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Original paper

## Reviewing Accountability Mechanisms in Nepal's 2015 Earthquake Reconstruction

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**Abstract** This systematic review delves into the critical domain of accountability mechanisms in the context of service providers, particularly in post-disaster reconstruction efforts. By employing a thematic analysis approach, the study evaluates various dimensions of accountability, including participation, transparency, feedback mechanisms, coordination, and institutional arrangements. The findings underscore the prevalent exclusion of vulnerable groups during decision-making processes, necessitating concerted efforts to promote inclusivity and representation. Additionally, the centralized nature of post-disaster reconstruction authority impedes local-level decision-making and responsiveness, emphasizing the urgency of empowering local governments and communities. The review reveals a dearth of empirical research on accountability practices at the local level, highlighting the need for further investigations and evidence-based studies. Despite positive aspects such as heightened participation and transparency, addressing identified gaps and challenges is essential to ensure more inclusive, responsive, and effective reconstruction processes.

**Keywords:** Accountability, Earthquake, and Reconstruction

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## 1. INTRODUCTION

Between 2011 and 2019, Nepal experienced major disasters, including epidemics, earthquakes, landslides, floods, fires, and cold waves. It resulted in the tragic loss of 11,429 lives and estimated damages and losses equivalent to USD 5,804 million (Khanal, 2020). Historically, large earthquakes in Nepal have led to substantial property damage and human casualties. In 1934, the Great Nepal-Bihar Earthquake occurred with an 8.4 Richter scale magnitude and its epicenter approximately 240 kilometers east of Kathmandu. According to reports, this earthquake resulted in the loss of 8,519 lives and the devastation of 207,248 buildings in Nepal (Pandey and Mohar, 1988). Subsequently, the 1988 Udayapur Earthquake, measuring 6.8 on the Richter scale, caused significant fatalities in the eastern region and the Kathmandu Valley (Dixit, 2014), claiming 717 lives and destroying 65,145 (Chamlagain *et al.*, 2011).

In response to the 1988 earthquake, several actions were taken, including raising public awareness of earthquake risks, establishing and enforcing building regulations, and implementing various modifications to enhance the safety of schools and hospitals (Bothara *et al.*, 2018). On April 25, 2015, the Gorkha Earthquake occurred with a magnitude of 7.6 on the Richter scale, followed by over 300 aftershocks, leading to the loss of 8,790 lives and injuring 22,300 individuals. The estimated losses and damages from this earthquake were valued at USD 7,065 million. These earthquakes had a significant impact on approximately eight million people, constituting nearly one-third of Nepal's total population. To address the aftermath of these disasters, extensive humanitarian assistance was provided by international emergency response teams and consultants for relief and rehabilitation, with Nepal's development partners pledging over USD 4.1 billion (NPC, 2015).

In May 2016, the Government of Nepal (GoN) introduced a recovery framework focusing on reconstruction. The framework aimed to prioritize reducing vulnerability, ensuring fair and equitable aid distribution, and promoting owner-driven housing reconstruction (NRA, 2016). In facilitating reconstruction efforts, the GoN established the National Reconstruction Authority (NRA). Despite being a newly formed structure without prior experience or established connections with major stakeholders in urban governance (Daly *et al.*, 2017), the NRA commenced its reconstruction work in December 2015, as local governments were not yet in place. Local government elections were held on May 14 and June 28, 2017, resulting in a year and a half of operation without them. Previously, the lowest level of local government in Nepal was represented by the Municipality and Village Development Committee, which ceased to exist in 2015 following the promulgation of a new Constitution (GoN, 2015). After the elections, in November 2018, the NRA signed a Memorandum of Understanding (MoU) with the newly established municipalities and rural municipalities. This MoU aimed to transfer some of the NRA's authority to the local governments, including the management of engineers and other technicians at the local level. While the local government expressed willingness to manage the housing grant, it was constrained by federal financial regulations set by the Office of the Comptroller General, preventing them from doing so effectively.

A crucial aspect of a good governance system that promotes development and risk mitigation is the incorporation of accountability, participation, predictability, and transparency (Ahrens

and Rudolph, 2006). These factors are inextricably linked with accountability, making it essential to consider transparency and participation in any discourse related to it (Gaventa and McGee, 2013; IDS, 2011).

In Nepal, there exist Disaster Risk Management laws, regulations, and policies aimed at addressing the risks posed by disasters, including earthquakes. However, the effective implementation of these measures is hindered by a lack of institutional resources. While the regulatory framework outlines the responsibilities of different levels of government, the accountability systems in place are insufficient.

The need for planning guidelines and policy interventions for disaster resilience is essential (Rahman *et al.*, 2021). According to Article 19(e) of the Sendai Framework (UNISDR, 2015), successful disaster risk reduction depends on sector-specific and cross-sectoral coordination, complete participation, and clear roles for all state agencies and stakeholders to ensure shared accountability. However, the lack of coordination between various levels of government hinders the development of necessary tools for effective disaster governance by new officials. Vulnerable populations are often overlooked in community-based disaster risk reduction initiatives (Vij *et al.*, 2020).

Earthquakes impact everyone and everything in society, necessitating active involvement in disaster risk management. Understanding roles and responsibilities beforehand is crucial for city governments, supporting organizations, and residents (NSET, 1998). Earthquake response can be categorized based on a disaster cycle (Figure 1).

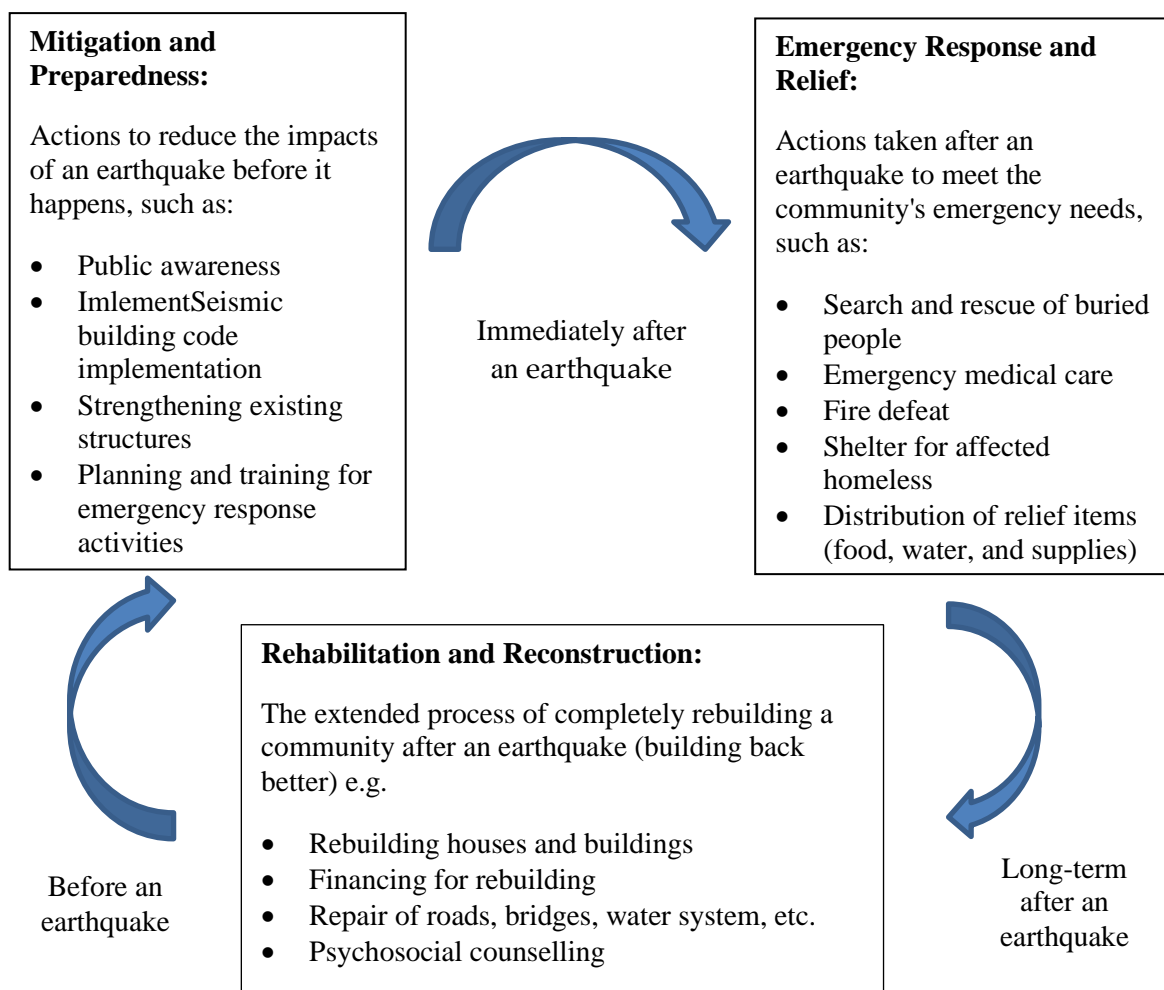
Humanitarian crisis support agencies prioritize delivering timely and quality responses while maximizing resource utilization through collaboration with other entities. Transparency, participation, and feedback are essential aspects of their approach. Research indicates that social network members play a crucial role in providing initial disaster assistance, including warning messages and recovery information (Young-Jun and Hanada, 2020).

The literature review highlights that while provisions for governance and accountability mechanisms exist during humanitarian crisis response, there remains a dearth of empirical research and literature assessing their implementation on the ground. Corruption significantly impacts humanitarian actions, leading to substantial losses of relief and reconstruction funds. To combat corruption, sustained commitment from individuals and institutions is necessary for accountability practices and ongoing advocacy during crisis management (Duri, 2021).

Transparency and accountability have gained importance as strategies for addressing democratic shortcomings and developmental failures in recent decades (Gaventa and McGee, 2013). The lessons learned from the 2015 Gorkha earthquake underscored the need for community participation in disaster response and preparedness at all levels, as well as the cultivation of local leadership skills and community resilience (Lee *et al.*, 2016). However, despite being aware of the risk of earthquakes, only a small proportion of Nepalese have taken precautionary measures (Laursen, 2015).

During the reconstruction phase of the 2015 Gorkha earthquake, there was a low level of transparency, participation, and accountability mechanisms, particularly in decision-making processes involving disadvantaged communities. The practice of accountability mechanisms was inadequate, and there is a lack of systematic assessment, analysis, and documentation, which hinders effective data management and information sharing during the reconstruction process. To address these issues, further studies are needed to ascertain the information needs of local stakeholders and communities (Michaels *et al.*, 2019).

To address these concerns, the review focused on assessing and analyzing the practices of accountability mechanisms, with emphasis on participation, transparency, feedback, and institutional arrangements and coordination during the reconstruction of the 2015 Gorkha earthquake. The review aimed to answer the main research question regarding the role of accountability factors in the reconstruction process and identify gaps in accountability mechanisms, providing insights to improve future earthquake reconstruction efforts.



Source: Kathmandu Valley Earthquake Risk Management Action Plan, 1998 (NSET, 1998)

Figure 1: The Adapted and Modified Disaster Cycle

## 2. METHODOLOGY

The qualitative systematic review, conducted in accordance with the guidelines of Higgins *et al.* (2011), aimed to explore the qualitative evidence presented in the original studies. To achieve this objective, several established qualitative synthesis methods, including meta-ethnography, critical interpretative synthesis, and thematic synthesis, were considered as potential approaches (Thomas and Harden, 2008). Ultimately, the review process employed a thematic analysis method following the guidelines of the Cochrane Qualitative and Implementation Methods Group, as proposed by Harris *et al.* (2018). Moreover, the identification and selection of studies were conducted in a systematic manner, guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page *et al.*, 2021). The PRISMA framework is widely recognized and accepted as a comprehensive reporting guideline for systematic reviews and meta-analyses, ensuring transparency, rigor, and reproducibility in the review process. Figure 2 presents a visual representation of the PRISMA framework, illustrating the step-by-step process of study identification and selection, as well as the flow of studies through the review stages. By adhering to these rigorous guidelines and employing the thematic analysis approach, the systematic review sought to provide a comprehensive and robust synthesis of qualitative evidence from the selected original studies.

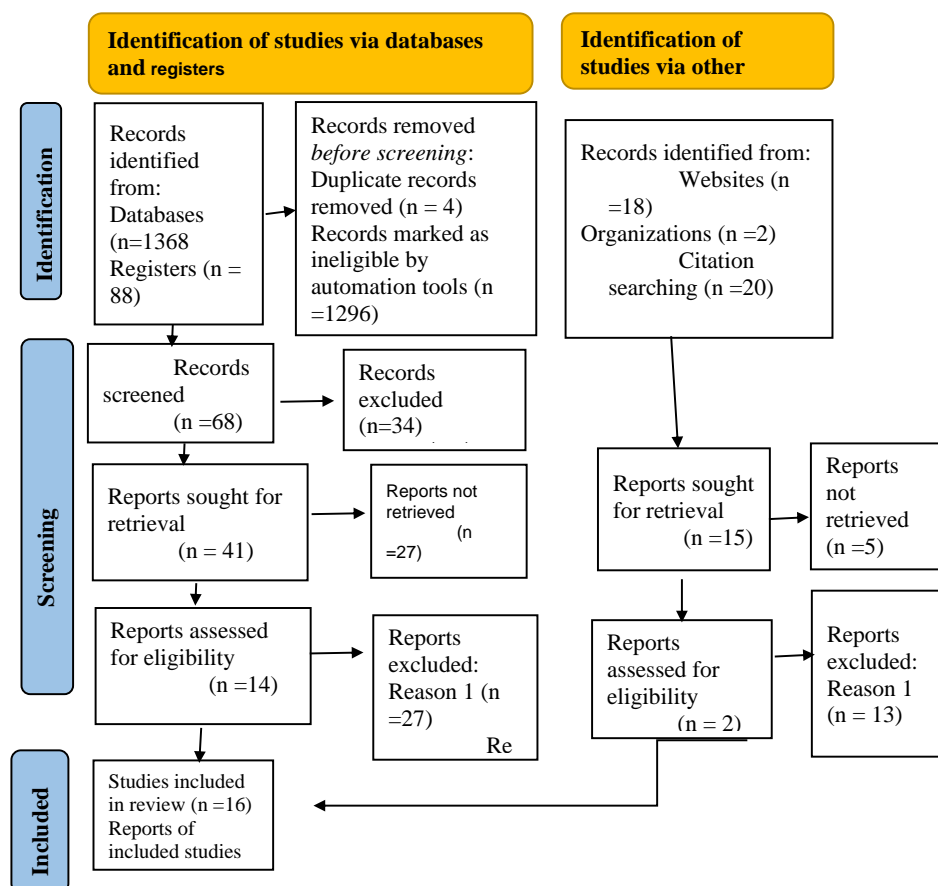
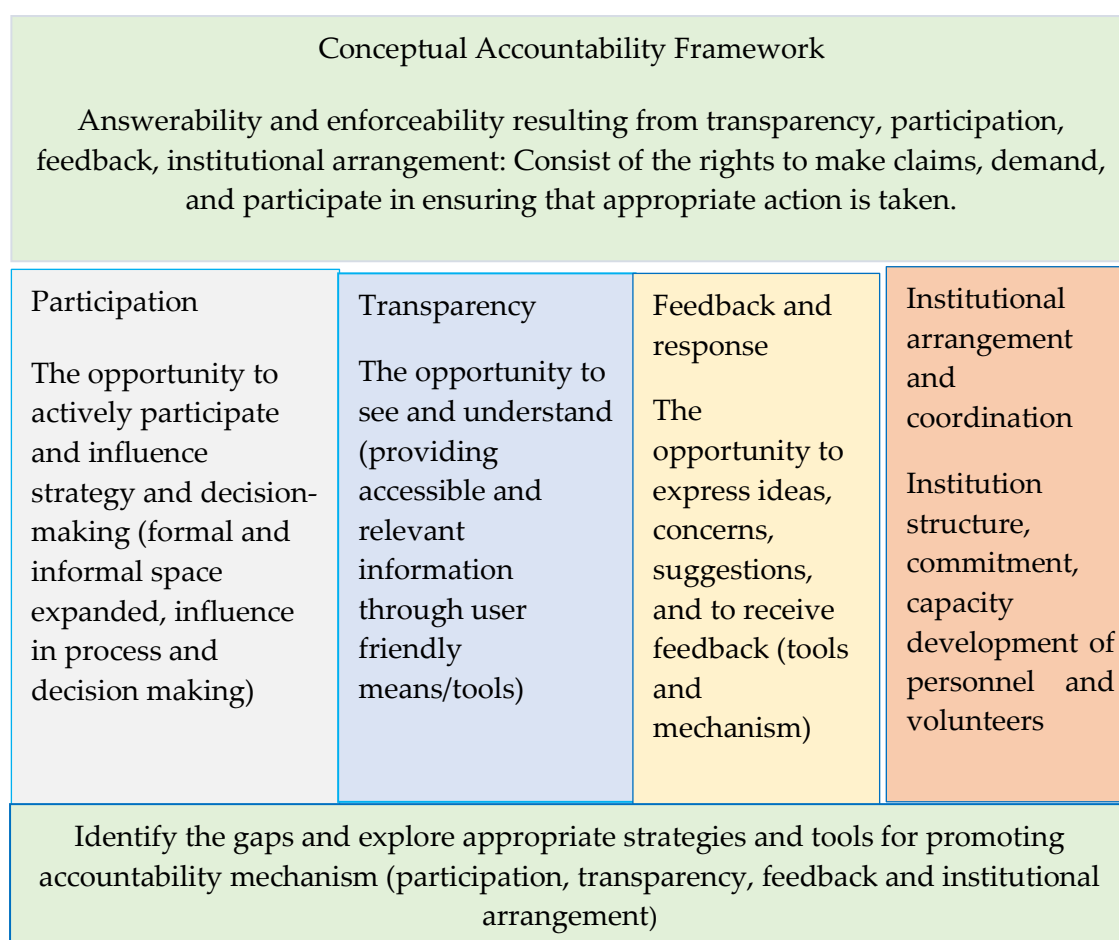


Figure 2. The PRISMA Flow Diagram (Page et al., 2021)

## 2.1 Conceptual Accountability Framework

Enhancing accountability mechanisms for communities impacted by disasters necessitates the active engagement of multiple stakeholders, notably the local government. This involvement entails incorporating disaster-affected communities in the design, implementation, and decision-making processes. Concurrently, service providers and local authorities must uphold transparency by furnishing pertinent and easily accessible information to the affected communities, as underscored by Forest (Forest, 2018). To comprehensively assess and analyze the accountability landscape, the review will be structured around the four fundamental dimensions of accountability, namely participation, transparency, feedback, and institutional arrangement and coordination, as depicted in Figure 3.



Source: Climate Risk Insurance/Munich Climate Insurance Initiative (Forest, 2018)

Figure 3: Modified Dimensions of Accountability

## 2.2 Search Strategy

PRISMA served as the adopted search strategy tool for systematic reviews, primarily to facilitate data acquisition, encompassing the processes of identification, screening (to define

eligibility criteria), and inclusion (Figure 1). The selection of relevant data involved the utilization of central keywords and related terms (Okoli, 2015), which were generated based on expert recommendations and prior studies. A key aspect of conducting a systematic literature review search lies in determining appropriate keywords to employ (Siddaway et al., 2019). The search process primarily targeted main electronic databases and specialized electronic libraries, including Google Scholar, JSTOR, SEMANTIC Scholar, Web of Science, and Science Direct databases. The search string incorporated keywords such as [accountability AND mechanism\* OR 2015 Gorkha\* AND earthquake\*]; OR [reconstruction\* AND Nepal] (2005–2022). The use of AND, OR, and "\*" operators was applied and accepted in major databases, with the exception of hand-searched documents.

### **2.3 Inclusion and Exclusion Criteria**

The development of inclusion and exclusion criteria aims to streamline the identification process of relevant studies during the primary search. The specified inclusion/exclusion criteria encompassed the following aspects: i) the incorporation of journal articles directly pertinent to disaster governance, earthquake disasters, and post-reconstruction, while excluding articles focused on different types of disasters such as floods and landslides and their respective social determinants; ii) the inclusion of studies conducted between 1998 and 2022/10, with studies conducted outside this timeframe excluded; iii) the inclusion of studies conducted within Nepal for analysis, while studies conducted in countries other than Nepal were excluded from analysis but considered as literature from other countries; and iv) the inclusion of studies presented in the English language, with studies presented in other languages excluded.

### **2.4 Data Extraction and Synthesis**

The characteristics and outcomes from the literature were collected and organized according to Table 1. The analysis process primarily involved: i) extracting data based on the initial question - the extent to which tools and processes were implemented. Following the conceptual accountability framework, the accountability mechanisms were categorized into four themes: participation, transparency, feedback and response, and institutional arrangement and coordination (Table 2). ii) Sub-themes were identified through content analysis of each included article, with the number of articles reflecting each sub-theme during the 2015 Gorkha earthquake reconstruction listed.

## **3. RESULTS**

### **3.1 Study Descriptions**

A total of 1,368 articles were retrieved from major data sources, and 15 policy-related documents were obtained from the websites of the Government of Nepal, the United Nations, and relevant international and national non-governmental organizations pertaining to the study. After conducting title and abstract screening for the generated articles and reports/policy documents, 68 of them underwent full-text screening, ultimately resulting in 16 articles being included in the analysis. Only published articles were considered for inclusion to ensure quality, with a description of the included studies provided in Table 1. Out of the 16 selected articles,

three each were focused on governance and disaster governance, while two each discussed inclusion, disaster management, and housing reconstruction. Additionally, four articles pertained to other themes such as accountability, grievance handling, speed, quality recovery, and the political economy of the 2015 earthquake. Regarding the publication years, five articles were published in 2021, four in 2018, three in 2019, two in 2016, and one each in 2017 and 2020. The literature reviewed spanned from January 2005 to October 2022. Geographically, the study included articles from 13 earthquake disaster-affected districts: Gorkha, Lamjung, Dhading, Rasuwa, Nuwakot, Kathmandu, Bhaktapur, Lalitpur, Makawanpur, Kavrepalanchowk, Sindhupalchowk, Dolakha, and Ramechhap. Regarding the research methodology, 14 articles utilized the qualitative method with thematic analysis, while only two studies adopted a mixed method approach.

**Table 1. Description of the Included Studies/Articles**

Study	Study objective	Study sites	Themes	Data collection	Methodology	Analysis
Acharya (2018)	Governance in post-disaster initiatives	Rasuwa	Governance	In-depth interview, Focus Group Discussion (FGD), Literature review	Empirical research (qualitative)	Thematic analysis
Bothara <i>et al.</i> (2016)	The challenges of housing reconstruction after the April 2015 Gorkha earthquake	Nepal	Housing reconstruction	Literature review	Qualitative	Thematic analysis
Daly <i>et al.</i> (2017)	Situating local stakeholders within national disaster governance structures	Kathmandu	Disaster governance	In-depth interview, observation	Qualitative, case study	Institutional ethnography
Dhungana and Flora (2019)	Early responders experienced multiple accountability demands in the emergency response to the 2015 Nepal	Kathmandu	Accountability	In-depth interview	Interpretive and exploratory qualitative research	Thematic analysis
Dhungana and Nicole (2021)	Politics of participation manifest in a post-disaster context	Shankarapur, Kathmandu	Governance (participation)	In-depth interview, observation	Empirical research (qualitative)	Ethnography analysis
Joshi (2019)	Handling of grievances in the National Reconstruction	Nepal	Handling of grievances	FGD, literature review	Mixed method	Content analysis



	Authority after the 2015 earthquake					
Koirala (2021)	Is the disaster management mechanism functioning properly in Nepal?	Dhading, Nuwakot, Makawanpur, Kathmandu, Bhaktapur, Lalitpur	Disaster management	Participant survey	Empirical research (quantitative)	Statistical analysis
Lam and Kuipers (2019)	Resilience and disaster governance – some insights from the 2015 Nepal earthquake	Nuwakot and Dhading	Disaster resilience	Key informant Interview (KII), FGD, observation	Qualitative( Grounded theory)	Case stories
Melis, S. (2020)	Post-conflict disaster governance	Gorkha, Kathmandu, Sindhupalch wok	Disaster governance	FGD, KII, in-depth interview	Grounded approach (qualitative)	Thematic analysis
Platt <i>et al.</i> (2018)	Measure the speed and quality of recovery after the 2015 Gorkha earthquake	Earthquake disaster crisis 13 districts including Kathmandu, Bhaktapur, and Lalitpur, Nepal	Speed and quality recovery	Household survey, online survey, interview	Empirical research (quantitative)	Critical review
Rawal <i>et al.</i> (2021)	Inclusion of the poor and vulnerable: learning from post-earthquake housing reconstruction	Gorkha	Inclusion of the poor and vulnerable	Household survey, literature review	Empirical research (Mixed method)	Issue-based analysis
Regmi (2016)	Political Economy of the 2015 Nepal Earthquake	Dhading	Political economy	In-depth interview, observation	Case study	Institutional ethnography
Russel <i>et al.</i> (2021)	Collaborative governance regime for disaster risk reduction	Nepal	Collaborative governance	Semi-structured interview	Empirical research (qualitative)	Normative analysis
Shrestha <i>et al.</i> (2021)	Constraints of urban housing reconstruction	Lalitpur, Bhaktapur, Ramechhap, Dhading, Dolakha, Kavre, and Gorkha districts	Urban housing reconstruction	FGD, KII, literature review	Empirical research (qualitative)	Thematic (issue-based analysis)
Shrestha <i>et al.</i> (2018)	Disaster Justice in Nepal's earthquake recovery	Gorkha, Lamjung,	Disaster justice	Interview, FGD	Empirical research (qualitative)	Thematic analysis

		Kavre, and Kathmandu				
Thapa and Pathranarakul (2019)	Gender Inclusiveness in disaster risk governance for sustainable recovery of the 2015 Gorkha Earthquake	Kathmandu and Sankhu	Gender inclusiveness	Household survey, KII, FGD, Literature review	Empirical research (mixed method)	Thematic analysis

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### 3.2 Analyzing Accountability Mechanisms in Selected Articles

The researchers utilized an accountability framework, as depicted in Figure 2, to collect and analyze the data. This framework facilitated thematic categorization, resulting in the identification of four overarching themes, each comprising 22 subsequent sub-themes. A comprehensive analysis of the themes and sub-themes covered in the studies is provided below.

#### 3.2.1 Participation

Participation emerges as a significant factor within the accountability mechanism, as indicated by this review. A substantial proportion (37%) of the included studies emphasized involvement of vulnerable and affected populations (Acharya, 2019). This approach allowed building owners to embrace their cultural and traditional identities by incorporating seismic features into the reconstruction process (Bothara *et al.*, 2018). Notably, special provisions, such as land ownership and additional funding, played pivotal roles in the success of ownership-driven construction (Rawal *et al.*, 2021). However, the Government of Nepal adopted a centralized housing reconstruction strategy, forsaking the original owner-driven approach, which led to reduced community participation and failed to foster local involvement (Lam and Kuipers, 2019; Platt *et al.*, 2020). Some aid agencies further deviated from owner-driven programs and pursued self-designed initiatives without coordination with the relevant government platforms, thus undermining participatory efforts (Shrestha *et al.*, 2018).

The involvement of vulnerable groups and reconstruction committees emerged as another prominent sub-theme in 37% of the analyzed articles. Notably, community reconstruction committees, comprising local leaders and volunteers, were formed to collaborate with house owners and supporting agencies in devising and executing reconstruction plans (Daly *et al.*, 2017). The reconstruction process emphasized personal values and aspirations, while also considering minimal protocols and standards (Dhungana and Cornish, 2019). However, limited community participation excluded vulnerable groups (Platt *et al.*, 2020), and women encountered exclusion from formal mechanisms for disaster recovery planning and management (Thapa and Pathranarakul, 2019). In their quest for personalities with higher morale at the local level (Dhungana and Curato, 2021), vulnerable groups felt marginalized from the decision-making process, though the establishment of self-help groups in specific locations provided a means to amplify their voices.

Furthermore, 31% of studies highlighted the involvement of local social elites and politicians as another crucial sub-theme. Their participation in reconstruction committees facilitated the development of comprehensive plans, considering the restoration of traditional Newari heritage and tourism (Daly *et al.*, 2017). While meetings were held to address the concerns of vulnerable groups in the presence of local politicians, their decision-making power appeared limited (Lam and Kuipers, 2019). The involvement of local leaders occasionally led to conflicts between service providers and beneficiaries, given the varying satisfaction levels of the latter (Melis, 2020). Social elites played a significant role in rescue and recovery efforts, owing to their strong connections with service providers (Shrestha *et al.*, 2018).

Inclusion and marginalization were other important sub-themes mentioned in 18% of studies. Vulnerable groups continued to experience exclusion, thereby limiting opportunities for strategic discussions with state and non-state actors (Melis, 2020). Despite policy provisions, exclusion persisted in central-level apex committees dedicated to disaster management and recovery (Shrestha *et al.*, 2018), depriving the most vulnerable individuals of their voice in practice (Dhungana and Curato, 2021). Similarly, 18% of studies underscored the significance of decentralization of power and authority. Notably, the absence of a formal system for local stakeholders to communicate with the National Reconstruction Authority (NRA) hindered effective involvement of local communities in the reconstruction process (Daly *et al.*, 2017). Weak policy implementation in earthquake reconstruction also limited government efforts in addressing accountability aspects relative to the needs of vulnerable populations (Thapa and Pathranarakul, 2019).

The blanket approach was identified as a sub-theme in 12% of studies, characterized by its application in housing reconstruction to encompass all affected individuals. While the state favoured this approach to cover well-off families and partially damaged households, tensions between state and non-state actors arose due to humanitarian considerations (Melis, 2020). However, support for vulnerable groups in house reconstruction proved inadequate and impractical (Lam and Kuipers, 2019).

### **3.2.2 Transparency**

Transparency emerges as a crucial theme in ensuring effective accountability mechanisms during the reconstruction process. Within this theme, 31% of the studies highlighted the transparent management of housing grants, while 18% focused on transparent assistance packages available to the public. A study emphasized the significance of governance and transparency as essential elements in managing external aid (Melis, 2020). However, the reconstruction strategy's reliance on a uniform assistance package proved insufficient for housing reconstruction, particularly for low-income individuals (Bothara *et al.*, 2018). Although additional funds were allocated for landless and poor communities, the limited financial assistance and failure of subsidized bank loans compelled vulnerable households to construct smaller houses (Rawal *et al.*, 2021). Moreover, the lack of a clear and transparent policy for providing financial assistance to repair damaged houses further compounded the challenges (Daly *et al.*, 2017).

Corrupt practices were mentioned in 12% of the studies. The poor accountability mechanisms allowed corruption to flourish, subsequently disrupting the reconstruction process (Acharya, 2019). Effectively reaching the most affected communities would be challenging without developing a robust and reliable mechanism to combat corrupt practices (Regmi, 2016). Public hearings were identified as practical tools for promoting transparency and accountability mechanisms. The National Reconstruction Authority (NRA) had provisions for conducting public hearings every six months; however, its functionality was found to be lacking (Daly *et al.*, 2017). While data and information on house reconstruction were collected and maintained by the NRA following the prescribed format (Joshi, 2019), house owners were responsible for ensuring compliance with technical norms without adequate information, further underscoring transparency issues.

### 3.2.3 Feedback and Response

Within the feedback and response theme, handling grievances is a prominent aspect mentioned in 44% of the studies. Accountability in this context encompasses addressing various forms of public opposition and disapproval faced by early responders, not only from impacted communities but also from the broader public (Dhungana and Curato, 2019). The guidelines for grievance management related to reconstruction and rehabilitation established procedures for addressing all grievances pertaining to private housing grants (Shrestha *et al.*, 2021). However, the grievances expressed by the most affected households were not adequately heard and addressed (Acharya, 2019). Additionally, the centralized system limited the expression of collective grievances (Dhungana & Curato, 2021). The state received numerous complaints as it struggled to provide the necessary services (Melis, 2020). Notably, there was significant criticism of the government's reconstruction efforts for being excessively slow (Platt *et al.*, 2020; Thapa and Pathranarakul, 2019).

Construction monitoring and inspection are sub-themes identified in 12% of the studies. The reconstruction process lacked an effective monitoring mechanism for site selection and building design (Bothara, 2018). Similarly, the National Reconstruction Authority (NRA) failed to timely monitor the construction of private houses, resulting in delays in fund disbursement (Daly *et al.*, 2017). Negotiations between state and non-state actors are another sub-theme mentioned in 12% of the studies. The standardization in housing reconstruction was found to undermine the concerns of local actors (Dhungana and Curato, 2021). Furthermore, the exclusion of the most vulnerable groups affected the dynamics of negotiations between state and non-state actors (Melis, 2020). The absence of elected local government further hindered the quality and availability of services (Bothara *et al.*, 2018).

### 3.2.4 Institutional Arrangement and Coordination

Institutional arrangement and coordination constitute the fourth and most crucial themes in accountability mechanisms. Under this theme, coordination mechanisms are mentioned as a sub-theme in 56% of the studies. Government regulation has emphasized greater accountability to affected people for early response (Dhungana and Curnish, 2019). The National Reconstruction Authority (NRA) was established to coordinate inter-agency recovery work

(Acharya, 2019). A study stated that recovery and reconstruction work were more effective than preparedness (Joshi, 2019). However, there was a low level of coordination when rebuilding heritage sites (Daly *et al.*, 2017). Reconstruction efforts in a few urban centers were coordinated by the local construction committees, which assisted in the planning and reconstruction process (Daly *et al.*, 2017). Coordination between NRA officials and local government and non-governmental organizations was rare due to confusion about their roles (Lam and Kuipers, 2019). The reconstruction process was characterized by a low level of collaboration at the local level (Platt *et al.*, 2020). Lack of consultation with local people has diminished the potential of the participatory reconstruction process (Regmi, 2016). It was also found that coordination among government and non-government actors was limited due to the complicated national-level structure (Shrestha *et al.*, 2018).

The formation of the NRA as the lead institutional agency for post-earthquake reconstruction is mentioned as a sub-theme in 44% of studies. Nepal's new institutional and policy framework created an enabling environment for reconstruction work in the country (Russell *et al.*, 2021). The NRA was established and authorized to lead reconstruction efforts and disburse funds (Acharya, 2019; Bothara *et al.*, 2018). The NRA has developed a strategy and institutional framework, such as the post-disaster recovery framework (2016–2020), to provide systematic support in recovery and reconstruction work (Acharya, 2019; Bothara *et al.*, 2018). However, contrary to the strategy, the NRA adopted a top-down approach to reconstruction that limited transparency and participation at the local level (Dhungana and Curato, 2021). Similarly, the NRA did not delegate authority to the local government at the required level (Shrestha *et al.*, 2021).

Centralized post-disaster reconstruction, as a sub-theme, is mentioned in 25% of studies. The housing reconstruction program in Nepal follows a top-down and centralized process (Lam and Kuipers, 2019). Centralized post-disaster reconstruction limited the role of local authorities and political leaders (Dhungana and Curato, 2021). The legal framework for disaster management is poorly developed, which also affects the accountability mechanism (Shrestha *et al.*, 2018). The NRA did not delegate power to the local government for decision-making (Shrestha *et al.*, 2021).

Technical and administrative capacity is a sub-theme stated by 18% of the studies, which is important for ensuring quality service. The NRA has not provided sufficient staff and resources at the local level to enhance technical and administrative capacity (Daly *et al.*, 2017). Accountability requires adherence to minimum standards and quality to be followed by early responders (Dhungana and Curnish, 2019). Due to ineffective training programs, the community-based reconstruction program was slow in most of the villages (Lam and Kuipers, 2019).

The role of local government is another sub-theme, as stated by 18% of the studies. Unclear roles and responsibilities of local government created confusion in post-disaster initiatives (Acharya, 2019). It is important to work with the local government to build the required skills and knowledge and expedite reconstruction work (Daly *et al.*, 2017). Due to the absence of

elected local government, government officials served as in charge and continued governance at the local level (Bothara *et al.*, 2018).

**Table 2: Key Themes and Sub-themes of Accountability Mechanism Explored From the Selected Articles**

Themes	Sub-themes	No of articles In %
Participation	Ownership driven reconstruction	6 (37)
	Involvement of vulnerable groups/reconstruction committees	6 (37)
	Involvement of local social elites/politicians	5 (31)
	Exclusion and marginalization	3 (18)
	Decentralization of power authority	3 (18)
	Include all affected people/blanket approach	2 (12)
Transparency	Management of housing installment/funds	5 (31)
	Assistance package	3 (18)
	Corrupt practices	2 (12)
	Public hearing	2 (12)
	Data and information sharing	2 (12)
Feedback and response	Handling of the grievances	7 (44)
	Construction monitoring/inspection	2 (12)
	Negotiations between state and non-state actors	2 (12)
Institutional arrangement and coordination	Coordination mechanism	9 (56)
	Lead reconstruction agency-National Reconstruction Authority (NRA)	6 (37)
	Centralized post-disaster reconstruction	4 (25)
	Role of local government	3 (18)
	Technical and administrative capacity	3 (18)
	Training and Awareness	3 (18)
	Division of roles and responsibilities	2 (12)
	Reconstruction Committee/council	2 (12)

Reconstruction committee/council is mentioned as a sub-theme in 18% of the studies. The NRA formed community reconstruction committees to coordinate with local-level actors (Daly *et al.*, 2017). In some locations, the community itself formed reconstruction committees to plan and implement reconstruction work, taking into consideration traditional and heritage architecture (Daly *et al.*, 2017). Additionally, local activist groups were formed and operated in some communities to communicate and expedite the reconstruction work (Dhungana and Curato, 2021). Training program/awareness is mentioned as a sub-theme in 18% of the studies. Well-managed training programs are important to accelerate reconstruction work (Bothara *et*

*al.*, 2018). These training programs enhanced the knowledge and skills of local people to meet national priorities (Russell *et al.*, 2021). Public awareness of earthquake risk significantly increased after the Gorkha earthquake of 2015 (Platt *et al.*, 2020).

Division of roles and responsibilities is stated as a sub-theme by 12% of the studies. The NRA took the lead role in collecting and screening grievances through their Engineers team (Joshi, 2019). Four ministries, namely the Ministry of Urban Development, the Ministry of Federal Affairs and General Administration, the Ministry of Environment, and the Ministry of Culture, Tourism, and Civil Aviation, set up their structures at the central and district levels to implement major reconstruction works (Acharya, 2019). District Coordination Committees were responsible for coordinating with district-level stakeholders and overseeing the progress of the work (Acharya, 2019).

## **4. DISCUSSIONS**

### **4.1 Accountability Practice in the 2015 Gorkha Earthquake Reconstruction**

According to the research, the immediate search and rescue, as well as relief efforts after the 2015 Nepal earthquake, were considered successful (Cook *et al.*, 2018). The ultimate goal of humanitarian intervention has been observed as being accountable to the affected populations. The humanitarian system has regularly committed to upholding this principle, but in most cases, it has not yet been fully realized (IASC, 2015). The research findings indicate that there needs to be a shift in how accountability and participation are understood in post-disaster governance. The thematic discussions on accountability mechanisms practiced in the 2015 Gorkha earthquake reconstruction are provided below.

#### **4.1.1 Participation**

Reconstruction of damaged houses, identification of vulnerable families, disbursement of top-up grant assistance, and subsidized loans could not be as effective as anticipated; as a result, the inclusion of the vulnerable, though well-intended, in the policy framework remained limited (Rawal *et al.*, 2021). Following the 2015 Gorkha earthquake, the opportunity for participatory reconstruction has been reduced by a lack of local consultation (Regmi, 2016). Although a reconstruction committee was formed at the community level, the participation of the most vulnerable people was limited. The research revealed that attempts made after the earthquake to translate citizens' voices into state responses were ineffective (Dhungana, 2020).

The inclusion of women is essential for resilience and successful disaster risk governance. However, due to socioeconomic, sociocultural, individual, legal, institutional, and socioeconomic considerations, their influence on organizational decision-making is limited (Hemachandrea *et al.*, 2018). The Government of Nepal (GoN) adopted a blanket approach for support mechanisms in private housing reconstruction, which is not justifiable for the most vulnerable and low-income families. Research demonstrates that the entire reconstruction of Nepal was marked by low levels of community involvement and the exclusion of vulnerable groups, undermining the possibility of creating a resilient society (Lam and Kuipers, 2019).

Nepal's reconstruction could learn from the reconstruction efforts in Pakistan following the 2005 earthquake, where there was minimal participation of the general public in the decision-making process, leading to general dissatisfaction (Husain, 2008). Successful reconstruction projects during Aceh, Indonesia's post-disaster reconstruction, adopted various strategies to involve affected people in the selection of eligible households, cadastral mapping, and verification, spatial planning, design of housing, construction, and monitoring of implementation, which helped speed up the post-disaster reconstruction (Silva, 2010). Comparatively, in the Philippines following Typhoon Haiyan in 2013 and the Gorkha earthquake in 2015, the lack of an elected local government in Nepal limited the participation of residents in decision-making, whereas it somewhat contributed to the reconstruction efforts in the Philippines by the local government representatives (Dhungana and Curato, 2021).

#### **4.1.2 Transparency**

Transparency is an opportunity to observe and comprehend the process and outcome of the reconstruction process. The research results show that understanding community culture adds value to enhancing transparency and accountability, which may offer a novel approach to promoting accountability (Liswanty and Prabowo, 2021). Studies reveal that the housing reconstruction plans and processes were not clear, particularly for vulnerable communities. The Government of Nepal opted for a uniform assistance package, which is inadequate for house reconstruction among low-income and marginalized families. There was a provision for a public hearing in the reconstruction guidelines, which is meant to be conducted every six months; however, such events are seldom carried out at the community level. Community meetings and interactions were popular events to communicate and disseminate information among the earthquake-affected people.

#### **4.1.3 Feedback and Response**

The grievances were collected and handled by the NRA, but obtaining responses from vulnerable communities at the local level proved to be challenging. The collection of grievances was solely focused on private housing reconstruction and did not adequately address other social aspects, thereby excluding the voices and concerns of traditional and local people. The government of Nepal/NRA developed guidelines and tools for grievance management related to reconstruction and rehabilitation, but these were limited to house reconstruction, centralized, and time-consuming (Joshi, 2019).

Following the 2015 Gorkha earthquake, the Inter-Agency Common Feedback Project directly collaborated with primary responders and affected individuals to exchange knowledge on how to respond to individual comments from affected men, women, and children (IASC, 2016). Due to the socio-political environment, the NRA encountered significant challenges in managing grievances effectively (Shrestha *et al.*, 2021). In comparison to the Pakistan earthquake reconstruction, the NRA developed grievance management guidelines and implemented them, while in Pakistan's reconstruction, there was no systematic feedback mechanism, and the public had to periodically protest to have their grievances heard (Husain, 2008).



#### 4.1.4 Institutional Arrangement and Coordination

Learning from the Pakistan earthquake, the establishment of the NRA as the lead reconstruction agency in Nepal was carefully considered. Scholars have highlighted that both Nepal and Pakistan adopted an owner-driven housing reconstruction approach, recognizing the necessity of autonomous institutions to lead the reconstruction process following major disasters (Akbar, 2022). Institutional arrangements were made to form the NRA, tasked with leading and coordinating the post-earthquake reconstruction in Nepal. Coordination mechanisms played a significant role at the central level; however, they were observed to be weak at the local level. The local elected government was vacant at the time of the NRA's formation on December 25, 2015. To provide strategic support during the recovery and reconstruction activities, the NRA developed the Post-Disaster Recovery Framework (2016-2020). The local government was established after the first local election held in May and June 2017. While the NRA provided technical support through the elected local government, it was not sufficient to complete the extensive reconstruction process.

The study revealed that the accountability mechanism was considered a prerequisite by multiple stakeholders; however, not everyone internalized it, and certain non-governmental organizations took the lead in accountability initiatives during reconstruction (Dhungana and Curnish, 2019). Due to the lack of clarity in reconstruction plans, the unclear role of the local government, and insufficient interagency coordination, governance faced significant challenges in implementing post-disaster initiatives, including aid mobilization, capacity development of actors, and ensuring governance integrity (Acharya, 2019). Experience has shown that collaboration with non-state partners helped to increase awareness and resource mobilization during post-earthquake reconstruction in Nepal (Russell *et al.*, 2021).

#### 4.2 Improving Implementation Strategies

Policies and implementation mechanisms need to be formulated with a comprehensive understanding of pre-existing forms of socioeconomic marginalization to effectively address barriers (Rawal *et al.*, 2021). Participation emerges as a pivotal factor in ensuring accountability, as it sheds light on the gaps of inclusion and fosters gradual changes in traditional mind sets (Thapa and Pathranarakul, 2019). Adopting a participatory approach led by affected communities emerges as the most effective strategy for reconstruction and sustainable development (Regmi, 2016). The success of owner-driven reconstruction hinges on active participation of local communities and affected individuals in the decision-making process, necessitating mechanisms to include vulnerable populations in key positions during the housing reconstruction process.

The transparency mechanism during the reconstruction process, particularly for the most vulnerable, lacked clarity. Studies revealed the institutional requirement for public hearings, but their regularity was inconsistent. Developing alternative mechanisms, such as interface meetings with stakeholders and communities, to facilitate information sharing is crucial. Understanding of "owner-driven rebuilding" must be strengthened based on the experiences from post-disaster house reconstruction in Nepal (Rawal *et al.*, 2021). The grievance handling

and management system should be user-friendly and transferred to the local government to enable timely access for the local community to voice their concerns.

To ensure the long-term resilience of infrastructure repair and construction, the support of the private sector and international actors becomes crucial (Wendelbo *et al.*, 2016). Policy directives, strategies to address reconstruction challenges, and tools to raise awareness are deemed essential according to the findings of the study (Bothara *et al.*, 2018). Local government should take the lead in implementing housing reconstruction programs and be supported with technical and managerial training. Moreover, flexibility in house reconstruction programs is imperative, particularly in resource-poor countries like Nepal (Lam and Kuipers, 2019).

## 5. CONCLUSION

The review findings reveal that the reconstruction modality adopted in the aftermath of the 2015 Gorkha earthquake in Nepal was characterized by an owner-driven and participatory approach. The disbursement of housing grants through individual bank accounts demonstrated a commendable effort in promoting transparency and inclusivity while minimizing the potential for misallocation of reconstruction funds. The implementation of a grievance-handling mechanism provided a platform for addressing concerns and ensuring accountability. Notwithstanding these positive aspects, the review also shed light on several critical gaps in the reconstruction process. One notable concern was the exclusion of the most marginalized and vulnerable segments of the population from the decision-making process, which calls for measures to enhance inclusivity and representation. The presence of a centralized authority hindered effective decision-making, particularly at the local government level, emphasizing the need to empower and provide adequate technical and administrative support to local entities. To foster a comprehensive understanding of accountability practices in post-reconstruction efforts, further empirical research is warranted. Such studies would aid in assessing the actual implementation and effectiveness of accountability mechanisms following the 2015 Gorkha earthquake. Overall, these findings underscore the significance of continuously improving and refining accountability practices to ensure a more equitable, transparent, and effective reconstruction process in the wake of disasters. By addressing the identified gaps and challenges, future reconstruction endeavors can strive towards fostering sustainable and inclusive recovery for all affected communities.

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## CONFLICT OF INTEREST

This paper is original, not published and submitted elsewhere. The study is the outcome of the PhD dissertation work of the key author with no competing financial and personal interest that influenced the reported work.

## REFERENCES

- Acharya, K. (2019). Governance in Critical StandPoint to Implement Post-Disaster Initiatives in Nepal. *Participation*, 19. <https://ssrn.com/abstract=3451853>
- Ahrens, J., Rudolph, P. (2006). The Importance of Governance in Risk Reduction and Disaster Management. *Journal of Contengencies and Crisis Management*, 14(4), 207-220. <https://doi.org/10.1111/j.1468-5973.2006.00497.x>
- Akbar, K. (2022, April 28). Post-disaster Reconstruction: Lessons from Nepal and Pakistan. *End Poverty in South Asia*. <https://blogs.worldbank.org/endpovertyinsouthasia/post-disaster-reconstruction-lessons-nepal-and-pakistan>
- Bothara, J., Ingham, J., Dizhur, D. (2018). Earthquake Risk Reduction Efforts in Nepal. *Integrating Disaster Science and Management* 177-203. <https://doi.org/10.1016/B978-0-12-812056-9.00011-7>
- Chamlagain, D., Bhattarai, G. K., Rajaure, S. (2011). Seismic Hazard Assessment of Eastern Nepal Using 1934 and 1988 Earthquakes. *Journal of Nepal Geological Society*, 42, 85-93. <https://doi.org/10.3126/jngs.v42i0.31453>
- Cook, A., Shrestha, M., Htet, Z. (2018). An Assessment of International Emergency Disaster Response to the 2015 Nepal Earthquakes. *International Journal of Disaster Risk Reduction*. <https://doi.org/https://doi.org/10.1016/j.ijdr.2018.05.014>
- Daly, P., Duyne, J., Hollenbach, P., & Ninglekhu, S. (2017). *Post-Disaster Housing Reconstruction in Urban Areas in Nepal: Aid Governance and Local Rebuilding Initiatives*. <https://www.iied.org/sites/default/files/pdfs/migrate/10836IIED.pdf>
- Daly, P., Ninglekhu, S., Hollenbach, P., Barenstein, D., Nguyen, D. (2017). Situating Local Stakeholders Within National Disaster Governance Structures: Rebuilding Urban Neighbourhoods Following 2015 Nepal Earthquake. *Environment & Urbanization* 29(2), 403–424. <https://doi.org/10.1177/0956247817721403>
- Dhungana, N. (2020). Doing Civil Society-Driven Social Accountability in a Disaster Context: Evidence from Post-Earthquake Nepal. *Politics and Governance*. <https://doi.org/10.17645/pag.v8i4.3154>
- Dhungana, N., Cornish, F. (2019). Beyond Performance and Protocols: Early Responders' Experiences of Multiple Accountability Demands in the Emergency Response to the 2015 Nepal Earthquake. *Disasters*. <https://doi.org/10.1111/DISA.12425>

- Dhungana, N., Curato, N. (2021). When Participation Entrenches Authoritarian Practice: Ethnographic Investigations of Post-Disaster Governance. *International Journal of Disaster Risk Reduction*. <https://doi.org/https://doi.org/10.1016/j.ijdr.2021.102159>
- Dixit, A. (2014). Earthquake Disaster Risk Management Efforts in Nepal. *International Symposium Geohazards: Science, Engineering and Management*, Kathmandu, Nepal.
- Duri, J. (2021). *Corruption in Times of Crisis*. <https://www.jstor.org/stable/resrep30837>
- Forest, R. (2018). *Climate Risk Insurance: Transparency, Participation and Accountability: An Overview Assessment of Regional Risk Pools*.
- Gaventa, J., McGee, R. (2013). *The Impact of Transparency and Accountability Initiatives* <https://doi.org/10.1111/dpr.12017>
- GoN. (2015). *Constitution of Nepal*. Kathmandu: Nepal Law Commission Retrieved from <http://www.lawcommission.gov.np/en/archives/category/documents/prevailing-law/constitution/constitution-of-nepal>.
- Harris, J., Booth, A., Cargo, M., Hannes, K., Harden, A., Flemming, K., Noyes, J. (2018). Cochrane Qualitative and Implementation Methods Group Guidance Series – Paper 2: Methods for Question Formulation, Searching, and Protocol Development for Qualitative Evidence Synthesis. *Journal of Clinical Epidemiology* 97, 39-48. <https://doi.org/10.1016/j.jclinepi.2017.10.023>
- Hemachandrea, K., Amaratunga D., Hai, R. (2018). Role of Women in Disaster Risk Governance. *Procedia Engineering*.
- Higgins, J., Thomas, J., Candler, J., Cumpston, M., Page, M., Welch, V. (2011). *Cochrane Handbook for Systematic Reviews of Interventions*. John Wiley & Sons. <https://training.cochrane.org/handbook>
- Husain, S. (2008). *Post-Earthquake Reconstruction Scenario in the Rural Northern Areas (N.W.F.P.) of Pakistan*. The 14th World Conference on Earthquake Engineering October 12-17, 2008, Beijing, China. [https://www.iitk.ac.in/nicee/wcee/article/14\\_01-0005.PDF](https://www.iitk.ac.in/nicee/wcee/article/14_01-0005.PDF)
- IASC. (2015). *IASC Reference Module for the Implementation of the Humanitarian Program Cycle, Version 2*. <https://reliefweb.int/report/world/iasc-reference-module-implementation-humanitarian-programme-cycle-version-20-july-2015>
- IASC. (2016). *Accountability to Affected Populations: Mapping of Current Initiatives, Interagency Projects, and Key Reports*. <https://reliefweb.int/report/world/mapping-current-initiatives-interagency-projects-and-key-reports-related-accountability>
- IDS. (2011). *Exploring Climate Change and Disaster Governance Issues (Climate and Disaster Governance)*. [https://www.ids.ac.uk/download.php?file=files/dmfile/CDGreport\\_web.pdf](https://www.ids.ac.uk/download.php?file=files/dmfile/CDGreport_web.pdf)

- Joshi, H. (2019). Handling of the Grievances in the National Reconstruction Authority (NRA) after the 2015 Earthquake in Nepal. *Journal of the Institute of Engineering*, Pulchowk, Nepal. <https://doi.org/10.3126/jie.v15i2.27670>
- Khanal, B. (2020). *Nepal: A Brief Country Profile on Disaster Risk Reduction and Management*. [https://www.adrc.asia/countryreport/NPL/2019/Nepal\\_CR2019B.pdf](https://www.adrc.asia/countryreport/NPL/2019/Nepal_CR2019B.pdf)
- Lam, L., Kuipers, R. (2019). Resilience and Disaster Governance: Some Insights from the 2015 Nepal Earthquake. *International Journal of Disaster Risk Reduction*, 33, 321-331. <https://doi.org/10.1016/j.ijdr.2018.10.017>
- Laursen, M. (2015). CBDRM in Nepal: A Matter of Risk Perceptions. *International Journal of Disaster Resilience in the Built Environment*. <https://doi.org/10.1108/IJDRBE-07-2014-0052>
- Lee, A., Cartwright, C., Marahatta, S., Karki, J., Simkhada, P. (2016). The 2015 Nepal Earthquake Disaster: Lessons Learned One Year on. *Public Health*. <https://doi.org/http://dx.doi.org/10.1016/j.puhe.2016.12.031>
- Liswanty, I., Prabowo, H. (2021). Transparency and Accountability Mechanisms for Disaster Management Funds: A Case Study. *Journal of Contemporary Accounting*, 3(1), 12-24. <https://doi.org/10.20885/jca.vol3.iss1.art2>
- Melis, S. (2020). Post-Conflict Disaster Governance in Nepal: One-Door Policy, Multiple Window Practice. *Disasters*, 46, 226-245. <https://doi.org/10.1111/disa.12455>
- Michaels, L., Baniya, J., Ahmed, N. (2019). in Nepal. *Nepal Earthquake Reconstruction Research- Scoping Study* [https://www.academia.edu/39813016/Nepal\\_Earthquake\\_Reconstruction\\_Research\\_Scoping\\_Study?email\\_work\\_card=title](https://www.academia.edu/39813016/Nepal_Earthquake_Reconstruction_Research_Scoping_Study?email_work_card=title)
- NPC. (2015). *Nepal Earthquake 2015: Post Disaster Needs Assessment*.
- NRA. (2016). *Post Disaster Recovery Framework, 2016-2020 National Reconstruction Authority*. [https://www.np.undp.org/content/nepal/en/home/library/crisis\\_prevention\\_and\\_recovery/post-disaster-recovery-framework-pdf2016-2020.html](https://www.np.undp.org/content/nepal/en/home/library/crisis_prevention_and_recovery/post-disaster-recovery-framework-pdf2016-2020.html)
- NSET. (1998). *The Kathmandu Valley Earthquake Risk Management Action Plan*. <https://preparecenter.org/resource/the-kathmandu-valley-earthquake-risk-management-action-plan/>
- Okoli, C. (2015). *A Guide to Conducting a Standalone Systematic Literature Review*. <https://doi.org/10.17705/1CAIS.03743>
- Page, M., McKenzie, J., Bossuyt, P... (2021). PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews. *BMJ*, 372(n71). <https://doi.org/10.1136/bmj.n71>

- Pandey, M., Mohar, P. (1988). The Distribution of Intensity of the Bihar-Nepal Earthquake of 15 January 1934 and Bounds of the Extent of the Rupture Zone. *Journal of Nepal Geological Society*, 5(1), 22-44. <https://ngs.org.np/the-distribution-of-intensity-of-the-bihar-nepal-earthquake-of-15-january-1934-and-bounds-on-the-extent-of-the-rupture-zone/>
- Platt, S., Gautam, D. and Rupakhety, R. (2020). Speed and Quality of Recovery After the Gorkha Earthquake 2015 Nepal. *International Journal of Disaster Risk Reduction*. <https://doi.org/https://doi.org/10.1016/j.ijdr.2020.101689>
- Rahman, M., Atun, F., Martinez, J. (2021). Earthquake and Fire Hazard Risk Perception: A Study on the Emerging Rangpur City of Bangladesh. *Journal of Integrated Disaster Risk Management*, 11(1), 01-25. <https://doi.org/10.5595/001c.28382>
- Rawal, V., Bothara, J., Pradhan, P., Narasimhan, R., Singha, V. (2021). Inclusion of the Poor and Vulnerable: Learning from Post-Earthquake Housing Reconstruction in Nepal. *Progress in Disaster Science*. <https://doi.org/http://dx.doi.org/10.1016/j.pdisas.2021.100162>
- Regmi, K. (2016). The Political Economy of 2015 Nepal Earthquake: Some Critical Reflections. *Asian Geographer*. <https://doi.org/10.1080/10225706.2016.1235053>
- Russell, C., Clark, J, Hannah, D & Sugden, F. (2021). Towards a Collaborative Governance Regime for Disaster Risk Reduction: Exploring Scalar Narratives of Institutional Change in Nepal. *Applied Geography*. <https://doi.org/https://doi.org/10.1016/j.apgeog.2021.102516>
- Shrestha, C., Parajuli, B., Malani, S. (2021). Unravelling Constraints of Urban Housing Reconstruction. *Progress in Disaster Science*. <https://doi.org/http://dx.doi.org/10.1016/j.pdisas.2021.100178>
- Shrestha, K., Bhattarai, B., Ojha, H., Bajracharya, A. (2018). Disaster Justice in Nepal's Earthquake Recovery. *International Journal of Disaster Risk Reduction*. <https://doi.org/https://doi.org/10.1016/j.ijdr.2018.10.006>
- Siddaway, A., Wood, A., & Hedges, L. (2019). How to Do a Systematic Review: A Best Practice Guide for Conducting and Reporting Narrative Reviews, Meta-Analyses, and Meta-Syntheses. *National Library of Medicine*, 70, 747-770. <https://doi.org/10.1146/annurev-psych-010418-102803>
- Silva, J. (2010). *Lessons from Aceh: Key Considerations in Post-Disaster Reconstruction*. Practical Action Publishing Ltd. <https://www.researchgate.net/publication/279527467>
- Thapa, V., & Pathranarakul, P. (2019). Gender Inclusiveness in Disaster Risk Governance for Sustainable Recovery of 2015 Gorkha Earthquake, Nepal. *International Journal of Disaster Risk Reduction*, 34, 209-219. <https://doi.org/10.1016/j.ijdr.2018.11.019>

- Thomas, J., Harden, A. (2008). Methods for the Thematic Synthesis of Qualitative Research in Systematic Reviews. *BMC Medical Research Methodology*, 8(45). <https://doi.org/10.1186/1471-2288-8-45>
- UNISDR. (2015). *Sendai Framework for Disaster Risk Reduction 2015 - 2030*.
- Vij, S., Russel, C., Clark, J., Parajuli, B., Shakya, P., Dewult, A. (2020). Evolving Disaster Governance Paradigms in Nepal. *International Journal of Disaster Risk Reduction*, 50. <https://doi.org/10.1016/j.ijdr.2020.101911>
- Wendelbo, M., La China, F., Dekeyser, H., Taccetti, L., Mori, S., Aggarwal, V., Alam, O., Savoldi, A., Zielonka, R. (2016). *The Crisis Response to the Nepal Earthquake: Lessons Learned*.
- Young-Jun, L., Hanada, S. (2020). An Examination of the Self-Evaluations Over Time of 3.11 Tsunami Survivors Regarding Their Post-Disaster Recovery. *Journal of Integrated Disaster Risk Management*, 10(1), 23-42. <https://doi.org/10.5595/001c.16747>