
2007/01/09 ~ 01/29 (21 days)	Emergency Response	2007/01/09 ~ 01/29 (21 days)	1.53	2.50			-	OYO International
2007/02/18 ~ 03/14 (25 days)							-	
2007/07/12 ~ 08/10 (30 days)		2007/07/12 ~ 08/10 (30 days)			1.00		-	
2008/01/27 ~ 03/11 (45 days)		2008/01/27 ~ 03/11 (45 days)					-	
2008/10/05 ~ 11/03 (30 days)		2008/10/05 ~ 11/03 (30 days)					-	
2009/08/29 ~ 07/28 (30 days)		2009/08/29 ~ 07/28 (30 days)					-	
2009/10/05 ~ 11/18 (45 days)		2009/10/05 ~ 11/18 (45 days)					-	
2010/01/12 ~ 02/10 (30 days)		2010/01/12 ~ 02/10 (30 days)					-	
2008/10/18 ~ 11/17 (30 days)	Emergency Information and Communication	2008/10/18 ~ 11/17 (30 days)		2.00	2.00		-	Pacific Consultants International (Aimec)
2009/01/29 ~ 02/27 (30 days)		2009/01/29 ~ 02/27 (30 days)	2.00				-	Oriental Consultants (Aimec)
2009/02/11 ~ 03/11 (30 days)		2009/02/11 ~ 03/11 (30 days)					-	
2009/04/05 ~ 10/04 (30 days)		2009/04/05 ~ 10/04 (30 days)				2.00	2.00 (1.00)	
2009/09/05 ~ 09/23 (80 days)		2009/09/05 ~ 09/23 (80 days)					-	
2007/10/25 ~ 12/23 (80 days)		2007/10/25 ~ 12/23 (80 days)	5.50				-	OYO International (CTCK)
2008/01/27 ~ 03/11 (45 days)	Seismograph Network	2008/01/27 ~ 03/11 (45 days)					-	
2008/07/01 ~ 08/06 (37 days)		2008/07/01 ~ 08/06 (37 days)			3.00		-	
2008/12/18 ~ 12/20 (13 days)		2008/12/18 ~ 12/20 (13 days)					-	
2009/02/05 ~ 03/16 (40 days)		2009/02/05 ~ 03/16 (40 days)					-	
2009/06/30 ~ 08/23 (24 days)		2009/06/30 ~ 08/23 (24 days)					-	
2009/09/08 ~ 07/18 (41 days)		2009/09/08 ~ 07/18 (41 days)					-	
2009/10/15 ~ 11/28 (45 days)		2009/10/15 ~ 11/28 (45 days)					-	
2010/01/12 ~ 02/10 (30 days)		2010/01/12 ~ 02/10 (30 days)					-	
2007/08/02 ~ 09/15 (45 days)		2007/08/02 ~ 09/15 (45 days)					-	
2007/10/11 ~ 11/09 (30 days)	Evacuation and Dissemination (1)	2007/10/11 ~ 11/09 (30 days)	3.50				-	OYO International
2009/01/10 ~ 02/08 (30 days)		2009/01/10 ~ 02/08 (30 days)					-	
2008/05/18 ~ 07/13 (56 days)		2008/05/18 ~ 07/13 (56 days)			4.00		-	
2008/11/20 ~ 12/28 (39 days)		2008/11/20 ~ 12/28 (39 days)					-	
2009/01/15 ~ 02/05 (22 days)		2009/01/15 ~ 02/05 (22 days)					-	
2010/01/17 ~ 02/05 (30 days)		2010/01/17 ~ 02/05 (30 days)				0.67	0.67 (0.67)	
2007/09/03 ~ 10/04 (30 days)	Evacuation and Dissemination (2)	2007/09/03 ~ 10/04 (30 days)		2.00			-	Pacific Consultants International
2007/11/21 ~ 12/20 (30 days)		2007/11/21 ~ 12/20 (30 days)					-	
2008/10/19 ~ 11/17 (30 days)		2008/10/19 ~ 11/17 (30 days)			2.00		-	Oriental Consultants
2009/01/29 ~ 02/24 (30 days)		2009/01/29 ~ 02/24 (30 days)					-	

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Junko OKAMOTO	Community Disaster Management Organizations	2006/12/05~2007/01/18 (45 days)	1.50					
Ryo HAMAGUCHI	Administrative Institutions/Project Design	2007/02/18~03/16 (27 days)	0.90					
Hiroyuki MAEDA	GIS and Database Management	2007/02/25~03/11 (15 days)	0.50					-
		2007/10/16~11/29 (45 days)			2.50			-
		2008/02/11~03/11 (30 days)						-
		2008/08/14~09/12 (30 days)				2.00		-
		2009/01/29~02/27 (30 days)						-
		2009/06/27~07/26 (30 days)						-
		2009/09/05~11/18 (75 days)					4.50	4.50(3.5)
		2010/01/12~02/10 (30 days)						-
Akira INOUE	Damage Estimation	2007/07/12~08/10 (30 days)			2.00			-
		2008/01/24~02/22 (30 days)						-
		2009/01/19~02/17 (30 days)				1.00		-
Yoshiaki HISADA	QD&LE System	2007/10/06~10/11 (6 days)			0.20			-
Takashi KOMURA	Evacuation Drill	2008/05/29~06/19 (22 days)					0.73	-
Mayu IMAFUKU	Project Coordinator	2009/07/06~07/30 (25 days), 2010/01/07~02/10 (35 days)					2.00	2.00(0.83)

Note: All Staff of Pacific Consultants International (PCI) has belonged to Oriental Consultants Co., Ltd. (OC) since the business of PCI was transferred to OC as of

Annex - 6 List of Equipment Procured by the Japanese Side

SI No.	Date of Buying	Equipment (Specification)	Price (Thousand Yen)	Section for the equipment to be used	Installation Place	Usage of the Equipment
1-1	2006/12/02	Desktop PC 1 set	118	Output 2 & 3	JICA Expert Office of TDDMMO	in Use
1-2	2006/12/02	Leser Printer 1 set	196	Output 2 & 3	JICA Expert Office of TDDMMO	in Use
1-3	2007/10/29	Desktop PC 1 set	323	Output 2 & 3	JICA Expert Office of TDDMMO	in Use
2-1		Strong Motion Sensor 10 sets	3,256	Output 2	TDDMMO & Location of Sensor	in Use
2-2		Digitizer 10 sets	10,145	Output 2	TDDMMO & Location of Sensor	in Use
2-3		Communication Interface 10 sets	4,149	Output 2	TDDMMO & Location of Sensor	in Use
2-4		Monitoring PC 1 set	813	Output 2	TDDMMO	in Use
2-5		Acquisition Sensor 1 set	2,103	Output 2	TDDMMO	in Use
2-6		Software 1 set	740	Output 2	TDDMMO & Location of Sensor	in Use
2-7		MPLS Modem 10 sets	242	Output 2	TDDMMO & Location of Sensor	in Use
2-8		Satellite Modem 10 sets	3,767	Output 2	TDDMMO & Location of Sensor	in Use
2-9		UPS 10 sets	845	Output 2	TDDMMO & Location of Sensor	in Use
2-10		UPS 1 set	602	Output 2	TDDMMO	in Use
2-11		Cable 400m	333	Output 2	TDDMMO & Location of Sensor	in Use
		TOTAL	27,632			

Items	FY2006 ①	FY2007 ②	FY2008 ③	FY2009 (Plan) (Contract Price) ④	FY2009 (as of Dec.31) ⑤	Total (①+②+③+⑤)
1 General Cost	1,027,127	3,793,692	4,186,143	6,250,231	2,826,222	11,833,184
1.1 Staff Cost	413,529	2,004,859	1,788,824	2,550,164	859,533	4,866,545
1.2 Equipment Maintenance Cost	0	0	0	0	0	0
1.3 Consumable Cost	3,510	60,567	245,256	99,450	29,135	338,468
1.4 Travel Expense	0	0	0	0	0	0
1.5 Communication Cost	0	59,739	0	148,500	34,695	94,434
1.6 Document Preparation Cost	84,445	75,634	510,111	1,330,000	805,022	1,475,212
1.7 Rental Cost	525,643	1,592,893	1,608,412	1,977,997	1,153,717	4,880,665
1.10 Facility Maintenance Cost	0	0	0	0	0	0
1.11 Local Training Cost	0	0	0	0	0	0
1.12 Cost for Japanese Expert activities during Iranian Counterpart Training in Japan				144,120	144,120	144,120
1.14 Miscellaneous Cost	0	0	33,740	0	0	33,740
6 Equipment Cost (Other Equipment)	0	323,000	0		0	323,000
8 Report Preparation Cost (Printing and Binding)	359,000	105,000	12,000	13,400	0	476,000
9 Report Preparation Cost (Except Printing and Binding)	33,000	50,000	25,000	106,000	0	108,000
10 Local Consultant Cost	0	0	0		0	0
11 Local NGO Cost	0	0	0		0	0
12 Cost for Iranian Counterpart Training in Japan	0	0	0	4,074,000	3,760,864	3,760,864
Total	1,419,127	4,314,692	4,257,143	10,798,681	6,587,086	16,578,048



K.A.

C/P Name	Title	Field	Working Period	In case of transfer or turnover, present position or present job. The date of transfer or turnover.
Dr. Muzfar Hossain	Project Director	Disaster Management	Oct. 2006 - Now	-
Dr. Kamal Amal Hossain	Project Manager	Disaster Management	Oct. 2006 - Now	-
Mr. Masnur Navran	Deputy for Migration/Task 2	Disaster Management	April 2007 - Now	-
Mr. Ali Emam	Vice president of TDM MO/Task 1, 2 and 3	Disaster Management	Sep. 2008 - Now	-
Mr. A Huzefa Sabli	Project Coordinator/Team leader Task 3/ Task 1	Disaster Management	Oct. 2006 - Now	He is working now in TDM MO as advisor in ERCC
Mr. Abbas Farazi	Counter Part/Task 3	Disaster Management Int'l System Management	Oct. 2006 - June 2007	-
Ms. Shabbou Yazirpour	Counter Part/Task 3/Task 1	Community DM Org., Evacuation & dissemination	Oct. 2006 - Now	-
Ms. Solmaz Hossainpour	Counter Part/Task 3	Evacuation and dissemination	April 2008 - Feb. 2009	-
Ms. Armine A. Mahani	Counter Part/Task 3	Community DM Org., Evacuation & dissemination	April 2007 - Feb. 2009	-
Ms. Nafigeh Hakem I	Counter Part/Task 3	Community DM Org., Evacuation & dissemination	April 2007 - Feb. 2009	-
Ms. Ranyeh Khazak	Counter Part/Task 3/Task 1	Evacuation and dissemination	July 2007 - Now	-
Ms. Fatemeh Saleh	Counter Part/Task 3	Community DM Org., Evacuation & dissemination	06 - April 2007, August 2008	Presently as position at TDM MO; left in March 2008
Mr. Bijan Yazari	Counter Part/Task 3	Disaster Management	April 2007 - March 2008	-
Mr. Ali Nabi Zadeh	Counter Part/Task 3	Evacuation Drills	Sep. 2008 - Feb. 2009	-
Ms. Fatemeh Basfari	Counter Part/Task 3	Community Disaster Management Org. (CDMO)	Oct. 2007 - April 2007	She left the project after finalizing phase 1. Now working in domain of Education
Mr. Touraj Sedighian	Counter Part/Support/Task 3	Evacuation and dissemination	Oct. 2006 - Feb. 2009	-
Ms. Arzoolish Salimi	Counter Part/Support/Task 3	Evacuation Drills	July 2007 - Feb. 2009	-
Mr. Shahin Yegane	Counter Part/Support/Task 3	Emergency Response	Oct. 2006 - June 2007	He is working now in TDM MO; Deputy of Preparedness
Mr. Samim M. Roubakani	Counter Part/Support/Task 3	Emergency Response	April 2007 - Feb. 2009	-
Mr. Mehdiz Rahmani	Counter Part/Task 2 and 3	GIS and Database Management	April 2007 - August 2008	He is working now in ERCC Project
Mr. Abdolreza Amiriaziz	Team Leader/Task 2	Damage Estimation	Oct. 2006 - Now	-
Mr. Rahim Norouzi	Counter Part/Task 2	Seismograph Network	Oct. 2006 - Now	-
Mr. Mojtaba Ashrafi	Counter Part/Task 2	Seismograph Network	Feb. 2008 - Now	-
Mr. Hadi M. Afshar	Counter Part/Task 2	GIS and Database Management	June 2007 - April 2008	Presently no position at TDM MO; left for education April 2008
Mr. Mohammad Reza Kharazi	Counter Part/Task 2	Emergency Information and communication	April 2007 - June 2008	Presently no position at TDM MO; left to Disaster Management; June 2008
Dr. Farzad Yaminifard	Advisor/Task 2	QD&LE	Oct. 2006 - Now	-
Dr. Ali Mirodi	Advisor/Task 2	QD&LE	Oct. 2006 - Now	-
Mr. Hossain Ahmadvand	Counterpart/Task 2	QD&LE	March. 2009 - Now	-
Mr. Sattieh Mohammadi	Counterpart/Task 2	GIS and Database Management	Sep. 2009 - Now	-
Ms. Zohre Hamzali	Counterpart/Task 2	GIS and Database Management	Sep. 2009 - Now	-
Mr. Salma Karimi	Counterpart/Task 2	QD&LE	Sep. 2009 - Now	-
Mr. Hooman Motamed	Counterpart/Task 2	QD&LE	March. 2009 - Now	-
Mr. Seyed Alireza Shoja	Counterpart/Task 2	QD&LE	March. 2009 - Now	-
Mr. Arash Morizadeh	Counterpart/Task 2	QD&LE	March. 2009 - Now	-
Mr. Rajbani Ardi	Counterpart/Task 2	QD&LE	March. 2009 - Now	-

Local Cost Sharing

Items	FY2008	FY2009	Total	Remarks
(Personnel Expense)				
Personnel Services	94,000	169,000	263,000	
(Implementation Cost)				
Goods and Supplies	530,000	644,000	1,174,000	
Travel Expense and Per Diem		8,000	8,000	
Contracted Services	140,000	516,000	656,000	Contract Amount is USD 1,427,000 in Total
Total	764,000	1,337,000	2,101,000	