Internal Ex-Post Evaluation for Development Planning Project

conducted by Nepal Office: June, 2023

Country Name	Project for Assessment of Earthquake Disaster Risk for the Kathmandu Valley
Nepal	

I. Project Outline

Background	Although the Kathmandu Valley (KV) in Nepal had experienced several disastrous earthquakes in the past, countermeasures such as retrofitting of buildings for seismic resistance, etc. had not been promoted enough. The JICA's development study titled "Kathmandu Basin Earthquake Disaster Mitigation Planning Study" (2002) conducted a seismic risk assessment and estimated damages to residents and buildings. Since then, the population and buildings had increased in the KV, but the risk assessment results had not been updated, making it difficult for the Government of Nepal (GON) to consider policies and plans based on the concrete data.		
Objectives of the Project	This project aims (i) to conduct a seismic hazard analysis for the KV utilizing the latest knowledge, (ii) to conduct a seismic risk assessment based on the hazard analysis results and summarize the risk assessment results as damage estimation by considering multiple scenarios, (iii) to enhance the system for updating the risk assessment results in accordance with the social environment change in the future, and (iv) to develop models for Build Back Better recovery and reconstruction plan (BBBRRP)[1] utilizing the hazard analysis results and local disaster risk management plan based on the risk assessment results in Nepal, thereby contributing to the reduction of earthquake disaster risk through the implementation of projects based on development plans and relevant policies formulated by the central and local governments reflecting and utilizing the risk assessments results produced by the project.[2] 1. Expected Goals through the proposed plan[3]: Earthquake disaster risk is reduced through the implementation of projects based on development plans and related policies formulated by the central and local governments.		
Activities of the Project	1. Project site: Kathmandu Valley (20 municipalities[4] in Kathmandu District, Lalitpur District, and Bhaktapur District). 2. Main activities: Seismic hazard analysis for the KV; seismic risk assessment based on the hazard analysis results and summarization of the risk assessment results as damage estimation; enhancement of system for updating the risk assessment results in accordance with the social environment change; development of BBBRRPs utilizing the hazard analysis results and Local Disaster and Climate Resilience Plans (LDCRPs) based on the risk assessment results for the 3 pilot municipalities.[5] 3. Inputs (to carry out above activities) Japanese Side 1) Mission members: 20 persons 2) Trainees received: 35 persons Nepalese Side 1) Staff allocated		
Project Period	(ex-ante) March 2015-February 2018 (actual) May 2015-April 2018	Project Cost	(ex-ante) 404 million yen, (actual) 566 million yen
Implementing Agency	Ministry of Urban Development (MoUD)[6]		
Cooperation Agency in Japan	Oriental Consultants Global Co., LTD.; OYO International Corporation		

II. Result of the Evaluation

<Constraints on Evaluation>

- During the field survey, it was found that the federal lead agency for seismic risk assessment was changed from MoUD to National Disaster Risk Reduction and Management Authority (NDRRMA). Due to time constraints, it was difficult to collect information for NDRRMA sufficiently.

< Special Perspectives Considered in the Ex-Post Evaluation >

- As for Output 3 ("System for updating the risk assessment results in accordance with the social environment change in the future are enhanced"), the term "system", which is a literal English translation of "taisei" used in the Japanese Ex-ante Evaluation Sheet and Final Report, was interpreted as "capacity/skills" because (i) the terms used in the corresponding parts in the R/D and the English Final Report are "capacity of the required personnel" and "skills" respectively and (ii) the survey items in the Ex-ante Evaluation Sheet does not include enhancement of system for updating

[1] The concept of BBB was proposed in the Sendai Framework for Disaster Risk Reduction (DRR) (2015-2030). After the project started, BBBRRP was formally added to the project component (i.e., Output 4) to correspond to the needs recognized after the Gorkha Earthquake in April 2015 through the agreement at the 1st meeting of Joint Coordinating Committee of the project in May 2015.

[2] The phrase "reflecting and utilizing the risk assessment results produced by the project" was complemented based on the outcome stated in the Ex-ante Evaluation Sheet (i.e., Utilization of the Proposed Plan "The risk assessment results produced by this project are reflected and utilized in the related measures (local disaster management plans, seismic plans for public infrastructure, etc.)) to clarify the logical relationship between the outputs and the impact (i.e. Expected Goals through the proposed plan).

[3] The degree of achievement of expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to-long-term goals which will be attained as a result of crystallizing the proposed plan ("output" of the project).

[4] There were 12 municipalities at the time of ex-ante evaluation. In 2017, federal restructuring of the Country was done. Village Development Committees and Municipalities were restructured into Municipalities (rural and urban). So, the number of municipalities in the project site also changed.

[5] The pilot municipalities were Lalitpur Metropolitan City, Bhaktapur Municipality, and Budhanilkantha Municipality. They were selected from different districts with regional characteristics and damage conditions due to the Gorkha Earthquake, etc., mainly based on the results of the hazard and risk assessment.

[6] In addition, Ministry of Federal Affairs and Local Development (MoFALD), Ministry of Home Affairs (MoHA), Department of Mines and Geology (DMG), and local governments in the KV participated in the project as the related agencies at the beginning of the project. In March 2018, MoFALD and Ministry of General Administration (MoGA) merged to become Ministry of Federal Affairs and General Administration (MoFAGA).

risk assessment results but capacity development of the related organizations through the implementation of the project activities.

- As for the Utilization of the Proposed Plan, the target year was set to be 2021 because the ex-post evaluation was planned after 2-3 years from the completion of the project as per the Ex-ante Evaluation Sheet.
- Regarding the Indicator for the Utilization of the Proposed plan ("The number of references to the risk assessment results in policies, including local disaster management plans"), the term "policies" was interpreted to include the related measures because the Utilization Status of the Proposed Plan stated in the Ex-ante Evaluation Sheet reads "The risk assessment results produced by this project are reflected and utilized in the related measures (local disaster management plans, seismic plans for public infrastructure, etc."). The target figure for the Indicator was not available in the existing documents; therefore, the appropriateness of the number of references in the target year was confirmed by asking for the Implementing Agency's judgment with grounds.
- The above-stated Indicator covers the utilization status of not only the risk assessment results (Output 2) but also the hazard assessment results (Output 1) because the risk assessment was conducted using the hazard assessment results. In addition to the Indicator, maintenance status of the enhanced capacity for updating the risk assessment results including the GIS database for the risk assessment developed under the project (Output 3), utilization status of the models for BBBRRP and LDCRP in other municipalities (Output 4) as well as implementation status of the BBBRRPs and the LDCRPs in the 3 pilot municipalities was checked as Supplementary Information (SI) 1, 2 and 3 respectively.

1 Relevance/Coherence

[Relevance]

<Consistency with the Development Policy of Nepal at the Time of Ex-Ante Evaluation >

The project was consistent with the development policy of Nepal at the time of ex-ante evaluation because the Approach Paper to the Thirteenth Plan (2013-2016) set forth disaster management under cross-sectoral development policies and the National Strategy for Disaster Risk Management (2009) included risk assessment in priority activities.

<Consistency with the Development Needs of Nepal at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Nepal on assessment of earthquake disaster risk for the KV at the time of ex-ante evaluation as described in "Background".

<Appropriateness of Project Design/Approach>

The project design/approach was appropriate. No problem attributed to the project design/approach was confirmed.

<Evaluation Result>

In light of the above, the relevance of the project is ③.[7]

[Coherence]

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy to Nepal at the time of ex-ante evaluation, which set forth consideration for the environment and disaster management under one of the 3 priority areas of "Social and economic infrastructure and mechanism development which directly leads to economic growth and the national livelihoods improvement" in the Country Assistance Policy for Nepal.

<Collaboration/Coordination with other JICA's interventions>

Any collaboration/coordination between the project and other JICA's interventions was not clearly planned at the time of ex-ante evaluation.

<Cooperation with other institutions/ Coordination with international framework>

Any cooperation/coordination with other institutions, donors, etc. was not clearly planned at the time of ex-ante evaluation.

<Evaluation Result>

In light of the above, the coherence of the project is ②.[7]

[Evaluation Result of Relevance/Coherence]

In the light above, the relevance/coherence of the project is ③.

2 Effectiveness/Impact

<Status of Achievement for the Objectives at the Time of Project Completion>

The Objectives were mostly achieved as planned by the time of project completion. A seismic hazard analysis for the KV was conducted utilizing the latest knowledge. A seismic risk assessment was conducted based on the results of the seismic hazard analysis and the risk assessment results were summarized as damage estimation by considering multiple scenarios. The capacity of the staff of MoUD for updating the risk assessment results in accordance with the social environment change in the future was enhanced by capacity building mainly through working group meetings on the risk assessment and training in Japan in addition to the development of a risk assessment manual and a GIS database for the risk assessment. For the 3 pilot municipalities in the KV, the BBBRRPs were developed using the hazard assessment results, and the LDCRPs were developed by utilizing the risk assessment results. Through these activities, the models for the BBBRRP and the LDCRP were developed. The Final Report of the project was officially received/accepted as the project output by MoUD.

<Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>

The proposed plan has been mostly utilized as expected by the time of ex-post evaluation. As far as MoUD and MoFAGA are aware, the seismic risk assessment results for the KV produced under the project have been referred to when updating the National Building Code (NBC) 105 (2020), the major document for seismic design of the buildings, and developing the Urban DRR Toolkit launched by MoFAGA[8][9]. The number of references made in policies (at least 2) is appropriate because the NBC105 alone influences many policies, guidelines, plans, and measures related to DRR (Indicator). According to MoUD, there has not been enough social environment change to update the seismic risk assessment results for the KV. Meanwhile, the federal lead agency for seismic risk assessment works (both new assessment and updating the previous one) has been changed from MoUD to National Disaster Risk Reduction and Management Authority (NDRRMA) established

[7] ④ : very high, ③ : high, ② : moderately low, ① : low.

[8] According to MoFAGA, the Urban DRR Toolkit provides various tools for municipalities to understand hazards, risks, vulnerability, capacity, etc. in an easily understandable way and is supplemented to the guideline for the LDCRP developed under the project. The information obtained through the tool kit can be used to prepare or update the LDCRPs by the municipalities along with the said guideline.

[9] For reference, the LDCRPs have been developed in 3 more municipalities in the KV using the guideline developed under the project, but the risk assessment results have not been utilized in developing them due to unknown reasons.

in 2019, and MoUD has become a supporting agency. Both MoUD and NDRRMA confirmed that NDRRMA should be the lead agency for updating the seismic risk assessment results for the KV when the need arises. The seismic risk assessment results for the KV as well as the data have been already shared with NDRRMA, which are now put on its portal. As such, the capacity of MoUD has become less relevant to update the seismic risk assessment results for the KV because MoUD is a supporting agency only.[10] Due to a lack of information, it is not certain how MoUD has handed over the task to NDRRMA and whether NDRRMA has the necessary capacity (please see <Technical Aspect> of "4 Sustainability" for details) (SI-1). The idea of the BBBRRP model has been incorporated in 153 Local DRR Strategic Plans of Action in the 14 districts most affected by the Gorkha Earthquake, which were developed based on the Sendai Framework for DRR. The degree of utilization is appropriate because the model has been referred to when planning BBB in the Local DRR Strategic Plan of Actions for the municipalities in the most affected districts by the Gorkha Earthquake. It is noted that the GON is planning to prepare such a plan for all local levels of Nepal. The LDCRPs have been developed by 403 more municipalities (3 municipalities in the KV and 400 municipalities outside the KV) based on the model developed under the project. The degree of utilization is appropriate because the number of municipalities with the LDCRPs, including the 3 pilot municipalities of the project, already accounts for 54% of 753 municipalities in Nepal. It is noted that the GON is planning for all municipalities to have the LDCRPs (SI-2). In the 3 pilot municipalities, the BBBRRPs have been implemented mostly as planned because the related reconstruction works have been mostly completed, and the LDCRPs have been implemented mostly as planned but there are still some works to be done (SI-3).

<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>

The expected goals through the proposed plan, the medium-to-long-term goals, have been already partially achieved at the time of ex-post evaluation. Earthquake disaster risk has been already reduced to some extent through the construction of building structures referring to the updated NBC 105 (2020) [11], and the implementation of the LDCRPs in 3 pilot municipalities and 403 other municipalities.

<Other Impacts at the Time of Ex-post Evaluation>

Various other positive impacts have been observed. The addition of the BBBRRP to the project contents in response to newly identified needs after the Gorkha earthquake (see footnote 1) has contributed to BBB in the affected areas as shown in the results of SI-2 and SI-3 of <Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>.The project has contributed to mainstreaming of seismic DRR. MoUD pointed out that, in addition to the NBC 105 stated earlier, the project has contributed to the preparation/updating of building permit systems by municipalities and allocation of open spaces and establishment of evacuation centers being working on by the local and provincial governments although further details are not available. The project has also contributed to "Priority 1: Understanding disaster risk" of the Sendai Framework for DRR because the results of seismic hazard analysis and risk assessment produced under the project have contributed to a better understanding of the earthquake risk in the KV. The project has also increased the awareness of people and decision-makers about earthquake risk especially because the Gorkha Earthquake occurred shortly after the commencement of the project. In addition, 2 ongoing technical projects of JICA[12] have been designed based on the results of this project[13]. World Bank is also using the results of this project in 2 projects[14]. MoUD has shared the data collected for the seismic risk assessment with the municipalities in the KV. Some municipalities like Lalitpur Metropolitan City have used the data and established their own GIS database system. Meanwhile, negative impacts have not been observed.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is ③.

Status of Achievement of Utilization Status of the Proposed Plan and Expected Goals through the Proposed Plan

Aim	Indicators	Results	Source
(Utilization Status of the Proposed Plan) The risk assessment results produced by this project are reflected and/or utilized in the related measures (community disaster management plans, seismic pans for public infrastructure, etc.)	Indicator: Number of references to the risk assessment results in policies, including local disaster management plans.	Status of Utilization: Mostly utilized. (Ex-post Evaluation) -As far as MoUD and MoFAGA are aware, the risk assessment results have been utilized in updating/developing at least 2 policies: the NBC 105 (the major document for the seismic design of the building) and the Urban DRR Toolkit.	MoUD and MoFAGA
(Expected Goals through the Proposed Plan) Earthquake disaster risk is reduced through implementation of projects based on development plans and related policies formulated by the central and local governments.		Status of Achievement: Partially achieved. (Ex-post Evaluation) -Earthquake disaster risk has been already reduced to some extent through the construction of building structures following the updated NBC 105 (2020), and the implementation of the LDCRPs in 406 out of 753 municipalities in Nepal (3 pilot municipalities in the KV, 3 more municipalities in the KV and 400 other municipalities outside the KV).	MoUD and MoFAGA

[10] For reference, the MoUD staff trained under the project has been transferred to other departments, and MoUD is not sure whether the new staff could update the risk assessment results by just using the manual developed under the project even if it were still the lead agency.

[11] It is noted that a new technical cooperation project of JICA "The Project for Promotion of Nepal National Building Code Compliance for Safer Building Construction" (2021-2025) is being implemented in collaboration with MoUD. The successful implementation of this project is expected to promote the achievement of the Expected Goals through the Proposed Plan further.

[12] The project mentioned in one footnote above and "The Project for Strengthening Disaster Risk Governance for Resilience in the Kathmandu Valley "(2021-2025).

[13] For reference, the seismic risk assessment results for the KV produced by this project were expected to be updated based on the hazard analysis results updated under the Japan Science and Technology Agency (JST)/JICA's "Project for Integrated Research on Great Earthquakes and Disaster Mitigation in Nepal Himalaya" (2016-2021) as per the Final Report of this project. MoUD did not have information on this because it is not the lead agency for updating the seismic risk assessment results anymore as explained in < Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>.

[14] Diagnostic study on "Catalyzing Sustainable and Inclusive Urban Development in KV" with MoUD and the support to the GON through the Finance for Growth Development Policy Credit (DPC) series, which includes operationalization of a public building registry.

3 Efficiency

Although the project period was as planned (the ratio against the plan: 100%), the project cost exceeded the plan (the ratio against the plan: 140%) mainly due to the addition of emergency study and work contents after the Gorkha Earthquake (see footnote 1). Outputs were produced as planned. In the light above, the efficiency of the project is ③.

4 Sustainability

<Policy Aspect>

The DRR National Strategic Plan of Action (2018-30) identifies "Understanding Disaster Risk" as Priority Area 1, which will guide the other priority areas, and "Hazard-wise Risk Assessment", including earthquake risk assessment, as one of the priority actions under Priority Area 1.

< Institutional/Organizational Aspect>

The organizational structure to promote the utilization of the proposed plan has been changed. In addition to the federal government agencies, such as MoUD, MoFAGA, and MoHA, and the municipalities involved in the project, NDRRMA, which is responsible for formulating national disaster management policies and plans, was established after the project completion. As described earlier, the federal agency responsible for seismic risk assessment has been changed from MoUD to NDRRMA, and MoUD has become a supporting agency. MoFAGA considers that the necessary number of staff has been allocated both at the federal and local governments and MoUD also confirmed that some staff has been allocated. Although the degree of utilization of the seismic risk assessment results in policies and utilization of the models for the LDCRP and the BBBRRP is appropriate as shown earlier, the organizational structure as well as the coordination mechanism is not fully functioning. In general, DRR is the responsibility of all 3 levels of government (i.e., federal, provincial, and local) and sometimes the responsibilities are overlapped. Since the new governance system with 3 levels of government has been operational for just over 5 years, the detailed demarcation of roles has not yet been clarified. However, it is expected to become clear with time. Clearly demarcating roles will further enhance the project effects.

<Technical Aspect>

The federal government agencies have the necessary capacity to utilize the seismic risk assessment results for the KV in policies and the models for the LDCRP and the BBBRRP. MoUD pointed out that the capacity of Department of Urban Development and Building Construction (DUDBC)/MoUD in charge of NBC, the newly established NDRRMA, as well as the municipalities need to be further developed to utilize the seismic risk assessment results further, but their capacity is being enhanced through the 2 ongoing JICA's technical cooperation projects stated earlier[15]. The guidelines for the LDCRP and the Standard Operating Procedures for the emergency response have been utilized by MoFAGA and the municipalities. Due to a lack of information, it is not certain whether NDRRMA has the necessary capacity to update the seismic risk assessment results for the KV according to the risk assessment manual developed in the project when the need arises in the future.

<Financial Aspect>

A limited budget has been allocated to MoUD, MoFAGA, and NDRRMA from the GON, but with support of different projects and funds from donors, including the 2 technical cooperation projects of JICA, Provincial and Local Governance Support Program (2019-2022) assisted by various donors, they have managed to implement necessary activities to promote utilization of the seismic risk assessment results for the KV in policies and the models for the LDCRP and the BBBRRP. It is noted that the support from external sources is for the short term. So, it is difficult to predict whether the necessary budget will be secured in the long term.

<Environmental and Social Aspect>

No issue on environmental and social aspects has been observed and it has not been necessary to take any countermeasures.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional/organizational / technical / financial aspects of the implementing agency. Therefore, the sustainability of the project effects is ③.

5 Summary of the Evaluation

The project conducted seismic hazard analysis and risk assessment for the KV, enhanced the capacity for updating the risk assessment results for the KV in accordance with the social environment change in the future, and developed the models for the BBBRRP and the LDCRP. After the project completion, the proposed plan has been mostly utilized as planned and earthquake disaster risk has been already reduced to some extent. As for sustainability, slight problems have been observed in terms of the institutional/organizational aspect (unclear detailed demarcation of roles of 3 levels of government in DRR, which is expected to be clarified with time), the technical aspect (the need for further capacity development of some organizations, which is being addressed by ongoing JICA's projects, and the unclarity of the capacity of NDRRMA to update the risk assessment results for the KV in the future due to a lack of information), and the financial aspect (uncertainty of long-term prospects), while no problems have been observed in terms of the policy aspect and the environmental and social aspects. The project cost exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended that MoUD, together with NDRRMA, MoFAGA, MoHA, and provincial and local governments, clarify demarcation of roles between 3 levels of government for different activities related to utilization of the seismic risk assessment results for the KV.
- It is recommended that, starting in the next fiscal year, MoUD and MoFAGA allocate adequate budget to utilize the seismic risk assessment results for the KV in policies and the models for the LDCRP and the BBBRRP, respectively, to ensure that the effects of the project can be sustained without depending on the support from external sources.
- It is recommended that MoHA,NDRRMA, and MoUD allocate adequate budget to update the seismic risk assessment results for the KV when there is social environment change that requires the update in the future.

15 "The Project for Promotion of Nepal National Building Code Compliance for Safer Building Construction" (2021-2025) and "The Project for Strengthening Disaster Risk Governance for Resilience in the Kathmandu Valley "(2021-2025).

- It is recommended that MoHA secure the technical capacity of NDRRMA for updating the above-mentioned seismic risk assessment results to maintain the sustainability of the project outputs.

Lesson learned for JICA:

- When considering changes to the project contents at the implementation stage of a project in the disaster management sector in order to respond to new needs arising from the occurrence of a target disaster, it would be useful to consider changes based on the Build Back Better concept (a concept proposed in the Sendai Framework for DRR) so that the project can contribute to Build Back Better in the disaster-affected area.