

# Post-Earthquake Reconstruction in Nepal: Assumption, Action, and Accomplishment

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## Abstract

Post-earthquake reconstruction works is a consequential mission. The principal premises of the mission are the goal of speedily rebuilding, well-structured plans, extensive local resources mobilization, and commissioning leadership in the reconstruction and rehabilitation works. Nepal's pluralistic character, political upheavals, and shortcoming of resources are real-time challenges to mission accomplishment. Congruence of the assumptions, actions, and achievements concerning physical, socio-psychological, cultural, and financial dimensions of vulnerabilities is of foremost significance because the social acceptance and/or rejection is a critical determinant of the mission accomplishment.

This study aims to determine the congruence level of assumptions, actions, and accomplishments concerning the process activities of the National Reconstruction Authority, which are addressing the concerns of reconstruction work, national interest, and social justice. An exploration on the Authority's attention to the reciprocal eco-cultural resiliency measures has also been made to find a balance among the concerns.

The study begins with reviewing the Acts, policies, directives, and working procedures concerning the reconstruction works. The Authority's annual reports and decisions of the Appellate Committee are taken as the sources of information. A matrix form of NRA's process activities, key assumptions, major actions, and notable accomplishments is prepared for analysis. A matchmaking of the assumptions with the actions and achievements has been made, and the level of their congruence assessed.

The level of congruence among the assumptions, actions, and achievements concerning the consequential mission is found unsatisfactory. There is absence of process activities concerning the reciprocal eco-cultural resiliency, national interest, and social justice. Partially adapted process activities and corresponding assumptions, actions, and achievements seems insufficient to achieve the envisioned transformation in the disaster-affected districts. Deeply rooted self-interest of people and institutions associated with the consequential mission stands as a major challenge in the process of reconstruction.

*Keywords: post-disaster reconstruction, congruence measurement, cultural resiliency, grievance handling*

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# 1 Introduction

Nepal Reconstruction Authority (NRA) was established on 25<sup>th</sup> of December 2015. The establishment was just after eight months of the first earthquake of 7.6 Richter scale, which had occurred on 25<sup>th</sup> of April 2015. From the 27<sup>th</sup> day of December NRA had started its jobs in the earthquake affected districts.

The Authority's vision is '*well-managed resilient settlements and prosperous society.*' Its mission statement is '*to provide leadership for completing reconstruction and resettlement with a clear plan through the optimum use of local labor, resources and means as well as international support.*' The vision and mission statements ensure for the earthquake-damaged society's recovery and prosperity. Moreover, the authority has declared to promote national interest and provide social justice by completing the reconstruction works of the damaged-structures as well as rehabilitation and translocation of the displaced people in a planned and sustained manner. It has strategic intent of optimum utilization of local resources mobilization.

The 'An Act Made to Provide for Reconstruction of the Earthquake Affected Structures, 2015 (referred hereinafter as Reconstruction Act)' has specified its jurisdiction, functions, and also granted the authority to move ahead to achieve its objectives. The jurisdiction covers all the 32 earthquake-affected districts—14 most affected, 11 moderately affected and seven least affected districts. The most affected districts are Dolakha, Sindhupalanchowk, Gorkha, Nuwakot, Rasuwa, Dhading, Kavrepalanchowk, Ramechhap, Bhaktapur, Okhaldhunga, Sindhuli, Lalitpur, Kathmandu, and Makawanpur. Affected districts are Lamjung, Chitwan, Tanahu, Khotang, Syangja, Palpa, Baglung, Gulmi, Solukhumbhu, Kaski, and Parbat. Similarly, the least affected districts are Myagdi, Arghakhanchi, Nawalparashi-2, Bhojpur, Dhankuta, and Sankhuwasabha.

## 1.1 Composition of NRA

The NRA is organized under the Reconstruction Act. The Act has made a provision for various committees. There is An Advisory Council (राष्ट्रिय पुनर्निर्माण परामर्श परिषद) consisting ex-prime ministers and other high-profile individuals to advise the Board of Directors (निर्देशक समिति). The Board of Directors composed of 11 members is working above the Executive Committee (कार्यकारी समिति). The Executive Committee formed under the leadership of the Chief Executive Officer is carrying out the daily activities and also preparing reconstruction policy, plans, budgets, and so on. There is also provision of Development Assistance and Facilitation Committee (विकाश सहायता समन्वय तथा सहगजिकरण समिति) in assumptions of making the entire reconstruction and rehabilitation works effective and transparent. The District Coordination Committee (जिल्ला समन्वय समिति) is coordinating the tasks carrying out by the NRA in the earthquake-affected districts. Three-members' Appellate Committee (पुनरावेदन समिति) is making judgments on the grievances filed against the NRA's decisions and actions. A separate Reconstruction Fund (पुनरावेदन कोष) is available for it.

The Authority has adapted a divisional hierarchical structure at Kathmandu to carry out its regular activities. It has five divisions with three Central Project Implementation Units. The

five divisions consist of Planning and Budget Management; Manpower Management; Policy, Monitoring, Evaluation and Coordination; Heritage Protection, Public Building, and Infrastructure; and House, Settlement, and Local Infrastructure. The Project Implementation Units consists of grant Management and Local Infrastructure Project, Building, and Education (see Appendix 1). It has expanded its structure at district level as well.

The organization structure has created a pyramid type of reporting relationship at the central level structure, district level structure, and center and district level structures. The pyramid creates hierarchy, which requires a strong chain of command. Effectiveness of the chain of command needs to ensure a speedy reconstruction works. It is obvious that reconstruction/rehabilitation works seek to minimize all types of vulnerabilities and attempt to enhance socio-cultural cohesion (McCaughey, Daly, Mudir, Mahdi, & Patt, 2018) in the affected districts.

## **1.2 Research questions**

The NRA had to be set-up just after the earthquake, but the set-up took place only after eight months from the earthquake. It has completed one million above household surveys but registered about 635,000 grievances. The grievances were their feeling of being excluded and/or inaccurate measurement of the earthquake-caused loss and damage of individual property. In fact, the reconstruction work has not been completed yet, but the tenure of NRA is going to complete soon. In this outlook, the following questions are set forth.

- Whether the process activities of the Authority integrate all the concerns of reconstruction work, national interest, and social justice?
- Are the process activities instrumental in bringing change and development in eco-cultural structures in the affected districts?
- To what extent has the reconstruction mission enhanced reciprocal eco-cultural resiliency<sup>2</sup> measures in the affected districts?
- What new knowledge has the consequential mission generated to address likely vulnerabilities, hazards, and resiliency?

## **1.3 Objectives**

The general objective is to assess the level of congruence among the assumptions, actions, and achievements of the Authority's works in order to generate new knowledge of vulnerability, hazard, and eco-cultural resiliency. The Following are the specific objectives of this study.

- To determine the process activities of the Authority that are addressing the concerns of reconstruction work, national interest, and social justice;
- To assess the instrumentality of the process activities in bringing change and development in eco-cultural structures in the affected districts;
- To ascertain the extent of reciprocal eco-cultural resiliency measures has the reconstruction mission enhanced in the affected districts; and

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<sup>2</sup> The term 'reciprocal eco-cultural resiliency' refers to the condition of mutuality, shared responsibility, and inclination towards the economic and cultural plasticity of a society. The plasticity refers to the quality of economic actors and cultural adaptors for reshaping and regaining their well-beings in a continuum of change.

- To generate new knowledge that remains useful to enhance post-disaster reconstruction works.

#### 1.4 Delimitations

Scope of this study is confined within the purview of NRA's process activities. The assumptions, actions, and accomplishments concerning the national interest, social justice, and resiliency are insufficiently addressed in the paper because the process activities could not cover those concerns and the Authority's works were concentrated on reconstruction of damaged-structures.

The lockdown, due to COVID-19 pandemic, prevented field visits and onground key informant interviews. NRAs Website and Annual Progress Reports of 2073/74, 2074/75, 2075/76 remained the sources of information. Even though the actions and achievements of the initial stage are missing in absence of progress report of the year 2072/73.

Weight to the assumptions, actions, and achievements could not be assigned because of missing weight at their origin i.e. The NRA never mentioned relative weight to the items of its decisions, and accomplishments. Similarly, the Reconstruction Act also remained silent on the relative significance of the Authority's functions, duties, and power. Therefore, the congruence level does not reflect the relative weight of the assumptions, actions, and achievements. It is calculated only on a nominal number of statements referring to the assumptions, actions, and achievements.

This is a working paper. The constraints of time, resources, and continuous lockdown are resulting in limited information. The level of congruence deserves to be changed because of the NRA's process activity reporting and absence of information of the Authority's actions and achievements of about 11 months of the year 2076/77. Congruence level does not represent the level of efficiency or effectiveness i.e. 100% congruence is not 100% efficient or effective.

## 2 Methodology

This exploratory study began with reviewing the Acts, policies, directives, and working procedures concerning the reconstruction works. The Authority's annual progress reports and decisions of the Appellate Committee are also reviewed. A matchmaking of the assumptions with the actions and achievements has been done to determine the sequential congruence.

A matrix form of process activities and key assumptions, major actions, and notable accomplishments is prepared. A list of its process activities is determined on the basis of the functions, duties, and responsibility of NRA specified in the Reconstruction Act. The key assumptions, as derived from the Act, are arranged along the corresponding process activity. The actions and accomplishments are taken from the NRA's annual progress reports. The major actions taken, and notable achievements made by the NRA are matched with the corresponding process activity and key assumptions.

The calculation of congruence level is based on the following formula developed for the purpose of this study. Nominal scale is used to measure the assumptions, actions, and achievements.

$$C_l = \sum \frac{A_c + A_e + A_r}{3A_c} \times 100$$

Where,

$C_l$  = Level of congruence

$A_c$  = Committed assumptions

$A_e$  = Enacted decisions

$A_r$  = Resulted achievements

### 3 Analysis

The earthquake took the lives of 8,790 people and injured more than 22,300 people. The detailed household survey shows the damage of about eight lakhs private houses; 2,656 government houses severely damaged, and 3,622 houses partially damaged. Similarly, 8,680 schools and dozens of university buildings were damaged by the tremors. At least 753 archeological structures, 1,200 Gumbas, 1,197 health institutes, 4,545 water supply structures, 3 strategic roads and 50 rural/village roads required urgent reconstruction (National Reconstruction Authority [NRA], 2017).

The government of Nepal established NRA just after eight months of the earthquake under the Reconstruction Act 2015. The Act has shaped the scope, functions, duties and power of the Authority. The Act further provides foundation of the Authority's entire process activities concerning the work of reconstruction, resettlement, translocation, national interest and social justice.

The Authority's mission statement addresses the preamble of the Reconstruction Act. The ground reality is an excessive dependence on international donors' support for reconstruction works. Maintaining a harmony of the commitment to national interest promotion and social justice enrichment and a dire need of international support seem a tough job for the executives at NRA. The notions of optimum utilization of local knowledge, skills, and resources in favor of national interest and social justice appears laudable in paper, but it becomes very hard to realize in practice because international support includes conditions. There is certain interest in every international support, and obviously the supporter is expecting certain behavior and outcome from its beneficiary. Sometimes, the donors' interests and activities are dominating the beneficiary's interests and activities. For instance, there are dozens of reconstruction projects carried out by international agencies on their own (see Annual Reports of the NRA).

#### 3.1 Assessment on the assumptions, actions, and accomplishments

This paper uses the word 'assumption' to refer to its functions, duties, and authority granted by the Reconstruction Act. The assumptions are also the NRA's functions and duties towards the successful completion of the reconstruction works as envisioned by the Act. It is believed that the assumptions are accepted as true or certain to happen in the course of reconstruction. In the

same line the NRA’s vision, mission statement, acts, rules, policies, directives, standards, and working procedures are clearly reflecting the assumptions and commitments.

NRA’s major reconstruction process activities—surveying, designing, directing/leading, planning, capacitating/organizing, executing, coordinating, evaluating/monitoring, grievance handling, and advising the government—are determined under the purview of the Act. Corresponding assumptions to the process activities are assessed on the basis of the NRA’s functions, duties, and power as specified by the Act. The linkages of the major actions and notable achievements to the corresponding assumptions are displaying the meeting and missing the reconstruction requirements. The number and letter in parenthesis under the column of ‘basic assumptions’ refers to the Section of the Reconstruction Act, 2015.

### Surveying

Determination of loss and damage, technical inspections of damaged and/or risky physical structures as well as identification of locations for rehabilitation and translocation of affected people are basic assumptions/expectations from the NRA. The actions of information collection, household and geological surveys resulted in a number of notable achievements. Following table provides a summary of its survey activities.

Table 1

#### *Surveying: Assumptions, Actions, and Achievements*

Basic assumptions	Major actions	Notable achievements
Determine, or caused to be determined the damage caused by the earthquake (4.1.a)	Information collected about the death and injury of people, damage of structures	<ul style="list-style-type: none"> <li>Number of deaths: 8790; injured people: 22,300</li> <li>Listed beneficiaries till 01/03/2077: 832,408</li> </ul>
Makes, or cause to be made, technical examination of the damaged or unsafe physical structures (4.1.q)	Household surveys completed till 01/03/2077: 1,037,291	Damaged personal homes: almost 800,000; and other structures: 22,703
Identifies appropriate sites for integrated settlements, house polling, rehabilitation and translocation(4.1.g)	Geological surveys in 1060 villages were completed till FY 2075/76	Determined for translocation of 283 villages; necessity of safety measures in 305 villages; and 472 villages found secured

### Designing

The NRA has designed and issued various guiding and regulating documents. Similarly, the designs for rural settlements are in effect but such designs are not ready for urban settlements till the end of 2075/76. There were 1,320 Gumbas damaged from the earthquake, but still (2074/75) there were no modalities prepared for the reconstruction of those Gumbas.

While designing the reconstruction and rehabilitation projects, NRA could not categorize the projects as *self-executable* and *non-self-executable*. It could not include any schemes/models to enhance eco-cultural resiliency in consideration of future disasters in the regions. It has been

attentive to build resiliency of physical structures but not to build the economic and cultural structures in the districts. The study could not find any specific modality selected for collaborative reconstruction work except the agreements. Following table provides a summary of its actions and accomplishments.

Table 2

*Designing: Assumptions, Actions, and Achievements*

Basic assumptions	Major actions	Notable achievements
Designs organization structure (18)	<ul style="list-style-type: none"> <li>Organized the Authority at Kathmandu</li> <li>Opened 22 secretariats in the affected districts</li> </ul>	Presence of a mechanism of command and coordination
Prepares designs for residential homes and other structures (4.1.g, 4.1.s)	<ul style="list-style-type: none"> <li>Prepared 34 design catalogues of private residential homes</li> <li>Prepared designs for other structures including government buildings, academic institutions, hospitals</li> </ul>	<ul style="list-style-type: none"> <li>Availability of design options for private residential building construction</li> <li>Availability of drawings and designs for tendering and construction works</li> </ul>
Sets standards for integrated settlements, house pooling, rehabilitation and translocation (4.1.g, 4.1.s)	At least 1 standard issued including land procurement	Prepared foundation for controlling quantity and quality of the works
Prepares designs for the integrated settlements, house pooling, rehabilitation and translocation (4.1.g, 4.1.s)	<ul style="list-style-type: none"> <li>Associated with Urban Development Ministry, NRN for first model village development</li> <li>Feasibility studies continues for translocation of villages</li> </ul>	<ul style="list-style-type: none"> <li>Readiness for initiation to shift Larpak to Gupsipakha in Gorkha district</li> <li>56 studies from Ministry of Urban Development and 5 from NRA</li> </ul>
Develops norms for development of integrated settlement, house pulling, rehabilitation and translocation (4.1.g) i.e. formulates policies, rules, regulations, directives	At least 20 guiding and regulating documents consisting the Act (1), rules (1), standards (1), directives (2), and working procedures (15)	Decisions and actions processes related to reconstruction facilitated
Selects an appropriate modality to carry out the reconstruction work in collaboration with the governmental, private or non-governmental sector, community or with any foreign organization based in Nepal (4.1.m)		

*Note: The blank cells indicate no major actions and achievements regarding the corresponding assumptions*

## Planning

The NRA could not deliver a robust plan of actions on its own. Mainly, it involved granting approval to the projects submitted by others. There were more than 785,603 grants and

assistance agreements, which included hundreds of conditions. The conditions seem very challenging for the NRA to provide real leadership in the reconstruction process.

In the progress reports, NRA has provided information about others' projects/plans it had approved but the reports have not provided information about the projects/plans it had carried out on its own. Similarly, there is no concrete plan of actions for livelihood improvement as such; however, the ministries and NGOs were providing training programs for livelihood. Likewise, it could not introduce specific social security programs for those who had been disabled, single family, elderly people, homeless children, and similar others.

There are no more actions and achievements regarding prioritizing the reconstruction works and preparing plans for integrated settlements, house pooling, rehabilitation and translocation. Plans for promotion of national interest and social justice are far from its process activities.

Table 3

*Planning: Assumptions, Actions, and Achievements*

Basic assumptions	Major actions	Notable achievements
Fixes priority of the reconstruction (4.1.c)		
Formulate plans for integrated settlements, house pooling, rehabilitation and translocation (4.1.g)		
Prepares programs related to human resource development, reconstruction and rehabilitation as required for education, health, agriculture, industry, employment, and reconstruction and rehabilitation (4.1.j)	Determined the training need for technicians and workers	Types, contents, duration, recipients, and providers of training
Provide budget and other resources to the agencies that are getting assignment of reconstruction ( <i>NRA Website: mandate</i> )		
Approves such policies, plans, budget and programs with schedule of operations (4.1.d)	<ul style="list-style-type: none"> <li>● Invited/obtained projects from different agencies</li> <li>● Received-plans presented in the Executive Meeting for their approval</li> </ul>	<ul style="list-style-type: none"> <li>● 356 projects were approved in 2075/76</li> <li>● 2,177 projects approved in FY 2073/74</li> </ul>

*Note: The blank cells indicate no major actions and achievements regarding the corresponding assumptions*

**Capacitating/organizing**

The NRA adequately filled the positions in its hierarchy. However, its restructuring, as reflected in the report of 2074/75, indicates that the Central Project Implementation Units working under different ministries (Ministry of Federal Affairs and Local Development, Ministry of Education, Ministry of Health, and Ministry of Urban Development) and District Project Implementation Units were brought under the command of NRA. There were integration/merger and removal of other implementation units at central and district levels. The

Units were working under dual command—command of the ministries and the NRA—were not effective enough. This type of restructuring/merger indicates that the NRA had no clear concept of its own organization design.

The Authority did not build personal homes for the beneficiaries, instead it asked them to construct their houses according to its design. The amount of grants for personal house reconstruction was Rs. 300,000 and for retrofitting Rs. 100,000. The amount of personal home construction was provided in three tranches, but the amount of retrofitting in two equal tranches. The Authority intended to support the beneficiaries in financing, but it could not facilitate the beneficiaries in getting loans on subsidized interest rates.

Financial resource mobilization was not moving through one window. It was moving through the NRA, the government and beyond. The NRA's annual report of 2074/75 shows that Rs. 41.99 billion (19.02%) was from outside of the government's budget. Similarly, there was Rs. 78.4 billion (35.51%) amount appearing in the government budget but it was for direct payment i.e. on budget off treasury. The donors were mobilizing the amount from their own channels. Such practices are other examples of shortcoming/challenges of NRA in the process of directing/leading and controlling the reconstruction process activities.

The NRA indicates that the issues of land ownership is one of the major challenges in selection and acquisition of land. The NRA's requirements and local norms/standards are facing incompatibility. Following table provides a summary regarding the activity of capacitating/organizing.

Table 4

*Capacitating/organizing: Assumptions, Actions, and Achievements*

Basic assumptions	Major actions	Notable achievements
Brings about financial resources for reconstruction (4.1.p)	<ul style="list-style-type: none"> <li>● Agreements made for grants and assistance: 785,603</li> <li>● Number of grants agreements: FY 2072/73: 278,880; FY 2073/74: 629613; FY 2074/75: 722,019</li> <li>● Grants distribution for personal homes construction</li> </ul>	<ul style="list-style-type: none"> <li>● 2072/73 budget Rs. 74 billion (spent 30.36%); 2073/74 budget Rs. 112.58 billion (spent 44.14%); 2074/75 budget Rs. 151.17 (spent 75.93%); 75/76 Rs. 138.43 billion (spent 64.61%)</li> <li>● Availability of grants for personal homes construction</li> </ul>
Acquires lands or assigns the responsibility to anybody for the implementation of plans or programs including reconstruction, integrated settlement, house pooling plans or programs (4.1. f)	<ul style="list-style-type: none"> <li>● Worked for land readjustment, and guided for land development</li> <li>● Worked for at least 50 integrated settlements</li> </ul>	All necessary arrangements made for translocation of 756 families
Mobilizes NGOs, private sector or community for reconstruction (4.1.1)	Mobilized the banks and financial institutions in the affected districts	Loans and grants distribution process facilitated

Basic assumptions	Major actions	Notable achievements
Provides requisite budget and other resources to the body responsible for reconstruction (4.1.k)		
Builds or caused to be built, capacity of the bodies involved in the reconstruction works (4.1.o)		
Develops capacity, or caused to develop the capacity of the agencies involved in reconstruction ( <i>NRA Website: mandate</i> )		

Note: The blank cells indicate no major actions and achievements regarding the corresponding assumptions

### Directing/leading

The design/modality of reconstruction works involved multiple parties like the government’s ministries, departments, local authorities, NGOs, and individual households as well as foreign countries. There was involvement of foreign governments, bilateral and multilateral organizations, and INGOs. Such involvement of different parties is obviously weakening the NRA’s power of directing/leading the reconstruction works. Moreover, coordination and communication challenges are inevitable. Eventually, the NRA seems weaker in the process of controlling and influencing the works of others, specifically the works of the donors because the reconstruction work is heavily dependent on donors’ financial and non-financial resources.

The Reconstruction Act could not dictate the NRA to divide the reconstruction works at least into two categories—self and non-self-projects. If there was demarcation between self and non-self-projects, it could be easier in determination of authority and responsibility. Similarly, there are no more efforts paid by the Authority to provide real leadership in the reconstruction process. Neither it exercised control over the works of the donors and foreign countries, nor it remained far from their works. Now, there may arise a question—who is responsible for the delays or derailments of the reconstruction works—the NRA or the parties involved? Similarly, the Act could not assign the functions of real leadership to the Authority. The following table provides a summary of leading/directing activities and assumptions.

Table 5

*Directing/leading: Assumptions, Actions, and Achievements*

Basic assumptions	Major actions	Notable achievements
<ul style="list-style-type: none"> <li>● Gives continuity to the national unity, harmony, and tolerance</li> <li>● Ends the tendencies that could affect the social and religious harmony (<i>Guiding principle</i>)</li> </ul>		
Orders the concern body to remove a physical structure, in force, if necessary, for the reconstruction work (4.1.i)		
Gives orders to remove or demolish the damaged or unsafe physical structure to its owner; takes necessary action if the owner does		

Basic assumptions	Major actions	Notable achievements
not remove or demolish the structure at his/her own (4.1.q)		

Note: The blank cells indicate no major actions and achievements regarding the corresponding assumptions

## Executing

The NRA has spent most of its time for physical structures but not for national interest and social justice, which were instrumental to eco-cultural resilience. In fact, the vision and mission statement clearly insist for promotion of national interest, social justice, and resiliency. The projects such as Disaster Risk Reduction and Livelihood Restoration for Earthquake Affected Communities Project, Disaster Resilience School Project, Emergency School Reconstruction Project, are mainly for reconstruction of schools not for eco-cultural resiliency enhancement by promoting national interest and enriching social justice. Likewise, the study could not find any livelihood programs started from the NRA on its own.

The Authority did not involve in reconstruction of schools. Instead, it wanted to get the work done through the School Management Committee; NGOs, Construction Companies; Ministry of Education, Central Project Implementation Units under different ministries.

The NRA was not being effective enough to manage land for integrated settlements and translocation of affected people. However, the government was working to manage land for translocation of 648 beneficiaries. The translocation is continuous at personal level as 1,199 individuals were getting land on their own at secured areas and they were getting Rs. 200,000 grants for doing so.

Table 6

*Executing: Assumptions, Actions, and Achievements*

Basic assumptions	Major actions	Notable achievements
Implements or caused to be implemented the plans and programs of integrated settlements, house pooling, rehabilitation and translocation (4.1.g)	Worked with governmental and non-governmental organizations	Completed integrated settlements-50 for 756 families
Carries out, or caused to be carried out the reconstruction work (4.1.e) Carries out, or cause to be carried out, reconstruction work in collaboration with the governmental, private or non-governmental sector, community or with any foreign organization based in Nepal, by selecting the appropriate modality (4.1.m)	<ul style="list-style-type: none"> <li>● Making technical manpower available by mobilization of 374 engineers, 391 sub-engineer, 336 assistant sub-engineers at district levels</li> <li>● Expediting the construction and retrofitting of physical structures</li> <li>● Making agreements with 768,469 beneficiaries for individual homes construction</li> </ul>	<ul style="list-style-type: none"> <li>● Completed the construction of eight model schools</li> <li>● Construction completed individual houses till 20/03/2077: 507,623</li> <li>● Under construction Individual houses till 20/03/2077: 710,231</li> <li>● At least six districts are getting benefits from getting business ideas, training, and support.</li> </ul>

Basic assumptions	Major actions	Notable achievements
	<ul style="list-style-type: none"> <li>● Formation of committees at local level to expedite the reconstruction works</li> </ul>	
Executes, or caused to be executed, programs related to human resource development, reconstruction and rehabilitation as required for education, health, agriculture, industry, employment, and reconstruction and rehabilitation (4.1.j)	<ul style="list-style-type: none"> <li>● Provided training on TOT, inspection manual, and correction manual to approximately 2, 500</li> <li>● Provided training of carpentry, masonry, plumbing, etc. to 70,127</li> </ul>	Availability of well-trained reconstruction technicians and workers including carpenter, masons, plumbers, etc.
Does, or cause to be done, other reconstruction related works in the earthquake affected area (4.1.s)		

Note: The blank cells indicate no major actions and achievements regarding the corresponding assumptions

### Coordinating

There were 202 non-governmental organizations involved in 293 projects under tripartite agreements with the NRA, NGOs, and concerned ministries/departments of the government in 2074/7. Such a number of organizations and projects reached 238 and 356 respectively in 2075/76. As involvement of parties increases as increases the challenges in coordination.

The Authority could not provide and receive reliable and timely information concerning the policy, projects, programs, and its own working procedures due to delay in its establishment and formality complexity. Moreover, it could not develop a mechanism to ensure the continuous inputs mainly the construction materials, manpower, money (at subsidized loan/grants) for reconstruction works.

Capital expenditure could not be spent much more because of excessive time consuming in preparing drawings, designs, and tendering. Involvement of various parties with plural interests was another challenge. However, interaction programs with various parties including the local and provincial public representatives were continuous.

Table 7

*Coordinating: Assumptions, Actions, and Achievements*

Basic assumptions	Major actions	Notable achievements
Coordinates with various bodies in order to make reconstruction work effective (4.1.n)	Establish policy, monitoring, evaluation and coordination division, and involved in coordination with different entities	Involvement of at least 238 non-governmental organizations in 356 reconstruction related works till 2075/76

### Evaluating/monitoring

A robust mechanism for quality controls of construction materials could not be established and operationalized. Eventually, the quality of reconstructed structures itself is in a question mark even for structural sustainability and resiliency. Similarly, the Authority could not be in the

position to establish a strong mechanism for evaluation of the works carried out by the NGOs, INGOs, donors, and foreign government agencies.

Moreover, an effective mechanism for coordination, facilitation, and monitoring could not be realized from the very beginning. Significance of such mechanisms at local level was realized only in the year 2074/75; however, it could be established not only at local level but a mechanism from center to the local was necessary from the very beginning.

Progress of reconstruction works is not reflected in quantitative terms. At least, a report on what percentage of reconstruction works has been completed till the date of annual progress report preparation could be more meaningful. However, the progress report focuses on the tasks the NRA had carried out including the minutes of its all meetings.

NRA’s tenure was specified for five years with the possibility of one year extension. It has carried out numerous plans and programs but absence of firm commitments for specific time of completion. Almost all the plans and programs were flowing freely without a completion timeline with some exceptions. The annual progress reports do not reflect any scheduled commitments. Timeline could not become a criterion for performance evaluation of the NRA; but it became a criterion to receive tranches for private homes construction.

Table 8

*Evaluating/monitoring: Assumptions, Actions, and Accomplishments*

Basic assumptions	Major actions	Notable achievements
Prevents any works done against—and/or gives order to work under conformity with—the prescribed quality, standard or mode (4.h)		
Makes inspection, examination and monitoring, or cause to be inspected, examined and monitored, the acts and actions done and taken at the direction of the Authority (4.1.r)		
Arranges, or cause to be arranged, for the effective utilization of financial resources (4.1.p)		

*Note: The blank cells indicate no major actions and achievements regarding the corresponding assumptions*

**Grievance handling**

Grievances were continuous even after completion of the household surveys. Surprisingly, the beneficiaries were 832,408 and grievances were 634,973 i.e. more than 76% of the beneficiaries were filing their complaints. In one way, a higher number of grievances (even to be included in the list of beneficiaries) is an indication of ineffective household surveys and information collection work. However, about 94% (1867/1993) rejection of grievance appeals indicates the role of unethical behavior and/or a deep rooted self-interest of the people in which they just wanted to get available grants and support as much as possible.

Table 9

*Grievance Handling: Assumptions, Actions, and Achievements*

Basic assumptions	Major actions	Notable achievements
Conducts public hearing at least once in every six months (23)		
Accepts the complaints and grievances against the NRA (26.1)	<ul style="list-style-type: none"> <li>● Set up of units and registered the complaint/grievances</li> <li>● Integrated grievances to the MIS of NRA</li> </ul>	<ul style="list-style-type: none"> <li>● Grievances registered: 634,973</li> <li>● Grievances cleared: 634,973</li> </ul>
Grants the rights of appeal against the decisions and actions (26.2)	Registered and processed the appeals	<ul style="list-style-type: none"> <li>● Decision on the appeals till 2076/12/05: 1,993</li> <li>● Rejected appeals till 2076/12/05: 1,867</li> </ul>

Note: The blank cells indicate no major actions and achievements regarding the corresponding assumptions

**Advising the government**

This study found no more advice to the government as such. However, the authority seems to advise the government in selected cases. Following table provides an example of its advice.

Table 10

*Advising the Government: Assumptions, Actions, and Achievements*

Basic assumptions	Major actions	Notable achievements
Makes recommendation to the government for specification of the earthquake-affected area (4.1.b)	Made advices to declare highly affected, affected, and least affected districts	The government declared 14 highly affected, 11 affected, and 7 least affected districts

**3.2 Assessment on physical structures' reconstruction**

The pace of the reconstruction of physical structures remained quite slower than actually it should be to complete all the works in five years' tenure of the Authority. However, the work of geological surveys was encouraging. Under the convenorship of NRA, such surveys were completed in 117 human settlements in the first fiscal year 2072/73 and in 545 settlements in the second year 2073/74. Out of the 662 settlements, 136 were urgently requiring translocation.

Although, there was no concrete plan for translocation of the settlement from the NRA, but it had a provision of providing up to Rs 200,000 as grants for land purchase if any beneficiary intends to relocate from the high-risk settlement. In fact, the NRA should have concrete plans for translocation of the high risks' settlements, but the Ministry of Urban Development was working for it.

The pace of reconstruction was also adversely influenced by more than 634,973 grievances filed against the task of beneficiary identification. Apparently, additional time, personnel, and resources were required to handle the complaints/grievances. The following table provides a detail of the reconstruction works.

Table 11

*Reconstruction works progress*

Structures	Damaged number	Reconstruction works						
		Selected	Completed		Continuous		Not started	
		Number	N	%	N	%	N	%
Archeological property	891	753	380	50.46	123	16.33	250	33.20
Gumbas	1320	1320	1	0.08	1279	96.89	40	0.03
Schools	7923	7523	5063	67.30	1516	20.15	944	12.55
Government buildings	483	415	303	73.01	109	26.27	3	0.72
Health institutes	1197	1197	665	55.55	149	12.45	383	32.00
Security force houses		383	183	47.78				
Drinking water and sanitation	3212		791		670			

**3.3 Budgetary assessment**

The Authority's budget depended on the decisions and actions of the government and donor agencies. Nepal government's rules regarding public procurement, land acquisition, land registration, trusts, forests, ancient monuments, and environment seem directly and indirectly affecting the budgetary progress. Similarly, excessive time consumption in preparation of the drawing, designs, and tender documents remained other causes of affecting the speedy expenditure on reconstruction works. For instance, rules and regulations regarding land procurement standards, interest-free loans, and grievance handling procedures were formulated almost two years later in 2074 i.e. just after passing about 40% of total tenure of five years of the Authority.

Table 12

*Status of Financial Budget*

Unit	Budget category	Fiscal Year				
		2072/73	2073/74	2074/75	2075/76	2076/77
Budget in Rs. Billion	Recurring		56.39	4.82	4.34	
	Housing grants			97.34	76.99	
	Capital		56.18	49.02	57.10	
	<b>Total</b>	<b>74.00</b>	<b>112.58</b>	<b>151.18</b>	<b>138.43</b>	
Expenses (%)	Recurring		67.37	65.18	77.97	
	Housing grants			90.89	64.39	
	Capital		20.54	47.25	63.90	
	<b>Total</b>	<b>30.36</b>	<b>44.00</b>	<b>75.92</b>	<b>64.61</b>	

**3.4 Assessment on eco-cultural resiliency**

The objective of NRA is to promptly complete the reconstruction works of the structures damaged by the earthquake in a sustainable, resilient and planned manner to promote national interest and provide social justice. The works of reconstruction, resettlement, and translocation obviously demand more concrete plans and programs to address the objectives of resiliency, national interest and social justice. However, the study could not find such plans and programs

in the annual progress reports of the Authority except a few exceptions about the resiliency of physical structures. The following table reflects the inference drawn from the contents of the reports.

Table 13

*Eco-cultural Resiliency Assessment Framework*

Vulnerability dimensions	Likely hazards	Remarks on resilience measures
Physical structures	Almost all the physical structures that are not covered by the reconstruction works in the affected districts and beyond are still under the risks	The structures that have not been addressed by the reconstruction works require urgent actions to certify those structures as earthquake resistant
Psychological state	<ul style="list-style-type: none"> <li>● People’s increasing expectations of help and supports for them from the donors and government among the people</li> <li>● Downgrading ethical values and increasing tendency of personal-benefit-seeking among the actors</li> </ul>	No programs/initiatives for changing attitude of people in favor of self-reliant to the extent possible in the districts including the conditions of disaster and calamities
Cultural values	<ul style="list-style-type: none"> <li>● Rapidly disappearing the items, places, knowledge and skills of traditional architectural structures, idols, handicrafts, construction materials and processes, instrumentation, and so on.</li> <li>● Shortages of skilled manpower for restoration works</li> <li>● Missing/disappearing typical components of cultural configuration</li> </ul>	Restoring originality while doing reconstruction works at the sites of archaeological and cultural significance. However, initiatives for enhancing such skills are insufficient as a resilience measure of the cultural heritages
Financial condition	Excessive dependence on the donors for funding development activities, no more income generating activities in the areas	No more use of local resources as most of the construction materials were transported from distance within and outside of the country.

### 3.5 Results

The preamble of the Reconstruction Act clearly specifies the rationale of establishing the Authority as to promptly complete the reconstruction works of the structures damaged by the earthquake in a sustainable, resilient and planned manner, and to promote national interests and provide social justice by making resettlement and translocation of the persons and families displaced by the earthquake. The Authority’s mandate consists of ten process activities—surveying, designing, planning, capacitating/organizing, directing/leading, executing, coordinating, evaluating/monitoring, grievance handling, and advising the government of Nepal.

This study finds the process activities carried out by the Authority concentrated on the physical structures of reconstruction, resettlement and translocation works. Out of the ten process activities only three activities—surveying, coordinating, and advising the government of Nepal

are maintaining nominal congruence among the assumptions, actions, and accomplishments. The remaining activities are not maintaining the congruence as there is presence of blank cells i.e. this study could not find the actions and achievements to commensurate the assumptions. The following table provides the level of nominal congruence.

Table 14

*Level of Congruence*

Process activities	Assumptions	Actions	Achievement	Congruence%
Surveying	3	3	3	100
Designing	6	5	5	90
Planning	5	2	2	60
Capacitating	6	3	3	67
Directing	3	0	0	0
Executing	4	3	3	83
Coordinating	1	1	1	100
Evaluating	3	0	0	0
Grievance handling	3	2	2	78
Advising the government	1	1	1	100
<b>Total</b>	<b>35</b>	<b>20</b>	<b>20</b>	<b>71.42</b>

The level of nominal congruence of 71.42% among the assumptions, actions, and achievements concerning the consequential mission is very low. Total (100%) congruence is necessary to ensure the perseverance of the Authority to the assumptions. Mainly, the process activities of the Authority are only addressing the physical structures of reconstruction, resettlement, and translocation. The actions do not address the concerns of national interest, social justice, and reciprocal eco-cultural resiliency.

Partially adapted process activities and corresponding assumptions, actions, and achievements of the Authority seems insufficient to achieve the envisioned transformation in the disaster-affected districts. Deeply rooted self-interest of people and institutions associated with the consequential mission stands as a major challenge in the process of reconstruction.

This study generates the knowledge of involvement of multiple people and institutions—largely dominated by their self-interest—in a resource-constrained mission that endangers the mission’s leadership effectiveness, national interest, and social justice. Separation of self-executing and non-self-executing project(s) as early as possible provides clear insights in mobilization of resources. Balancing a particular timeline and performance at work is the best indicator of mission accomplishment.

## 4 Discussion

Early completion of the reconstruction works, translocation and resettlement of displaced people, promotion of national interest, and assurance of social justice are the four pillars of the Reconstruction Act, 2015, under which the NRA is established. However, the delay in establishment of NRA caused a significant delay in completing the institutional formalities and formulating plans, policies, and directives. Lately introduced Reconstruction Act specifies the functions, duties, and power of the Authority required for physical structural works. But the

Act neither defines the ‘national interest’ and ‘social justice’ nor specifies the functions, duties, and power to promote the national interest and provide social justice.

Subsequently, the actions of NRA have not addressed the concern of national interest, social justice, resilient/secured settlements and prosperous society as such as it addressed the physical structures. In the case of physical structures, it seems affected people focusing on their in-place rebuilding even if the ground is not safer for reconstruction. The efforts of shifting the people and schools to the location that are considered safer from natural disasters like earthquakes, landslides, floods, and so on deemed more challenging because of the people’s emotional attachment to their native places as well as their reciprocal eco-cultural settings. In fact, if there were concrete plans and programs to address the novel concerns of national interest, social justice, and eco-cultural resiliency the consequential mission could be outstanding. In reality, all of the progress reports (2073/74, 2074/75, 2075/76) of the NRA are missing these two integral parts of the mission.

NRA heavily involved donors and international agencies for reconstruction works including reconstruction of major heritages and public structures. Such involvement invited challenges of ensuring congruence of plural interests and coordination of multiple activities. Moreover, some of the activities of foreign countries were continuous at their own discretion. For instance, the grant of about Rs. 75 billion from China was not coming to the government budget; but China spent the money directly to reconstruct schools, hospitals, and structures of archaeological significance. Similar cases were with the other countries’ assistances including the USA and UK as well.

Providing leadership in the reconstruction works seems challenging for the Authority. Coordination of multi-stakeholders, condition of resources constraints, dependency on the donors, and political appointments without committed-supports are seen as some of the major barriers for the leadership. The number of partner organizations was reached to 238 till the end of fiscal year 2075/76. As the number of partner organizations increased, it is obvious to follow multiple paths.

Basically, the Authority couldn’t follow a particular path through its plan to the mission success. Instead, it adopted multiple paths mainly getting things done by oneself, through others, and having tripartite agreements among the NRA, government agencies and partner organizations mainly the INGOs and NGOs. It did not take responsibility for rebuilding the ancient settlements like Sankhu, Khokana, Bungmati, and so on. Instead, it intended to provide additional Rs. 50,000 grants to restore the traditional originality while constructing private homes in the region. Even to rebuild the structures like Singha Durbar, Durbar Squares, it involved countries like Sri Lanka, India, China, Switzerland, Germany, USA, and others. The rebuilding of damaged structures, mainly the structures in Kathmandu Valley is still not getting momentum.

The pace of the reconstruction process is continuous in its own pace. In absence of standard time for the completion of reconstruction work, there are still many works to begin and complete at the end of the Authority’s tenure. A firm commitment to a particular timeline was necessary for every project. The Authority did not divide its total works into five or six parts as

the Reconstruction Act 2015 Section 3.3 had granted a mandate of 5+1 years for completion of the entire reconstruction works.

The NRA selectively reports its annual progress in quantitative form. It does not report like what portion of its tenure has been completed and what portion of its works have been completed.

Livelihood programs were carried out in the earthquake affected districts by the governmental and non-governmental organizations instead of the NRA. NRA's reports have ignored the fundamental issues of reciprocal eco-cultural resiliency such as the vulnerabilities of higher-economic status people, lower-economic status people, house owners, business owners, individual renters, business renters, farmers, elderly people, children, and other demographic aspects of the people. In one way, post-disaster reconstruction in hazard-exposed areas can unintentionally amplify societal vulnerability beyond that which existed before the disaster (McCaughey, Daly, Mudir, Mahdi, & Patt, 2018). The disputes and inability of people to rebuild their own homes or relocate for livelihood could be some examples of it.

The study argues reciprocal eco-cultural resilience as a moderator of vulnerability and immunity to post-disaster tragedies. Partially integrated planning premises, actions and commitments of the Authority combined with its decisions and actions were insufficient to achieve the envisioned transformation in the disaster-affected districts. Good social relationships and mutual help are instrumental in post recovery of disaster, which has been exhibited exemplary in Nepal. People sheltered together in make-shifts, shared foods and emotions, built congenial relationships, and developed resiliency during the disaster (Bhattarai, 2016).

The ethical concerns are another aspect of reciprocal eco-cultural resiliency. For instance, Shailaja, one of the victims of the earthquake of 2045 says "the earthquake completely damaged our home at Vijayapur Dharan. We didn't take the 100 Kg rice given by the government as humanitarian relief because we were able to manage sufficient rice for our family at that time. Later, the government provided low cost loans for private house construction, but we were not eligible to get that because we were not considered as a victim. If we had accepted the rice, then we would be considered as victims'. Now, the tendency seems to have changed as people tend to take as much as benefits they can take without considering their right to get it. Increasing tendencies of violating ethical norms are challenging the concerns of social justice and eco-cultural resiliency.

Government fiscal and monetary policies are other concerns of eco-cultural resiliency. Absence of efforts to address the issues of inflation (as it increases as increase in inflow of money to the disaster areas during the rescue, relief, and reconstruction phases) and inadequate efforts to address the issues of interests on loans (as the victims are unable to afford for it) are damaging the eco-cultural resiliency in the disaster areas. Moreover, there are examples of removal of taxes (on construction materials) in the post disaster recovery process (Rey, De, Leone, & Gilbert, 2017); however, the NRA could not be instrumental in this regard to influence the government of Nepal.

## 5 Conclusions and recommendations

Self-centered plural interests of the concerned people and institutions in addition to the condition of resources constraint of the government of Nepal are major impediments of the reconstruction mission. An urgency of ensuring compatibility among the laws and policies of the country, the NRA, and the donors caused delays in the planning process. Substantially higher number of grievances distorted the perception of a large number of people and institutions. The authority could not deliver a robust plan and strong leadership. The plans and programs prepared so far could not be committed to a particular timeline even for the physical structural works. Moreover, the concerns of national interest, social justice, and resiliency could not be addressed. Plural interests and preferences of all involved could not be complementary in the reconstruction work. The downgrading ethical standard of key stakeholders and excessive dependency on foreign donors are alarming the reciprocal eco-cultural resiliency.

Comprehensively clear Reconstruction Act, demarcation of self-executable and non-self-executable projects, balance of particular timeline and performance at work, and compatible controls measures are basic recommendations for post-earthquake reconstruction work. Application weighted congruence of the assumptions, actions, and achievements concerning the reconstruction process activities is added advantage.

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