2. Examples of Standard Indicators and Typical Lessons (Measures against Disasters (Disaster Risk Reduction))

Models and Corresponding Sub-Targets of Mid-Term Objectives Shown in this Reference Book

Model name	Corresponding sub-target of mid-term objective
Model 1. Understanding Disaster Risks (Weather and Hydrology)	1-1-1. Understanding Disaster Risks (Weather and Hydrology)
Model 2. Understanding Disaster Risks (Volcanos)	1-1-1. Understanding Disaster Risks (Volcanos)
Model 3. Information Sharing Activities in Local Areas and Communities (Creating Hazard/Risk Maps, etc.)	1-1-2. Information Sharing Activities in Local Areas and Communities (Creating Hazard/Risk Maps, etc.)
Model 4. Developing Laws and Plans	1-2-1. Developing Laws and Plans
Model 5. Establishing and Strengthening Disaster Risk Management Systems (Establishing Collaboration System)	1-2-2. Establishing and Strengthening Disaster Risk Management Systems (Establishing Collaboration System)
Model 6. Establishing and Strengthening Disaster Risk Management Systems (Human Resource Development for Disaster Risk Reduction)	1-2-2. Establishing and Strengthening Disaster Risk Management Systems (Human Resource Development for Disaster Risk Reduction)
Model 7. Enhancing Mitigation Capacity with Structural Measures (against Earthquakes)	1-2-3. Enhancing Mitigation Capacity with Structural Measures (against Earthquakes)
Model 8. Enhancing Mitigation Capacity with Structural Measures (against Flood)	1-2-3. Enhancing Mitigation Capacity with Structural Measures (against Flood)
Model 9. Forecast and Warning, and Preparedness for Evacuation	1-2-4. Forecast and Warning, and Preparedness for Evacuation
Model 10. Establishing Emergency Response System	2-1-2. Establishing Emergency Response System

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)

Model (1): "Understanding Disaster Risks (Weather and Hydrology)"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
1. Development of disaster-resilient communities and societies	1-1. Understanding Disaster Risks	(1) Presence and number of hazard maps (2) Progress of organizing data on disasters caused (3) Progress of organizing information about annual damages and deaths (4) Presence of disaster scenarios, expected damage, GIS database, and systems	1-1-1. Understanding Disaster Risks (Weather and Hydrology)	(Proposed model description) To establish the meteorological and hydrological observation system (outcome). By providing training to staff related to meteorological and hydrological observation and improving the radar system in XX (country name) (output) Thereby contributing to the improvement of the disaster prevention system against meteorological and hydrological disasters (impact)		1) It is necessary to correctly grasp the previous disaster record and the possibilities of natural disasters that may occur in communities or society in the area in question. 2) It is important to completely understand the present conditions (geographical and geological features, and population) of the target area and its capabilities of preventing disasters (strength of buildings and disaster prevention structures).	• To ensure capacity enhancement of DMH and the Ministry of Agriculture and Forestry staff in observing and analyzing the data, and running and controlling the meteorological radar system, and to improve the information sharing system between related organizations By establishing a national system for providing the information properly and timely in Laos, Thereby contributing to accurate meteorological and hydrological information for natural disaster management, agricultural development, and transportation.	1. Project for Improvement Meteorological and Hydrological services for Lao PDR (Term of Cooperation: May 2006 to Oct. 2009)
				(Standard indicator examples) (Basic) 1. Indicator examples of overall goal (1) Improvement of observing, forecasting, and warning accuracy 2. Indicator examples of project purpose (1) Frequency of meteorological and hydrological observation (times/day) (2) Number of observation points (places/km^2) (3) Frequency of weather forecasts (times/day) (Supplementary) (1) Rain detection range and duration of rain data observation (for equipment procurement project)	(Basic) (1) Real time or several times a day? (2) How many standard indicators are included? (3) Presence or absence, and indicators (e.g. rainfall, temperature, humidity, and wind speed) (4) Example: Accuracy rate		• The objective is Meteorological disaster is reduced in East Asia including China and Japan, by means of The operational weather forecasting system of China strengthened through the development of numerical weather prediction models importing the data obtained by the quantitatively and qualitatively improved observation systems in the Tibet Plateau and its eastern surrounding area.	22. Japan-China Cooperation Center for Meteorological Disasters (Term of Cooperation: Aug. 2004 to June 2009)

				(MLIT of Japan) • Number of access to websites offering information about disaster prevention maps • Ratio of municipalities that create and announce hazard maps and deliver disaster prevention drills (World Bank) • Database of risk and vulnerability analyses is publicly available. (%) • At least 70% of sampled technical staff rate training under the Project as Satisfactory. (%)			• To make it possible to provide the more reliable and useful data at the right time By employing new weather analysis and forecast technology including numerical forecasts to improve weather forecasts and building up an early warning system for droughts and dzud (cold or snow damage) Thereby contributing to the use of meteorological information to control natural disasters and to assess the impact of climate change.	4. The Project for Development of Human Capacity for Weather Forecasting and Data Analyses in Mongolia (Term of Cooperation: Feb. 2005 to Oct. 2008)

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)
Model (2): "Understanding Disaster Risks (Volcanos)"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
1. Development of disaster-resilient communities and societies	1-1. Understanding disaster risks	(1) Presence and number of hazard maps (2) Progress of organizing data on disasters caused (3) Progress of organizing information about annual damages and deaths (4) Presence of disaster scenarios, prospected damage, GIS database, and systems (5) Progress of building up an observation network (6) Progress of building up a system for analyzing observation data	1-1-1. Understanding disaster risks (volcanos)	(Proposed model description To enhance the capacity of volcano monitoring at Mt. XXXXX (outcome) By collecting the volcanic activities data of Mt. XXXXX on a real time basis and improving the capacity for the Institute XXXXX to process, store and analyze volcanic activity data (output) Thereby contributing to the enhancement of the capacity of mitigating volcanic disasters (impact). (Standard indicator examples) (Basic) 1. Indicator examples of overall goal (1) Community's awareness of a reduction in the risk of suffering from natural disasters (2) Examples of government-community joint evacuation drills with hazard maps 2. Indicator examples of project purpose (1) Acquisition of data on volcanic activities in real time (0 → 1) (2) Improvement of the volcano monitoring agency's ability to process, accumulate, and analyze the information (3) Rise in the quality of the information to be delivered from the agency to organizations related to disaster prevention (The information is to be confirmed by using volcanic activity reports, etc.) (MLIT of Japan) • Ratio of real-time volcanic hazard maps developed (Hyogo Prefecture of Japan)	It is essential to evaluate the ability and establish the baseline in the Detailed Planning Study It is necessary to make approaches to utilization of research results of practical benefit by clarifying the collaboration and problems among the volcano observation institute, local government and residents through the interview with the disaster risk management authority and local governments.	1) It is necessary to grasp correctly the possibility of natural disasters including the history of disasters in the communities and societies in the target area. 2) It is important to understand completely the present conditions (geographical and geological features, and population) of the target area and the capabilities of responding disasters (strength of buildings and disaster prevention structures). 3) It is important to grasp how hazard maps are used and the extent to which the residents are aware of disaster risk in the target municipalities.	To enhance the capacity of volcano monitoring at Mt. Cotopaxi and Mt. Tungurahua By improving the capacity of IG (the Geophysical Institute at the National Polytechnic University)to monitor the volcanic activities including long-period and very-long-period events on real time basis at the volcanos, and to analyze precursory signals of eruptions, describing properly the results of the analyses in the volcanic activities reports and being received volcanic activities information from IGby the disaster prevention authorities concerned, Thereby contributing to the enhancement the capacity of mitigating volcanic disasters in Ecuador. To enhance the monitoring capabilities of PHIVOLCS on earthquakes and volcanos and to utilizing the improved disaster mitigation information by the disaster management authorities and related organizations By (1) obtaining improved earthquake information in real time, (2) improving accuracy of evaluation of earthquake generation potential, (3) obtaining integrated volcano monitoring information in real time and (4) providing improving disaster mitigation information through a portal site, Thereby contributing to the enhancement of the capabilities of disaster management authorities and related organizations which respond to earthquake and volcanic disasters.	13. Project for Enhancement of the Volcano Monitoring Capacity in Ecuador (Term of cooperation: May 1, 2004 to Apr. 30, 2009 after Prolongation) 23. Enhancement of Earthquake and Volcano Monitoring and Effective Utilization of Disaster Mitigation Information Project in the Philippines (Term of cooperation: Feb. 2010 to Feb. 2015 (5 years))

				• Ratio of people who know locations of shelters • Ratio of people who make preparations for disasters				

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)
Model (3): "Information Sharing Activities in Local Areas and Communities (Creating Hazard/Risk Maps, etc.)"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
1. Development of disaster-resilient communities and societies	1-1. Understanding disaster risks	(1) Presence and number of hazard maps (2) Progress of organizing data on disasters caused (3) Progress of organizing information about annual damages and deaths (4) Presence of disaster scenarios, expected damage, GIS database, and systems	1-1-2. Information sharing activities in local areas and communities (creating disaster hazard/risk maps, etc.)	(Proposed model description) To enhance school-based disaster education capacity (outcome) By enhancing capacity of the implementation of teacher training on disaster prevention education and establishing disaster management system of schools in XXXXX area (output) Thereby contributing to the enhancement of disaster education capacity for fostering the disaster risk management in basic and secondary schools (impact).		1) School based disaster prevention education is effective in sharing disaster risk with local residents and communities. In addition, it is necessary to make an idea to establish disaster prevention education in the actual education system by collaborating the ministry in charge of education and reflecting the education in the curriculum. 2) It is essential to provide the local residents and communities with the information on disaster risk in hazard map and disaster prevention map.	To enhance disaster education capacity for fostering awareness of school administrators and teachers in primary schools and of school administrators in Secondary Schools in the Project area (8 provinces in Marmara Region and 2 neighboring Provinces) By enhancing capacity of Master Teachers and administrators to be able to inform the knowledge to their colleagues regarding disaster education, improving supportive educational materials for teachers related with disaster education for basic education and establishing disaster management system of pilot basic and secondary schools which are suitable to their environment, Thereby contributing to the enhancement of disaster education capacity for fostering the disaster risk management in primary and secondary schools.	24. School-based Disaster Education Project in Turkey (Term of cooperation: Nov. 2010 to Oct. 2013)
				(Standard indicator examples) (Basic) 1. Indicator examples of overall goal (1) Enhancement of disaster prevention education in schools 2. Indicator examples of project purpose (1) More than XX elementary schools in the target area have a disaster prevention class as per the school management and emergency plan. (2) More than XX percent of the administrators of secondary schools in the target area raise awareness of disaster management. (Hyogo Prefecture of Japan) • Number of elementary and middle school children visiting the Disaster Reduction and Human Renovation Institution	(1) It is necessary to define the position of a disaster prevention class (regular or special one) before he implementation of project (otherwise, no effect can be measured). (2) It is essential to define the administrator and disaster prevention management concretely.		To strengthen the community-centered disaster management (CCDM) systems in the project area By developing organizational capacities of disaster management at provincial, district and commune level, a manual for promoting CCDM, appropriate technologies of low-cost small-scale structural measures against river bank erosion, and the supporting capacities of Ministry of Agriculture and Rural Development in disaster management to local governments, Thereby contributing to the strengthening measures in Central Vietnam against water-related disasters adapted to the exacerbating effects by global climate change.	10. Project for Building Disaster Resilient Societies in Central Region of Vietnam (Term of cooperation: Feb. 2009 to Feb. 2012)

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)

Model (4): "Developing Laws and Plans"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
1. Development of disaster-resilient communities and societies	1-2. Enhancing the capacity to cope with disasters in communities and society	(1) Progress of developing laws related to disaster prevention (2) Budget for disaster prevention (3) Presence of land use plans with disaster risks considered in mind (4) Progress of forming organizations and systems related to disaster prevention and number of organizations (5) Presence of contingency plans and number of such plans for communities (6) Ratio of anti-seismic buildings and presence of anti-seismic standards for disaster-prevention structures (7) Presence of forecasting and warning systems, ratio of residents knowing of them, and ratio of refugees (8) Shelter designating progress and number of shelters (9) Evacuation route designating progress and the number of routes	1-2-1. Developing laws and plans	(Proposed model description) To implement integrated flood control management based on the effective flood control plan (outcome) By establishing the plan according to the role of related organizations and strengthening the monitoring and collaboration, (output) Thereby contributing to the flood damage reduction in the basin (impact) (Standard indicator examples) 1. Indicator examples of overall goal (Basic) (1) Implementation of integrated measures for disaster risk reduction (2) Progress of developing laws related to disaster risk reduction 2. Indicator examples of project purpose (1) Presence of integrated plan for disaster risk reduction (2) Disaster risk reduction plan has been set up in municipalities as planned? (3) Budget and personnel on disaster risk reduction have been increased? (4) The structure in central government for disaster prevention education has been established? (5) Evacuation plan has been elaborated? (Supplementary) (1) Establishing the coordination organization for each organization which implements disaster risk reduction plan (national and local governments, NGOs, and residents)		1) In principle the central government has a leadership in establishing laws and planning and it is necessary to consider the improvement of the community's capacity to coping with disasters 2) It is necessary to consider the planning on disaster risk reduction at central, provincial, municipal and community level according to the laws, which is the foundation of the disaster risk reduction plan and to secure the continuity of each plan. In that case, it is indispensable to clarify differences in role of each organization and to let them cooperate with each other when necessary (in many cases, central disaster management organization cannot order to other organization such as local governments to make a plan).	To take overall measures against flood to be taken according to the comprehensive flood management plan (CFM) in the Project area By (1) clarifying respective roles of organizations related to CFM, (2) formulating the Comprehensive Flood Management Action Plan (CFMAP) including the action plans of related organizations, (3) establishing the mechanism for monitoring, evaluation and feedback for CFMAP and (4) establishing sustainable coordination and collaboration mechanism among river basin stakeholders (central and local governments), Thereby contributing to implementing the comprehensive flood management measures	2. Project for Capacity Development of Jakarta Comprehensive Flood Management in Indonesia (Term of cooperation: Oct. 2010 to Oct. 2013)

				(World Bank) • Disaster preparedness and effective response is strengthened by adopting a disaster risk management plan (Text) • Standard methodology for municipal development and territorial planning developed and disseminated (Number, 0->1)	Clarification of the roles of related organizations (central and local governments) and the possibility of its agreement Organization, technical level, and budget of the executing agency Effectiveness of laws and regulations	3) Even if some countries have laws and plan on disaster risk reduction, they face many problems on illegal buildings and residence in the controlled areas. It is necessary to consider how to guarantee the effectiveness always such as raising resident's awareness and developing related laws. Synchronizing planning with adequate budget allocation makes it possible to devise ideas for inspiring incentives to planning (e.g. a policy matrix of"Stand-by Emergency Credit for Urgent Recovery (SECURE)"). Moreover, in the planning stage it is necessary to consider the monitoring and revising mechanism.	To strengthen the capacity on disaster risk reduction and management (DRRM) of the Office of Civil Defense (OCD) By (1) improving the ability to make and implement plans through support to developing a national disaster risk reduction and management plan (NDRRMP) and laws, (2) standardizing DRRM activities including information management, (3) strengthening system and capacity on DRRM education and training and (4) strengthening the support system to community based DRRM, Thereby contributing to the improvement of DRRM activities to be conducted by the Government of the Philippines.	28. Disaster Risk Reduction and Management (DRRM) Capacity Enhancement Project s in the Philippines (Term of cooperation: Mar. 2012 to Feb. 2015)

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)
Model (5): "Establishing and Strengthening Disaster Risk Management Systems (Establishing Collaboration System)"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
1. Development of disaster-resilient communities and societies	1-2. Enhancing the capacity to cope with disasters in communities and society	(1) Progress of developing laws related to disaster prevention (2) Budget for disaster prevention (3) Presence of land use plans with disaster risks considered in mind (4) Progress of forming organizations and systems related to disaster prevention and number of organizations (5) Presence of contingency plans and the number of such plans for communities (6) Ratio of anti-seismic buildings and presence of anti-seismic standards for disaster-prevention structures (7) Presence of forecasting and warning systems, ratio of residents knowing of them, and ratio of refugees (8) Shelter designation progress and number of shelters (9) Evacuation route designating progress and the number of routes	1-2-2. Establishing and Strengthening Disaster Risk Management Systems(Establishing Collaboration System)	(Proposed model description) To enhance school-based disaster education capacity (outcome) By enhancing capacity of the implementation of teacher training on disaster prevention education and to establish disaster management system of schools in XXXXX area (output) Thereby contributing to the enhancement of disaster education capacity for fostering the disaster risk management in elementary and secondary schools in the country (impact) (Standard indicator examples) 1. Indicator examples of overall goal (Basic) (1) Are the roles of stakeholders clarified legally? (2) Does the budget for disaster risk reduction is increasing? (3) The viewpoint of disaster risk reduction has been included in land use and city plans? 2. Indicator examples of project purpose (Basic) (1) Examples of evacuation drills in collaboration between governments and communities. (World Bank) ・ At least XX participating municipalities have adopted Disaster Risk Management, Land Use Plans and Emergency Plans based on the Project's participatory methodology(Number)		1) Activities on disaster risk reduction require sharing the information from various public organizations and coordinating among various organizations. It may be effective to set up a central disaster management organization which plays a role of the overall coordination. It is indispensable to clarify the role of each stakeholder and to establish cooperation structure, because in several cases, executive organizations and ministry in charge of disaster risk reduction such as central disaster risk reduction agency. It is essential to support the establishment of the disaster risk reduction activities in central government such as existing mechanism of budget execution. 2) It is necessary to define the activities and responsibility of each organization by establishing guideline as well as laws on the collaboration among public and private sectors, and academic institutions because the public sector cannot sufficiently act alone to cope with disasters.. Many people are involved in disaster risk reduction such as the head of the State, public officials at municipality level, academia and community. Therefore expertise of every area and level, technical education, raising awareness and human resource development are necessary.	To strengthen communities' and municipal authorities' capacity for disaster risk management in the target communities of the Central American countries (Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama) and the capacity of CEPREDENAC members for promoting local disaster risk management By selecting the target communities and promoting knowledge of disaster risk management Thereby contributing to the common utilization of the information, knowledge and methodologies on local disaster risk management in Central America in different areas in the region. • To improve integrated disaster management capacity of Caribbean Disaster Emergency Response Agency (CDERA) By establishing and functioning well the mechanism for preparation of hazard maps and community disaster management plan with CDRA, RT and NT's active participation, Thereby contributing to the mitigation of disaster damage in the Member States of CDERA.	5. Project on Capacity Development for Disaster Risk Management in Central America "BOSAI" (Phase 1) (Term of Cooperation: May 2007 to May 2012) 6. Caribbean Disaster Management Project (Term of Cooperation: Aug. 2002 to Mar. 2006)

							• To become able to plan and implement disaster mitigation measures to reduce the impacts of sediment related disasters on village in volcanic areas, By establishing planning and implementing methodologies of sediment related disaster mitigation measures through the cooperation between engineers on disaster mitigation and local residents and establishing training programs for engineers involved in sediment related disaster mitigation, Thereby contributing to the implementation the integrated sediment related disaster mitigation measures in hazardous areas.	14. Integrated Sediment Disaster Management Project for Volcanic Area in Indonesia (Term of Cooperation: Apr. 2001 to Mar. 2006)
							To strengthen the community-centered disaster management (CCDM) systems in the project area By developing organizational capacities of disaster management at provincial, district and commune level, a manual for promoting CCDM, appropriate technologies of low-cost small-scale structural measures against river bank erosion, and the supporting capacities of Ministry of Agriculture and Rural Development in disaster management to local governments, Thereby contributing to the strengthening measures in Central Vietnam against water-related disasters adapted to the exacerbating effects by global climate change.	10. Project for Building Disaster Resilient Societies in Central Region of Vietnam (Term of Cooperation: Feb. 2009 to Feb. 2012)
							To strengthen the capacity on disaster risk reduction and management (DRRM) of the Office of Civil Defense (OCD), By (1) improving the ability to make and implement plans through support to developing a national disaster risk reduction and management plan (NDRRMP) and laws, (2) standardizing DRRM activities including information management, (3) strengthening system and capacity on DRRM education and training and (4) strengthening the support system to community based DRRM, Thereby contributing to the improvement of DRRM activities to be conducted by the Government of the Philippines.	28. Disaster Risk Reduction and Management (DRRM) Capacity Enhancement Project s in the Philippines (Term of cooperation: Mar. 2012 to Feb. 2015)

							• To enhance the capacity on disaster management of DDPM By establishing the system which enables the collection, accumulation and utilization of information on disaster and disaster risk management, strengthening relationship and communication between DDPM and other relevant organizations and enhancing capacities of DDPM staff, Thereby contributing to the improvement of the disasters risk management against future disasters at central, provincial capacity and community level.	16. Project on Capacity Development in Disaster Management in Thailand (Term of cooperation: Aug. 2006 to Aug. 2008)
							• To enhance the capacity of DDPM to scale up disaster prevention and mitigation action plans, community based disaster risk management (CBDRM) and disaster education, collaborating with concerned agencies, provincial and local levels, By implementing and improving "disaster prevention and mitigation action plans", CBDRM and disaster education in schools in the model sites, Thereby contributing to improving and scaling up of the implementation of disaster risk management activities.	17. The Project on Capacity Development in Disaster Management in Thailand (Phase2) (Term of cooperation: May 2010 to May 2014)
							• To prepare a model for complete communication network in disaster observation, forecasting and community level activities including evacuation in the pilot areas, By (1) strengthening the leadership and coordination capacity of the Disaster Management Center, (2) enhancing the analysis and monitoring capacity of DOM, (3) enhancing the analysis and monitoring capacity of NBRO, (4) transferring regularly disaster management information and (5) improving disaster management capacity of districts, divisions and communities in the pilot areas, Thereby contributing to the disseminating the disaster management model.	3. Disaster Management Capacity Enhancement Project Adaptable to Climate Change in Sri Lanka (Term of cooperation: Jan. 2010 to Jan. 2013 (3 years))

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)

Model (6): "Establishing and Strengthening Disaster Risk Management Systems (Human Resource Development for Disaster Risk Reduction)"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
1. Development of disaster-resilient communities and societies	1-2. Enhancing the capacity to cope with disasters in communities and society	(1) Progress of developing laws related to disaster prevention (2) Budget for disaster prevention (3) Presence of land use plans with disaster risks considered in mind (4) Progress of forming organizations and systems related to disaster prevention and number of organizations (5) Presence of contingency plans and number of such plans for communities (6) Ratio of anti-seismic buildings and presence of anti-seismic standards for disaster-prevention structures (7) Presence of forecasting and warning systems, ratio of residents knowing of them, and ratio of refugees (8) Shelter designating progress and number of shelters (9) Evacuation route designating progress and the number of routes	1-2-2. Establishing and reinforcing disaster risk reduction structure (human resource development for disaster risk reduction)	(Proposed model description) To enhance school-based disaster education capacity (outcome) By enhancing capacity of the implementation of teacher training on disaster prevention education and to establish disaster management system of schools in XXXXX area (output) Thereby contributing to the enhancement of disaster education capacity for fostering the disaster risk management in primary and secondary schools (impact). (Standard indicator examples) (Basic) 1. Indicator examples of overall goal (1) Training is given to XX instructors in total for senior and junior engineers in YYYY (year). (2) ZZ percent of the trained instructors play a leading role. (3) XX Irrigation administrators and engineers improve their knowledge and skills. 2. Indicator examples of project purpose (1) Training is given to XX instructors in total for senior and junior engineers in YYYY (year).		1) Activities on disaster risk reduction require sharing the information from various public organizations and coordinating among various organizations. It may be effective to set up a disaster management center which plays a role of the overall coordination. 2) It is necessary define the activities and responsibility of each organization by establishing guideline as well as laws on the collaboration among public and private sectors, and academic institutions because the public sector cannot sufficiently act alone to cope with disasters. Many people are involved in disaster risk reduction such as the head of the State, public officials at municipality level, academia and community. Therefore expertise of every area and level, technical education, raising awareness and human resource development are necessary.	• To train the instructors who train middle and primary level engineers in the Human Resource Development Center, Ministry of Water Resource By establishing training courses for training instructors, Thereby contributing to the enhancement of the knowledge and skills of administrators and engineers in charge of water resource. To strengthen the community-centered disaster management (CCDM) systems in the project area By developing organizational capacities of disaster management at provincial, district and commune level, a manual for promoting CCDM, appropriate technologies of low-cost small-scale structural measures against river bank erosion, and the supporting capacities of Ministry of Agriculture and Rural Development in disaster management to local governments, Thereby contributing to the strengthening measures in Central Vietnam against water-related disasters adapted to the exacerbating effects by global climate change.	15. Human Resource Development Project for Water Resources, P.R.China (Term of Cooperation: July 2000 to June 2007) 10. Project for Building Disaster Resilient Societies in Central Region of Vietnam (Term of Cooperation: Feb. 2009 to Feb. 2012)

				(Hyogo Prefecture of Japan) ・ Ratio of community leaders trained on disaster risk reduction (World Bank) ・ Training for engineers program developed (Text) ・ At least 70% of sampled technical staff rate training under the Project as Satisfactory.(%)			• To prepare a model for complete communication network in disaster observation, forecasting and community level activities including evacuation in the pilot areas, By (1) strengthening the leadership and coordination capacity of the Disaster Management Center, (2) enhancing the analysis and monitoring capacity of DOM, (3) enhancing the analysis and monitoring capacity of NBRO, (4) transferring regularly disaster management information and (5) improving disaster management capacity of districts, divisions and communities in the pilot areas, Thereby contributing to the disseminating the disaster management model.	3. Disaster Management Capacity Enhancement Project Adaptable to Climate Change in Sri Lanka (Term of cooperation: Jan. 2010 to Jan. 2013 (3 years))

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)
Model (7): "Enhancing Mitigation Capacity with Structural Measures (against Earthquakes)"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
1. Development of disaster-resilient communities and societies	1-2. Enhancing the capacity to cope with disasters in communities and society	(1) Progress of developing laws related to disaster risk reduction (2) Budget for disaster risk reduction (3) Presence of land use plans responding to disaster risks (4) Organizations and structure related with disaster risk reduction, and the number of organizations (5) Presence of disaster risk reduction plan and the number of disaster risk reduction plans for communities (6) Ratio of anti-seismic buildings and presence of anti-seismic standards for disaster-prevention structures (7) Presence of forecasting and warning systems, ratio of residents who know knowing the system and ratio of evacuation of residents (8) Designation and number of shelters (9) Evacuation route designation and the number of routes	1-2-3. Enhancing mitigation capacity with structural measures (against earthquakes)	(Proposed model description) To enhance for disseminating capacity of anti-seismic housing for low and middle income residents (outcome) By establish the draft technical building code by the Ministry of XXXX and sustainable dissemination system of the anti-seismic housing in pilot areas (output) Thereby contributing to making the abovementioned building code obligatory and improving the dissemination system of the anti-seismic housing out of the pilot areas (impact) (Standard indicator examples) 1. Indicator examples of overall goal (Basic) (1) The standard for developed methods is enforced. (2) The dissemination activity on enhanced anti-seismicity of housing by central and local governments is spread to other areas. 2. Indicator examples of project purpose (Basic) (1) The building code (draft) and technical manual are developed and approved. (2) More than XX administrative organizations give instruction for building houses based on the technical standard and manual.	(Basics) 2. (1) It is important not only to develop the manual but also for the government to approve it.	1) Structural measures can reduce disaster risk to a certain extent but cannot avoid it completely. It is important to mix the structural and non-structural measures appropriately for the target areas for more effective disaster risk reduction. 2) Training maintenance staff, obtaining a budget, and performing maintenance with communities are important to the tangible measures.	• To enhance earthquake-resistance popular housing By establishing the facilities for earthquake-resistant testing on popular housing and the test implementation system, training researchers and technicians of the implementing institutions on the implementation of earthquake-resistant tests and establishing the dissemination system of earthquake-resistant popular housing models, Thereby contributing to reducing earthquake-related disasters to low-income population • To achieve the improvement and dissemination of technology for reducing building collapse in case of great earthquakes By developing and acquiring effective and low-cost retrofit techniques, improving regulations/codes concerning seismic issues for both new building and existing ones, developing and acquiring post-earthquake evaluation techniques of the damaged buildings, and improving disaster prevention education for the citizens, Thereby contributing to the strengthening measures against earthquake-induced disasters in Romania.	18. Enhancement of the Construction Technology and Dissemination System of the Earthquake-Resistant "Vivienda Social" in El Salvador (Term of cooperation: Apr. 2009 to Mar. 2012) 19. The project on the reduction of seismic risk for buildings and structures in Romania (Term of cooperation: Oct. 2002 to Sept. 2007)

				(MLIT of Japan) • Anti-seismic ratio of the building utilized by many people and houses (1: Building; 2: House) (Hyogo Prefecture of Japan) • Anti-seismic ratio of the building owned by the prefectural government • Ratio of the area where its problems have been improved in terms of disaster risk reduction in densely old residential area (World Bank) • Disaster Risk Management (DRM)-related databases (dam, building codes) established and maintained (Number) • EU-compatible building codes, including seismic compliance developed (Text)				

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)

Model (8): "Enhancing Mitigation Capacity with Structural Measures (against Flood)"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
1. Development of disaster-resilient communities and societies	1-2. Enhancing the capacity to cope with disasters in communities and society	(1) Progress of developing laws related to disaster prevention (2) Budget for disaster prevention (3) Presence of land use plans with disaster risks considered in mind (4) Progress of forming organizations and systems related to disaster prevention and the number of organizations (5) Presence of contingency plans and the number of such plans for communities (6) Ratio of anti-seismic buildings and presence of anti-seismic standards for disaster-prevention structures (7) Presence of forecasting and warning systems, ratio of residents knowing of them, and ratio of refugees (8) Shelter designation progress and the number of shelters (9) Evacuation route designation progress and the number of routes	1-2-3. Enhancing mitigation capacity with structural measures (against flood)	(Proposed model description) To let the Ministry of YY improve the ability to construct and maintain the structures (outcome). By implementing a pilot project according to developed technical standards, guidelines, and manuals (output) Thereby contributing to the construction and maintenance of properly designed river structures in XX (country name) (impact) (Standard indicator examples) 1. Indicator examples of overall goal (1) Regular review of the technical standard and manual (times/year) (2) Ratio of structures constructed as per the design standard (%) 2. Indicator examples of project purpose (1) Extent to which the counterpart understands the technical standards and manual (2) Number of river structures constructed the at pilot site (MLIT of Japan) • Ratio of zones protected from flood • Number of houses having a flood risk above the floor in areas having a central or focal function • Total area of regions that have a flood risk due to the collapse of guard facilities, such as river embankments or coastal levees, when an earthquake occurs • Ratio of municipalities that develop and announce hazard maps and deliver disaster drills (river) • Ratio of municipalities that create and announce hazard maps and deliver disaster prevention drills (flood) • Ratio of water systems in which an advanced infrastructure of disaster prevention information is constructed • Number of houses that were inundated above the floor in recent years and that still have such a risk • Ratio of river management facilities whose lives has been extended • Number of rivers in which overall earth control reduces earth flows (river) • Index of addressing the low flow rate of rivers		1) Tangible measures can reduce disaster risks to a certain extent but cannot prevent any disaster completely. Stronger suppression force requires a combination of tangible and intangible measures suitable to the area in question. 2) Training maintenance staff, obtaining a budget, and performing maintenance with communities are important to the tangible measures.	• To strengthen the departments' function of flood administration By implement of the technical standards, guidelines and manuals in pilot project, survey, research, and training, building up an establishment of information management System is for a more effective flood management function of DPWH and personnel training of DPWH on flood control and sabo engineering The objective is The flood management function of DPWH is strengthened through research and development, training, information management, implementation of pilot projects and creation of the internal support mechanism . • To take the actions effectively By improving the ability to survey, plan, design, implement, monitor, evaluate, and maintain the measures as well as learning wide-area knowledge about river engineering necessary Thereby contributing to capacity improvement of the staff of the target group on riverbank protection measures with reasonable cost and environmental friendly ways. • To enhance the development of local governments By developing organizational capacities of disaster management at provincial, district, and commune levels, manual for promoting CCDM, appropriate technologies of low-cost small-scale structural measures against river bank erosion, and MARD's supporting capacities in disaster management Thereby contributing to that community-centered disaster management (CCDM) systems are strengthened in the project area..	9. Strengthening the Flood Management Function of DPWH in the Philippines (Term of Cooperation: July 2005 to June 2010) 11. The Project on Riverbank Protection Works (Phase 2) in Laos (Term of Cooperation: Oct. 2010 to Oct. 2014) 10. Project for Building Disaster Resilient Societies in Central Region in Vietnam (Term of Cooperation: Feb. 2009 to Feb. 2012)

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)
Model (9): "Forecast and Warning, and Preparedness for Evacuation"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
1. Development of disaster-resilient communities and societies	1-2. Enhancing the capacity to cope with disasters in communities and society	(1) Progress of developing laws related to disaster prevention (2) Budget for disaster prevention (3) Presence of land use plans with disaster risks considered in mind (4) Progress of forming organizations and systems related to disaster prevention and the number of organizations (5) Presence of contingency plans and the number of such plans for communities (6) Ratio of anti-seismic buildings and presence of anti-seismic standards for disaster-prevention structures (7) Presence of forecasting and warning systems, ratio of residents knowing of them, and ratio of refugees (8) Shelter designation progress and the number of shelters (9) Evacuation route designation progress and the number of routes	1-2-4. Forecast and warning, and preparedness for evacuation	(Proposed model description) To issue a forecast and warning as well as to take evacuation measures at the pilot site (outcome). By letting the organization in charge of disaster prevention (e.g. the city or disaster prevention center) improve the ability to (1) give instructions to related groups, (2) collect and analyze information about disaster prevention*, (3) run the early warning system, and (4) work at the pilot site (output) Thereby contributing to spreading prepared measures to outside of the pilot region (impact) * The information includes weather, hydrology, earthquakes, and cities, etc. (Standard indicator examples) (Basic) 1. Indicator examples of overall goal (1) Coverage of disaster information (2) Disaster information transmission speed (3) Accuracy rate of disaster forecasts and warnings 2. Indicator examples of project purpose (1) Frequency at which disaster information is sent (times/day) (MLIT of Japan) • Ratio of municipalities that develop and announce hazard maps and deliver disaster drills (Hyogo Prefecture of Japan) • Ratio of people who know of a shelter when a disaster occurs • Ratio of people who make preparations for disasters		1) The lives of residents cannot be saved only by issuing a disaster forecast and warning correctly, so the government shall take measures in combination with an evacuation system for sending disaster information to community-by-community residents quickly and correctly, announcing the method of prompting them to evacuate, and preparing shelters. It is necessary to promote risk communication by sharing expected risks and measures against them between all levels of persons, such as clarifying the disaster prevention roles (public, mutual, and self aid) of the administration, communities, and residents as well as sharing the worst damage forecast made at the present time. 2) Particularly in an area where no information and communication network is built, only waiting for disaster information from the administration may result in a delay in evaluation. Therefore, it is necessary to build up a system in which not only the administration but also the community itself can monitor the disaster, issue a forecast and warning, and issue an evacuation order. 3) The method of sharing disaster information with residents varies depending on information transmission means (TV, radio, cell phone, wireless, and siren) available to the residents, the type of disaster, and communities. Accordingly, it is important to grasp the	• To establish the model in the areas in question By (1) helping the disaster prevention-related organs improve the ability to give guidance and coordination (mainly flood and earth flow) to the disaster prevention center, (2) letting the Meteorological Bureau improve the ability to observe, analyze, and forecast weather, (3) helping the National Construction Research Institute improve the ability to take measures against earth-flow disasters, (4) operating the early warning and evacuating system properly, and (5) helping the three pilot areas (prefecture, district, and community) raise the level of disaster prevention competence Thereby contributing to the spread of the disaster prevention system model, which ranges from disaster observation and forecast to residents' disaster prevention activities and evacuation, to outside of the pilot area in Sri Lanka. • To implement measures in Tehran City By strengthening preventive measures against the occurrence of large-scale earthquakes concerning the following three fields: road management, community disaster prevention, and the early warning system Thereby contributing to the improvement of comprehensive earthquake disaster management. • To build up both central and local systems for allowing residents to evacuate from a flood in the community By helping the National Disaster Management Bureau improve the ability to manage disaster prevention, the departments in charge of weather and hydrology improve the capability of making a flood forecast, and the community, in which the pilot project runs, strengthen the ability to take measures against disasters through educational activities for disaster prevention	3. Project for Improving the Ability to Take Action against Disasters due to Climate Change in Sri Lanka (Term of Cooperation: Jan. 2010 to Jan. 2013 (3 years)) 7. Project for Mitigating Seismic Disasters in Tehran in Iran (Term of Cooperation: Apr. 2012 to Feb. 2015) 26. Project for Helping Oceania Communities Raise the Disaster Prevention Competence in the Republic of Fiji and the Solomon Islands (Term of Cooperation: Oct. 2010 to Sept. 2013)

						characteristics of the area in question sufficiently. 4) Damage to residents cannot be mitigated if they share disaster information but make no appropriate preparation for evacuation. Therefore, the administration shall conduct educational activities as a whole, such as holding a disaster drill.	Thereby contributing to the enhancement of the system for evacuating residents properly when a flood occurs to outside the area in question. • To improve the capability of taking non-structural measures against flood and drainage throughout the area By improving the ability to control and maintain rivers, to collect and analyze data on flood control, to develop and improve flood hazard maps, and to take action against runoffs Thereby contributing to planning and taking measures to reduce a flood risk in the Jakarta Metropolitan area of Indonesia. • To make it possible to provide the more reliable and useful data at the right time By employing new weather analysis and forecast technology including numerical forecasts to improve weather forecasts and building up an early warning system for droughts and dzud (cold or snow damage) Thereby contributing to the use of meteorological information to control natural disasters and to assess the impact of climate change • To improve the capability of issuing a correct forecast and warning during water discharge from the dams By collecting, accumulating, organizing, and analyzing hydrological and meteorological data to estimate the amount of water flowing into dams, strengthening the sharing of information and knowledge between the members of the Joint Operation and Management Committee and the stakeholders, and improving the ability to maintain hydrological and meteorological observation units Thereby contributing to the mitigation of flood damage in the area in question.	20. Project for Strengthening the Flood Disaster Mitigation Organization in the Jakarta Metropolitan Area of Indonesia (Term of Cooperation: Feb. 2007 to Jan. 2010) 4. Human Resource Development Project for Weather Forecasts and Data Analyses in Mongolia (Term of Cooperation: Feb. 2005 to Oct. 2008) 25. Project for Improving the Ability to Issue Flood Forecasts and Warnings during Water Discharge from Dams in the Philippines (Term of Cooperation: Mar. 2009 to Feb. 2012) 21. Disaster Management Project in the Caribbean Sea (Phase 2) (Term of Cooperation: July 2008 to June 2011)

JICA standard indicator reference and typical lessons learned in technical cooperation projects (Disaster Risk Reduction)

Model (10): "Establishing Emergency Response System"

Development strategic objective	Mid-term objective	Indicators at a program goal level	Mid-term sub-target	Overall goals/Project purpose and indicator examples	Methods/Policies for setting indicators	Typical lessons learned	Example of project purpose (image of projects)	Reference projects
Country assistance policy	**Development thematic issue level to which the cooperation program corresponds**	**Connection with the target years or indicators in sector/regional development plans by the recipient country's government**	**Level of thematic issue to solve in individual projects**	**To . . . (outcome) By/through . . . (output) Thereby contributing to (impact) Indicator examples**	**Ways of thinking, points to remember, and important points in setting indicators**	**Write in lessons and risks to be necessarily used or reflected in implementing projects corresponding to the "mid-term sub-targets" from the perspectives of: 1) planning stages, and 2) management.**	**Examples of project purpose**	**Project information with good practices to refer to**
2. Delivering temporary response to victims quickly and effectively [lifesaving]	2-1. Establishing emergency response system	(1) Progress of forming disaster prevention-related organizations and their number (2) Progress of installing disaster action centers (presence, laws, and action plans) (3) Clarification of the roles and responsibilities of the organizations	2-1-2. Establishing emergency response system	(Proposed model description) To strengthen the center's capability of delivering training courses for temporary response and rescue technologies (outcome). By helping the instructors of the Seismic Emergency Rescue Center of XX (country name) and the model province improve the ability to teach temporary response and rescue technologies (output) Thereby contributing to spreading the system and mechanism of taking temporary response and rescues to outside of the model province (impact) (Standard indicator examples) 1. Indicator examples of overall goal (Basic) (1) Local governments outside of the model province hold a temporary response drill more than X times. (2) Local governments outside of the model province hold rescue training more than X times. 2. Indicator examples of project purpose (1) The center can offer the standard curriculum of temporary response and rescue technologies (Baseline value: 0 → Target: 1). (2) More than YY instructors can train others in temporary response technology. (3) More than YY instructors can train others in rescue technology. (4) The center improves the ability to deliver training in both technologies. (World Bank) • No. of Gov. staff trained at the national and provincial levels (Number)		1) It is necessary to deliver limited resources to victims correctly, which should give importance to building up the system in consideration of supporting flows from the inside and outside of the country to the disaster area, confusion in receiving procedures, and international cooperation friction caused by cultural and habitual differences.	• To strengthen the center's capabilities of taking temporary response and of delivering training in rescue technology By helping (1) the instructors of NERSS (Chinese seismic emergency rescue center) improve the ability to deliver training in temporary response, (2) the model province improve the ability to take temporary measures, (3) the trainers of the center improve the ability to give training in rescue technology, (4) the leaders of provincial emergency earthquake rescue teams improve the ability to give technical guidance Thereby contributing to spreading the system and mechanism of taking temporary measures and rescues to outside of the model province. •To modify the City's emergency action plan and to build up an emergency action system to implement the modified plan By developing a QD&LE (Quick Damage and Loss Estimation) system and building up a system in which residents take temporary action after the seismic disaster Thereby contributing to allowing Tehran City to improve the ability to take temporary action within 72 hours after an earthquake	27. Japan-China Joint Project for Strengthening the Emergency Rescue Competence against Earthquakes in P.R.China (Term of Cooperation: Oct. 2009 to Mar. 2013) 8. Project for Making a 72-hour Emergency Action Plan after an Earthquake in Iran (Term of Cooperation: Oct. 2006 to Mar. 2009)