

Navigating Governance for Disaster Risk Reduction (DRR) Education: Insights from Disaster-Prone Schools in Nepal

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Abstract

This article draws from detailed qualitative case studies of three schools located in disaster prone context in Nepal. It explores the importance of governance in DRR education interventions in low-income country like Nepal. Using Robertson *et al.*'s [1] pluri-scalar education governance framework, this study establishes relationships between disaster governance, education governance and curriculum governance in mainstreaming disaster risk reduction (DRR) education in school curriculum. It analyses local, regional, national, and global governances to address disaster management and DRR issues in a sustainable manner. This study presents the current structures that support or hinder the disaster governance practices to mainstream DRR in education. It further indicates that the provision of disaster governance in the education sector is a newly introduced area. It finds that in the context of centralised curriculum development practices, less importance has given to the local disaster context in school curriculum. Similarly, it notices that teacher centered curriculum activities in DRR education generate limited learning experiences to students. Due to the lack of efficient DRR governance mechanisms the DRR interventions in education carried out at various levels by the state or the non-state actors are found not focused enough to address disaster vulnerability. This article concludes with what the study data explains about the need for and importance of disaster and education governance in order to ensure DRR practices are widespread in education.

Keywords

Disaster Governance, Education Governance, Curriculum Governance, Disaster Vulnerability

1. Introduction

School governance plays a significant role to develop and implement proper disaster content. Tatebe and Mutch [2] emphasis the role of school in developing resilient capacities through delivering relevant information and enhancing essential skills to individuals in communities. However, Disaster Risk Reduction (DRR) governance occurs at global, national and local context that contribute effectively to address disaster risk reduction (DRR) and disaster management. DRR issues of education sector are also issues of curriculum governance in the low-income countries like Nepal. The purpose of this study to explore the curriculum governance factors which contribute to deliver the quality DRR education in school in disasters prone context. This article begins by outlining the introduction, research context, needs and importance of disaster governance and education governance to carry out relevant and contextualized DRR education interventions. Primary and secondary information were collected from schools and other like-minded organizations. Robertson *et al.*'s [1] pluri-scalar education governance framework enabled the researcher to observe, experience and theorize nature, issues, and challenges of education governance in DRR education. It also allowed to describe the existing gaps and challenges of disaster governance in education that have an impact on the effective delivery of DRR curriculum. Data analysis highlights the structure, and issues of sustainability of DRR governance in education sector. It argues that effective curriculum governance is essential in the school in development and conducting DRR interventions in a sustainable manner.

2. Context

Nepal is a landlocked, mountainous country located between India and China, with an area of 147,181 square kilometres and a population of over 29,192,480 [3]. Nepal has a diverse topographical landscape, ranging from lowland areas 60 metres above sea level to places more than 8800 metres above sea level. The mountain region consists of river valleys, tectonic basins, glaciers, and rocky slopes. Nepal is a disaster-prone country because of its geography. The country is highly vulnerable to droughts, floods, earthquakes, landslides, forest fires, storms and hailstorms, avalanches, glacial lake outbursts, floods and the effect of global warming [4] [5].

Historical, social and political changes influence the education provisions of any country. The education system in Nepal was also highly affected by the social changes and political movements. The Vedic and Buddhist education practices were highly influential until the middle of the 19th century. Education and development initiatives during the Rana period (1846-1950) were limited. Due to the centralisation of power and authority during the Rana and Panchayat systems, education was not easily accessible to all [6]. In Nepal, various historical movements, especially the anti-Rana movement in 1950, the democratic period between 1951 and 1961, the establishment of the Panchayat system in 1962, and the fall of the Panchayat system in 1990 significantly influenced the education system of the

country [7]. The country has made widespread changes in the education system according to the different political positions [8] [9]. The restoration of democracy in 1990 has played an important role in people's participation and empowerment. Politically, since 1990, the federal movement in the country in 2006 initiated education and development reform in a more systemic way. As the country experienced a decade-long civil war and political instability, the current federal political system and structures put more emphasis on education in addressing local needs and expectations. However, due to poor education governance, the quality of education is really a big concern [10].

The role of government is crucial in education governance. The Government of Nepal placed emphasis on committed global agendas of education and received support from donor partners. Nepal has signed, and ratified, various human rights and education-related international conventions [11]. Relevant education initiatives were carried out under Education for All, Millennium Development Goals and Sustainable Development Goals. These global education movements influence national plans and policies. The World Bank and other bilateral and multi-lateral organisations entered the country to address the education and development agendas. After 1990, several education project interventions were carried out using external funding. The most recent School Sector Development Plan (2016-2023) is a jointly-funded education plan focused on quality. In 2010, the Government of Nepal implemented the National Framework of Child-Friendly Schools to ensure access to quality education for every child [12]. According to the framework, a child-friendly school is a learner and teacher-friendly school where a safe learning environment for every child in the school is ensured. Including child safety, this framework also demands the use of child-friendly pedagogies and learning resources. It also encourages wider community participation in school development and school safety. The country has made significant progress in the establishment of an adequate number of schools, however the quality of education is still poor. Under the federal system, the provincial and local governments are responsible for managing quality basic education. With the help of NGOs, some of the local government institutions have already initiated development of education plans and policies at a local level. However, due to a lack of resources and poor governance mechanisms, the effective implementation of these policies is still in question.

After the restoration of democracy in 1990, federal reform in 2006 and post-federal institutional development provided a favourable environment in which to reform education governance in the country [13]. The historical legacy of political development helped to shape education governance in various periods in the country [6] [14].

Decentralisation was adopted under the third five-year (1965-1970) plan in Nepal [6]. Local people's participation in the planning and decision-making process under local government bodies has been practised since then. After the restoration of a multi-party democracy in 1990, the Local Self Governance Act (1999) and the

Local Self Governance Regulation (1999) gave authority to local bodies to establish local governance. The new constitution of Nepal (2015) defines the Federal State of Nepal as an “independent, indivisible, sovereign, secular, inclusive, democratic, socialism-oriented federal democratic republican state” [15]. It emphasises the importance of governance and management of the educational system and the delivery mechanisms to meet the provision of free and compulsory basic education and free secondary education for all individuals.

The Local Government Implementation Act (2017) focuses more on guaranteeing free and quality basic education to all. It describes the roles of federal, provincial and local government in achieving the aim of education. According to this act, the federal government is responsible for developing relevant policies, standards and ensuring resources for education. The provincial government needs to oversee grade ten exams, the technical and vocational education in the province, coordination among like-minded organisations, and to carry out the bridging role between local and federal governments. The provincial governments are also responsible for developing additional standards and providing additional incentives to the marginalised communities to raise access to education. The local government agencies are responsible for managing school education, approving the new schools, regulating all the educational institutions of their location, developing plans and policies, resource management, monitoring and supervision.

Parajuli [16] mentions that decentralisation in schools in Nepal helps to bring parents, the community and schools closer. The School Management Committee, Parent Teachers Association, Village Development Committee and Municipality, District Education Office, Village/or Municipality Education Committee, District Education Committee, and District Coordination Committee are the stakeholders of school governance at a local level in Nepal.

The education, DRR and development reform in Nepal has been influenced by historical, political and global forces. Global forces are concerned with the Western neo-liberal reform and influences of major donor agencies such as the World Bank and USAID, while providing aid for development of the country. The Disaster Risk Reduction and Management Act (2017) mentions establishing disaster management and rescue committees at each ward of the local village and municipality by involving the representatives from ward citizenship forums, civil society and schools.

The Ministry of Education recently introduced the School Sector Development Programme (2016-2021) which highlights the importance of safe schools [17]. It accepts the Comprehensive School Safety plan and aims to mainstream disaster risk reduction in the education sector by strengthening school-level disaster management and resilience amongst schools, students and communities. A school self-evaluation check list is developed that helps to carry out the participatory School Improvement Plan development. The Department of Education [18] mentions thirty-four indicators for holistic school development. Among these are five indicators (which are mentioned from thirty to thirty-four) under the DRR group.

These are: the formation of a disaster management group or committee, self-evaluation, the development of a safety plan, preparation for the response, and the establishment of communication coordination exchange among community, family and public agencies.

The World Bank [19] suggests that participatory school culture, planning and management, teacher and staff management, resource management and monitoring are the main areas of good school governance in the context of Nepal. School governance is responsible for incorporating effective DRR education in the school improvement plan. School Improvement Plans should have goals or objectives of DRR, provision of appropriate resources and methods to carry out the planned DRR actions. School governance also sets up initiatives for integrating DRR into the school curriculum and daily school activities.

Realising the importance of the role of education in DRR, the National Disaster Management Plan 2010-2014 further suggests the need for the implementation of disaster preparedness, such as the development of school safety plans and the implementation of DRR education in schools. This is reinforced by the Hyogo Framework for Action (2005-2015) which strongly advocates for the provision of disaster education in establishing a culture of disaster prevention. After adopting the Hyogo Framework of Action, DRR was mainstreamed into the Nepalese government's National Development Plan in 2007. Similarly, some INGOs such as Plan Nepal, UNICEF, Save the Children, Nepal Society of Earthquake Technology, and the Red Cross implemented activities which aimed to strengthen schools' preparedness for, awareness of, and ability to respond to disasters through training for teachers and students, the production of new resources, and support for safer school construction. The coverage of such interventions, however, was very limited and only a few hundred schools benefited from this initiative. There remains a lack of a comprehensive approach for school DRR intervention [20], as well as a lack of proper governance mechanism with appropriate coordination and collaboration action among relevant stakeholders [21]. The multi-hazard-prone context of the country creates various challenges, which are not manageable with the resources that the country has.

3. Literature Review

Governance is more than the structures of the government. In a broader sense, governance includes the public sectors, the private sector and the civil society which need to work hand-in-hand to make a combined effort for a positive change through knowledge exchange. It requires structure and the process to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and active participation [22] [23]. Governance is concerned with how the rules and policies are implemented in order to provide services to the people [24] [25]. The United Nations Development Programme (UNDP), in its 1997 policy paper, defined governance as "the exercise of economic, political, and administrative authority to manage a country's affairs at all

levels. It comprises the mechanisms, processes and institutions, through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences.” The World Bank [26] also states that “rules of the rulers” is governance. It relates to the process of development of rules and its implementation. Based on these different viewpoints of governance, it can be said that governance is a wider concept which covers state and non-state actors and civil society for the effective implementation of policies and procedures to establish an equitable and just society.

Giddens [27] states that neo-liberalism refers to economic liberalisation, free trade, open market, privatisation, deregulation and enhancing the role of the private sector in modern societies. During 1980 in the UK and USA, significant portions of the budget were cut and allocated for the structural reform. Similar initiations were carried out in the developing countries due to the pressure of the funding institutions such as the World Bank. Countries were encouraged to transfer the ownership of public services from national to sub-national governmental entities, and from public to private sectors. Neo-liberalism encouraged various areas, including the education sector, to reform. Ball [28] suggests that new governance initiatives in education increased educational opportunities and introduced market-based policy of schooling, promoting ideas of parents as customers and students as products. Moreover, globalisation processes have made quantitative and qualitative impacts in every nation [29] [30]. Globalisation pushes economic growth, but also contributes to raising poverty, marginalisation and inequality and therefore spreading risk and uncertainty [31].

Disasters and governance are interlinked and therefore the concept of disaster governance is introduced in disaster studies [32]. Disasters are the result of a combination of hazards, conditions of vulnerability and insufficient capacity [33]. Disaster governance is the application of governance principles in disaster management and the DRR area. Disaster governance goes beyond the governmental settings, powers, processes and tools by encouraging collective actions through the engagement of all stakeholders from a local to global level [34]. Governance is considered as the key area used in order to plan, implement and monitor DRR interventions [35]-[38]. These studies suggest that disaster-specific governance frameworks are essential for carrying out any DRR interventions effectively. Tierney [32] suggests that disaster governance is nested within, and influenced by, an overarching societal governance system. Furthermore, the International Federation of Red Cross and Red Crescent Societies state the need for formal legislation, regulation and governmental planning to address humanitarian aspects in emergencies and disaster management. Similarly, UNDP [39] states that governance is the umbrella under which disaster risk reduction takes place.

Disaster governance incorporates wider areas of disaster risk reduction and management. It includes the public authorities, civil servants, media, civil society and private sectors to make them responsible and accountable in order to manage and reduce disaster and climate-related risks at community, national, and regional

levels [40]. Thus, disaster governance is associated with the provision of relevant policies, structures and effective implementation of DRR instruments with proper supervision and monitoring. It requires proper roles from state actors, non-state actors and civil society. UNISDR [41] mentions that good governance needs to be transparent, inclusive, collective and efficient to reduce existing disaster risks and to avoid creating new ones. Since the last decade, one of the agreed views of international discussions is a need for decentralised disaster risk reduction interventions. Decentralised governance helps to improve efficiency, respond to the local needs, increase accessibility to service delivery, improve downward accountability, and raise political engagement and community participation [42].

The UNISDR [43] describes governance as one of the major priority areas of DRR and suggests ensuring that DRR is a national and a local priority with a strong institutional basis for implementation. It points out that it is also essential that disaster governance uses knowledge, innovation and education to build a culture of safety and resilience at all levels effectively. Disaster governance is also linked with environmental sustainability and it deals with the social, economic and cultural aspects of the local context which are crucial in addressing the issues of the four phases of the disaster cycle.

Disaster governance plays significant roles prior to, during and following a disaster situation. It is crucial to establish a disaster governance plan to reduce the negative consequences of disasters. Furthermore, disaster governance is necessary for carrying out disaster preparedness, mitigation, response and recovery actions more effectively and efficiently. The Sendai Framework for DRR (2015–2030) emphasises a broad, people-centred disaster management approach that involves all the like-minded actors. In priority 2, it calls for the need of collaboration among government, non-government, private sectors, civil society, academia and research institutions to build disaster-resilient communities. The Sendai Framework has given top priority to establishing a good governance system for addressing DRR issues. It also recognises that weak risk governance adversely contributes to disaster management and increases the disaster vulnerability.

Weak governance and lack of political commitment and will are two major areas that contribute to the failure and ineffectiveness of DRR initiatives [44]. Weak and unstable governments lack good governance hence they are less effective in managing disaster crises properly [32]. Poor governance practices in the developing world are identified as one of the major challenges to sustainable development, for example the World Bank [45] identifies that most crises in developing countries are caused by governance faults. Similarly, Melo Zurita *et al.* [46] state that major natural disasters disturb daily governance activities at the location which may create other associated problems and challenges that affect community life. As an example, this study states that in the chaotic nature of disasters, in the absence of good governance there is the possibility of conflict among the diverse groups while responding to the disasters. To minimise such negative consequences, the World Bank [26] introduced and addressed a “good governance”

concept for a new way of looking at governance. It is associated with transparency, accountability and judicial reforms. The United Nations Economic and Social Commission for Asia and the Pacific [47] states participation, consensus orientation, accountability, transparency, responsiveness, effectiveness and efficiency, equitability and inclusiveness, and rule of law are the major characteristics of good governance. All these attributes contribute to valuing the voices of the voiceless in the decision-making process, minimising corruption, and addressing the actual needs of the society in a sustainable manner. For effective disaster management, the provision of good governance is essential in order to regulate the existing rules and mobilise all the structures and actors properly [46]. Thus, considering the vital roles disaster governance plays in DRR, for the purpose of this study, disaster governance refers to the provision of DRM related strategies, plans, policies, and structures including the overall mechanism of disaster and crisis management. It is a wider area that deals with the roles, responsibilities, and accountability of state and non-state actors in disaster management. More specifically, disaster governance is a fundamental component in the process of implementing DRR in mainstream education and sustaining DRR interventions in the education sector to build a disaster-resilient community.

3.1. Disaster Governance in the Education Sector

Governance in educational institutions reflects their ability to develop and enforce essential rules for quality education in an accountable, transparent, responsible, and democratic manner. The World Bank [24] states, “good governance is a set of responsibilities, practices, policies and procedures exercised by an institution to provide strategic direction to ensure objectives are achieved and governance practices support schools by helping them manage their resources so that they can deliver quality education.” According to this definition, a school’s governance encompasses a wider collaborative function in order to raise the quality of education. It aims at holistic school development. Robertson *et al.* [1] present a pluri-scalar governance of education model. They argue that governance consists of multiple dimensions, actors and scales. This model covers three dimensions: three scales of governance—the supranational, national and subnational; four institutions of governance—the state, market, community, and household; and four governance activities consisting of funding, ownership, provision and regulation

Disaster risks can be substantially reduced if people are well informed and motivated to adopt a culture of disaster prevention and resilience, which in turn requires the collection, compilation and dissemination of relevant knowledge and information on hazards, vulnerabilities and capacities [48]. Responding to the “DRR begins from school” UNISDR 2006-7 campaign and other various calls of the international and regional conferences, countries have developed their national agendas to mainstream DRR in education and ensure a safe learning environment for every child [49].

Good governance in education must address school safety and DRR education

provision in school and the community. Realising the importance of disaster governance, UNISDR [50] explains that disaster governance and education are inter-linked. A third of HFA priorities deal with the use of knowledge, innovation and education to build a culture of safety at both local and policy levels. Since children, youth and education systems are badly affected by disasters each year, good disaster governance is essential to addressing the consequences and needs. Due to the impacts of disasters, many children are unable to get access to and realise their rights to quality education [50] [51].

Lack of disaster risk reduction policies and the low priority given to disaster management through various levels of government and to the community level contributes to the increase of education inequalities [52]. If education is supported well before, during and after a disaster event, it helps to save the lives of people in the community and protect children [50]. Shaw [49] suggests these areas are crucial for disaster management: the location, structural and functional issues related to school facilities, the management of teachers and principals in addressing the pre-, during and post-disaster context, the relationship between schools and communities working together to address disaster issues and the engagement of school leaderships in crisis situation the part of the educational governance. Disaster governance in education ensures that the national education systems are less vulnerable, and schools are well prepared to bounce back from crises and return children to learning as soon as possible [52]. The school also needs an effective, dynamic and sustainable DRR strategy and mechanism to carry out DRR interventions in an effective manner. Thus, school governance needs to put more effort into disaster governance areas. Sakurai [53] states the importance of policy guidance and financial support for managing disaster risk governance in education at various levels. School governance needs to develop school level DRR strategies, school safety plans and manage required funding to carry out the identified interventions in a sustainable manner [54]. As education and disaster governance are inter-linked, the educational governance system needs to value DRR interventions through schools to community. Shaw [49] explains the need for an integrated approach to incorporate DRR in the whole education sector. He points out that not only is there a need for incorporation of DRR into curricula and the provision of safe school facilities, there is also the need to address legislative measures, capacity development, the establishment of an early warning system, risk assessment and community involvement.

The Guidebook for Planning Education in Emergencies and Reconstruction published by the UNESCO International Institute for Education Planning—IIEP [54] describes the importance of education governance in planning and managing quality education during and after crises. Johnson *et al.* [55] explains the positive correlation between DRR education interventions and school disaster management. To address the five priority areas, Gwee [56] presents sixteen tasks that need to be delivered at national, local and school levels under school disaster governance. She considered these tasks as E-HFA (Education in Hyogo Framework for

Action). These actions point out that the DRR in education is crucial and needs to be addressed effectively through good disaster governance mechanisms in order to establish the culture of resilience.

3.2. Disaster Governance in Nepal

As shown in the figure (**Figure 1**) below, the National Council for Disaster Risk Reduction and Management under the chairmanship of the Prime Minister is responsible for formulating disasters-related policies and plans. The executive committee under the Home Minister, and the expert team representing various thematic areas, are responsible for implementing the DRR and management plans and policies. The National Disaster Reduction and Management Authority under the chairmanship of the Home Ministry at federal level, and the provision of the Provenience Disaster Management Committee under the chairmanship of the Chief Minister are also considered by the Act. Similarly, the District Disaster Management Committee and Local Disaster Management committees are considered at each district and local level. Their roles and responsibilities are well defined by the Disaster Risk Reduction and Management Act-2017.



Figure 1. Institutional structure for disaster risk reduction and management in Nepal.

The Government of Nepal recently developed the Disaster Risk Reduction Strategy (2017-2030) for the country, which describes priority areas as per the Sendai Framework. The following table (**Table 1**) highlights the prioritised areas by the DRR strategy.

The Government of Nepal realised the value of disaster management and developed good governance structure at three levels. Similarly, in other areas, education recognised the need and importance of disaster governance for effective educational delivery and establishing a safe and secure environment. Attempts have been made for mainstreaming DRR and disaster management in local planning; however, it needs more resources and efforts for establishing an effective risk management governance in the country [57] [58]. In the context of Nepal, disaster governance needs to ensure the active participation of local groups such

as the Dalits, the disabled, women, indigenous communities, children and minority groups such as religious minority [59]-[61]. More specifically, inclusive disaster governance contributes to child protection in disaster and crisis situations and reduces gender discrimination and violence in disasters through developing need-based action plans on behalf of the disaster-vulnerable people [62].

Table 1. Prioritised areas of DRR and disaster management by DRR strategy.

Priority areas	Identified prioritised actions
Understanding disaster risks	<ol style="list-style-type: none"> 1. Hazards risk mapping 2. Inter-agency coordination for multi-hazards risk mapping 3. Development of an effective disaster management information system and a method for information dissemination 4. Capacity development for understanding disaster risk
Strengthening disaster risk governance at federal, provincial and local level	<ol style="list-style-type: none"> 5. Establishment and strengthening of organisational structures 6. Development of legal and regulatory structures 7. Capacity development, co-working and partnerships for disaster risk governance 8. Ensure inclusiveness in DRR
Promotion of private and public investment on the basis of wider disaster risk information to raise resilience and DRR	<ol style="list-style-type: none"> 9. Promotion of investment to raise resilience 10. Increase public investment in DRR 11. Increase private sector investment in DRR 12. Increase disaster resilience through risk ownership, insurance and social security
Strengthening disaster preparedness for effective disaster response and recovery, rehabilitation, and rebuilding to build back better	<ol style="list-style-type: none"> 13. Strengthening disaster preparedness for effective disaster response 14. Development of multi-hazards-based pre-information system for disaster preparedness 15. Promotion of community-based disaster risk reduction 16. Strengthening the communication and dissemination system for disaster preparedness 17. Capacity development for search and rescue 18. Promotion of the building back better concept in response, rehabilitation and rebuilding

4. Methodology

This study is based upon the constructivist research paradigm. This is a qualitative study which aims to explore the education and disaster governance challenges while implementing the DRR education initiations in Nepal. Holiday [63] states that qualitative study explores perspectives, experiences and practices within a specific social setting. Use of the qualitative methods provided opportunities to interact with various stakeholders in exploring their perceptions and experiences in the DRR area.

The study was carried out in the post-disaster context when the schools and communities were struggling with rebuilding and rehabilitation. This study is a multiple-case study as discussed by Yin [64] which explores differences within and between cases. Three public secondary schools representing different disaster-prone contexts of the study district were the cases for study. These cases were

seeking to explore the provision and practices of DRR education initiations at the local level. Local, district and national level stakeholders have put forward their view on DRR education provisions and practices at various levels through interviews and focus groups. The data collected from these specific cases were reviewed and analysed. Field notes, semi-structured interviews and focus groups were used as primary data sources, and document analysis and records were used as secondary data source. Analysis of the DRR contents in school curriculum and text books has been carried out to identify the local disasters and needs of local DRR school curriculum.

Data were collected from local, district and national levels. Representatives from the governmental education policy development agencies and non-governmental agencies were interviewed at a national level. At district level, interviews and focus groups with district level education officials and interviews with representatives from local NGOs were carried out. Similarly, at the school level, interviews with school principals, focus groups with teachers of various levels (primary, intermediate and secondary), and focus groups with School Management Committee representatives, community leaders and Parents Teacher Association representatives were carried out in three study schools. The data collection of this study was carried out one year after the devastating earthquakes in 2015. Most of the communities including schools were affected badly. As children are the group most vulnerable to disaster and considering the importance of their mental health and emotional wellbeing in a post-disaster context [2], this study did not include children participants and therefore was not able to cover their perspectives on DRR education. The provision of existing disaster governance mechanism in education settings and its effectiveness was explored. Gathered data and information were analysed by using the thematic analysis approach.

5. How Does the Current Set-Up Support or Hinder Effective DRR in Schools?

On the basis of existing DRR governance practices, from the data it is revealed that the DRR governance is multi-tiered: global, regional, national and local.

1) Global and regional governance of DRR

Interview data show that DRR is a global issue and there are various actors contributing to disaster risk reduction education areas. Global governance of DRR is crucial in the global perspective of disaster management. The global governance of DRR consists of the international actors, the aid community and other international alliances which are working in the DRR area globally and especially in the DRR education sector.

2) National governance of DRR

Research participants also point out the need for effective national governance of DRR which plays an important role in developing DRR policies and plans and effective implementation. The major actors of national governance are DRR-related state and non-state actors who work together for disaster mitigation, prepar-

edness, response and recovery. The provision of the required legal instruments, including the development and implementation of national DRR policy frameworks and strategies, are the major functions of the national governance of DRR pointed out by the participants. In the context of the country, the data shows that even though decentralisation practices are well accepted, the national governance of DRR is still centralised in decision-making and resource allocation.

3) Local governance of DRR.

The local governance of DRR includes the local structures which are responsible for carrying out appropriate DRR tasks at a local level. The State Disaster Management Committee, District Disaster Management Committee, Village/Municipality Disaster Management Committees, community level disaster management committees, school disaster management committee and School Management Committee are some of the examples of local structures that perform the disaster governance role at a local level. Besides these, the data also shows that there are some other structures and mechanisms formed by NGOs to establish a local disaster governance mechanism, such as an inclusive disaster management committee, in their working location. Most of the research participants agreed that the members of the local governance of DRR institutions are still unfamiliar with their roles and responsibilities.

The data show that local level disaster governance structures lack responsibility and ownership. Therefore, these structures do not have enough capacity to respond to disaster situations. Similarly, on the basis of the recent earthquake experiences, the data shows that the local disaster governance structures were not able to carry out disaster recovery action either.

It is observed that global DRR actors assist the local actors to carry out identified DRR interventions in school and community. However, the sustainability element of these interventions were mostly ignored and the decisions made in the DRR area were more centralised than local. Research participants point out the following areas for effective governance.

5.1. Structure

Formal governance structures are essential for ensuring good governance that can deliver services in a more accountable and responsible manner. The decisions and actions of state or non-state actors may affect the general public and their stakeholders, thus these actors and structures need to be accountable to the people for whom they work [47] [65]. Disaster governance structures in education contribute positively to making educational institutions accountable for disaster risk reduction and climate change issues [53]. However, these structures need systematic assistance and capacity development opportunities to strengthen their efficiency. UNISDR [41] concludes that the capacities of the existing disaster risk governance structures and arrangements are not enough to address DRR issues in an effective manner.

From the interview data it is revealed that disaster governance in education is a

newly introduced area in Nepal. Thus, the concept of disaster governance is still not well accepted at various levels of the educational administration. UNESCO, UNICEF, DFID, the Global Network of Civil Society Organisations for Disaster Risk Reduction (GNDR), European Union and other international multi-lateral, bilateral and INGOs, which are part of the DRR global platform, have been assisting their respective partner organisations, both governmental and non-governmental, to carry out some DRR interventions at various levels [66]. Nepal has ratified DRR international commitments in its legal instruments, policies and plans, therefore the country itself is an active member of the DRR global governance. The establishment of a DRR consortium for learning, sharing and collaborative work, and the provision of a DRR task force in the Association of INGOs in Nepal are some of the examples which act in a bridging role. In the education sector, the Education Counselling and Disaster Management Office is a newly-established unit at the Department of Education, created to address DRR issues in education. It collaborates with other like-minded organisations to carry out DRR interventions in the education sector in the country. There is the provision of a DRR Focal Person in the Ministry of Education, Department of Education and other central level education agencies, including in the Regional Education Directorate offices and District Education Offices of the country. Some NGOs are also practising provision of a DRR Focal Person at school. They all work as a contact person in the DRR and management area. The Officer from DoE (OD1) shares,

We do not have a specific disaster governance mechanism in education. We have a District Education Committee, Village Education Committee, School Management Committee and in some schools a School Disaster Management Committee, (who are getting assistance for DRR interventions from NGOs), these are the local structures which ensure good governance in education at the local level. School Management Committees are responsible for carrying out school disaster management activities but due to lack of resources and active support mechanisms at a local level, the schools still do not value DRR. The members of these committees are still not aware enough of DRR. The Education counselling and disaster management (from Department of Education) coordinate and collaborate with relevant DRR stakeholders to carry out relevant DRR interventions. There are DRR Focal Persons at the District Education Office in each district, we have an Education Cluster at national and district levels. The District Education Officer is the chairperson and DRR Focal Person works as a member secretary. Local NGOs, INGOs and other government agencies are also members of the cluster. These institutions are assisting the relevant line agencies to establish disaster governance in education. The District Disaster Management Committee, chaired by the Chief District Officer, which is the district-level disaster governance structure, oversees the district level DRR and disaster management actions. (OD1)

DRR has recently been mainstreamed in various areas of development in Nepal

[67]. The above quote indicates that educational governance structures are also associated with disaster governance structures. The provision of national and local level education clusters, relevant DRR networks, such as the Disaster Preparedness Network, and other platforms at various levels are additional structures that are helpful in establishing disaster governance in education. This indicates that since the Government of Nepal introduced DRR in education in recent years, the education governance structures are still not familiar enough with DRR areas, and therefore the development and implementation of educational plans and policies are also not strongly addressing DRR issues. More specifically, most of the schools do not have separate committees that can oversee DRR and school disaster management. During the field visits it was noticed that school leaderships realised the importance of DRR in the education sector, but they do not have enough support and networks to address DRR issues in schools and communities. Tierney [32] also states that disaster governance can trap the available resources through the network to carry out effective and sustainable activities. It also helps to establish a flexible, adaptable and capable mechanism to mobilise the available resources in DRR. Such a mechanism at a local school level needs to be more inclusive and trained in disaster areas.

Since schools are vulnerable to disasters, schools need to realise the importance of disaster governance. The School Management Committee and Parent Teacher Association are the micro-level institutions in the education sector in Nepal. According to the education regulation, the School Management Committee is responsible for the overall school management whereas the Parents /Teacher Association plays a crucial role in strengthening school-community relationships and raising the quality of education and school development [68]. These institutions are responsible for developing and implementing the School Improvement Plan effectively. The interview data show that most of the School Management Committee and Parent Teacher Association members are newly elected and not aware of their roles and responsibilities in school governance and disaster management. One of the School Management Committee member (CC2) from study school 2 shared:

We are new to this role and not aware enough of our roles and responsibilities, it is a challenging role. Lots of things need to be done ... reconstruction of a collapsed school building, retrofitting of the existing building and raising the quality of education. We do not have training and other exposure opportunities. Nor do we know how we can contribute more effectively to school development during our term. We need support and encouragement for school development. (CC2)

Regarding education governance mechanisms, the above view indicates that most of the School Management Committee and Parent Teacher Association members are not aware enough of their roles and responsibilities. The Resource Centre organises one-day orientation workshops for the committee members each

year, and invites three School Management Committee members (chairperson, school principal and female member) from each school to participate in the workshop. After the orientation, these three members need to pass on the information to the rest of the members. The above quote shows that although the community people are eager to take school leadership roles, they do not have enough technical assistance to address school issues including DRR areas. Similarly, the Association of INGOs in Nepal representative shared that school leadership must have a basic understanding of disaster/crisis management. He also added that the District Education Office, the Educational Training Centre and the Resource Centre need to carry out relevant development activities to activate these structures at a local level. Furthermore, he explained that since school governance plays a vital role in establishing a culture of safety, the School Management Committee and Parents/Teacher Association members, if they are engaged more in DRR interventions, become more familiar with school safety and disaster management areas. He pointed out that school safety should be considered first, then quality education.

Field data show that School Management Committees, Parent Teacher Associations, Child Clubs, and Junior Red Cross Circles are the local school level structures and mechanisms to assist and initiate disaster governance in schools. However, the local NGO representative shared that not all these structures are functioning well. He mentioned that “*it is very hard to carry out DRR interventions only through a trained teacher and Junior Red Cross because others do not seem interested in DRR interventions*”. He pointed out the need to strengthen the existing structures to establish an active disaster governance in schools. He further mentioned that provision of an active governance structure can only take ownership of conducting disaster risk assessment. On the basis of the experiences shared by the NGO representative, development of good disaster governance in schools can contribute to vulnerability capacity assessment, the development of an evacuation map and exit strategy, conducting disaster drills and practice, conducting DRR awareness-raising activities in schools and communities, addressing local disaster issues through local curricula, collaboration and networking with all stakeholders to extend DRR interventions.

One of the INGO workers shared that after the earthquake, to address the issues of lost livelihood of disaster-affected families at their working locations, they encouraged schools to establish mothers’ groups to carry out group-based, income-generating activities. This also helped the school to form a school disaster management committee to carry out DRR interventions in an inclusive manner. Similarly, these school-based communities were encouraged to visit local line agencies, for example, the Village Development Committee and District Development Committee, to support schools to construct safe school buildings. However, it is noticed that the study schools do not have such interventions from the assisting local NGOs. It indicates that the impact of DRR projects are different depending on the input provided at different schools.

School level actors need to carry out regular discussions about the needs-based

DRR interventions and effective implementation [62]. Such participatory practices in DRR governance at the local level increase responsibility and provide opportunities for collaborative actions. Moreover, such discussions are also helpful for effective documentation and further development. The existing education regulations make a provision for School Management Committee and Parent Teachers Association meetings at least once in every two months. However, the focus groups revealed that none of the schools have such regular meetings nor have they carried out any DRR related formal decisions in their meetings yet. Despite the education regulations having a provision to conduct a general school social audit and public hearing twice a year, from the interview data it was revealed that none of the schools presented any DRR-related information to parents to ensure the DRR interventions in school improvement plan implementation.

Despite the difficulty in forecasting natural disasters, if an organisation has clear plans, then through systematic disaster preparedness and response activities it is possible to decrease human and physical losses. Recently, the Department of Education has made it compulsory to incorporate school safety indicators in the School Improvement Plan. One resource person said that the school improvement plan development process must be participatory, and schools need to develop the action plans for its effective implementation. She shared:

The School Improvement Plan development process is practised differently in different schools. Some schools put a lot of effort into school improvement plan and use participatory techniques, whereas in other schools the school principal requests some of the teachers to prepare it. The Department of Education developed five DRR-related indicators to address the DRR issues in school improvement plan, however these indicators are lacking in the area of dealing with Education in Emergency, management of textbooks and other DRR learning materials for students, establishment of temporary learning centres, and immediate support for disaster-affected students and teachers. Because of the lack of capacity development activities for School Management Committee and Parents/ Teachers Association, schools normally feel under-prepared for developing and revising the plan. In the Resource Centre meeting, some of the school principals suggested considering the school's local context while delivering DRR lessons and developing the disaster management plan. (EO4)

The above quote indicates the importance and need of capacity development activities for local actors when they carry out a participatory school improvement plan development process and address the defined indicators properly. INEE [69] emphasises the participatory development of a local education action plan involving the local education officers, school leaders, teachers and parents. Similarly, the European Commissions, United Nation Development Group and World Bank [70] state that local education institutions should maintain local development plans, which include the sorts of baseline data appropriate to their region.

In conclusion, global level DRR governance plays a crucial role in information sharing and guaranteeing resources. Central level governance structures are responsible for ensuring the resources are available to carry out the education plans and policies to address DRR/Climate Change issues in schools. Local DRR governance mechanisms still rely on global and national governance structures to get resources. Local structures are mainly engaged in conducting activities rather than the decision-making process. Effective local DRR governance structures are helpful in carrying out timely reviews and revisions of local plans, such as the School Improvement Plan, Village Education Plan, District Education Plan and other policies. They are also responsible for effective implementation of the plans and incorporating their learning and experiences into these plans and policies.

5.2. Support and Expertise

Once the DRR governance structures and mechanisms are established, there is a need for proper support and expertise to make them active and efficient. Data suggests that the disaster governance structure in the education sector has very limited access to resources and other support. Local NGOs do, however, provide support to the schools and other related educational institutions where they work. Thus, from the data it is noted that most of the support and resources provided to the schools are from the local NGOs. The school principal of study school 3 says:

We do not have enough resources to carry out school disaster management properly. Nor are we aware of the area of disaster management. The local NGO (Red Cross) supports some of the selected schools in their working location under its disaster management programme. Our government and parliament developed and approved various laws and regulations, but the implementation component of these legal instruments is poor. It is mainly because of lack of resources and support mechanisms. We need to rely on Ministry of Education and Department of Education to get resources for school development. Schools do not have access to any resources to carry out DRR activities in the school and communities, we are still struggling to find helping hands to rebuild our collapsed building. The local government agencies do not allocate funding to carry out DRR activities, nor are they aware enough of the DRR legal and technical provisions. How can they ensure that every new construction follows safety measures? (PSN1)

Centralisation is still an issue for the schools which have experienced disaster, and the local governance structures and authorities are struggling to manage the financial resources for DRR activities. Support provided by NGOs to the schools is also not enough to carry out disaster governance effectively. Similarly, they are not very familiar with disaster management and are expecting assistance to raise their understanding and skills in this area. It is important to provide the required support to the governance mechanism to establish a good governance culture. The disaster management institutions of the country lack DRR knowledge and capac-

ity and therefore the disaster governance in the country is challenging [59] [71].

NGOs are, however, playing active roles in DRR education areas [18]. Their assistance in carrying out needs-based DRR interventions in schools and communities contributes to shaping DRR in the education area. The school principal from study school 1 (PS1) shared his appreciation of the support received from local NGOs to carry out DRR interventions in his school:

Red Cross facilitated school vulnerability assessments and interactions for school safety at school. We realised that there are lots of gaps in our institutional responsibility for disaster-related activities. With the help of the NGO, we have carried out school mapping and informed teachers and students of the school safety and exit plans. The earthquake drills, First Aid training, and simulation of search and rescue activities were very helpful in developing a wider understanding of DRR. (PS1)

As well as developing technical skills and expertise in DRR for teachers and others in schools, the local NGOs are assisting schools to mainstream DRR in education plans and policies. The development of contingency plans is helpful in carrying out emergency education interventions and educational continuity in a post-disaster context. The International Institute for Educational Planning [72] states:

... the curriculum and its teachers are powerful tools for building a culture of resilience. They have an important role to play in transmitting knowledge for disaster and conflict risk reduction. Therefore, the education system has a responsibility to ensure that it does not act as a vehicle for domination. It also has a role to play in supporting teachers and learners to internalize safe practices in case of disaster.

Adding to the above quotes, a representative from the Association of INGOs in Nepal (NA1) shared this comment:

.... Because of the lack of support and expertise, most of the schools of the country have still not carried out risk assessments and therefore do not have safe school plans that can help to minimise the potential risks. Schools are not serious about disaster management. Without good DRR planning and its management, it is impossible to guarantee that the schools are safe. Parents may say that they don't want to send their children to an unsafe school, what school can respond to them in such a situation? Therefore, school governance needs to carry out school vulnerability assessments and develop safe school plans with proper evacuation strategies and other relevant policies. Such practices also encourage parents and community members to contribute to a safe school. (NA1)

Although the local NGOs provide assistance to schools, disaster governance structures at a local level seem to be passive. This quote suggests there is some blaming between the governance structures. Those above the school level see the

fault for poor governance as a product of bad decisions made at the school level. But those at the school level say that they are unaware of and/or lack the skills to actually make the decisions they need to address. It points out that disaster governance is a collaborative procedure if DRR interventions in educational institutions are to be carried out successfully. During the field visits, it was observed that with the help of local NGOs, two study schools have carried out a school vulnerability assessment, developed the school evacuation plan and displayed it on the school wall. However, one of the secondary level teachers of study school 2 shared that most of the teachers, School Management Committee and Parent Teachers Association members are not aware of the evacuation plan. This suggests a lack of ownership, with awareness of the NGO supporting but no one really understanding what it is doing. He also added that most of the students are not familiar with the evacuation plan and cannot explain how the evacuation plan operates. The community representative of study school 1 also shared that she was not informed about her participation while developing such plans. Since the major stakeholders were not involved in the risk assessment and evacuation plan development process, there is a lack of ownership despite the NGO support. Similarly, one of the secondary teachers from study school 1 mentioned that there are not any DRR-specific plans and policies related to disaster management, nor response initiatives developed and available at schools. In particular, there is a lack of specific procedures to address the issues of children with disability during an emergency in schools. Ensuring there are relevant plans, policies, and strategies in communicating them are the basic instruments for establishing disaster governance in education.

School leadership is responsible for carrying out the mutually agreed activities. The school needs to manage the support and assistance received from like-minded organisations properly. It is essential to create trust and mutual respect for future collaboration. An official from the Lead Resource Centre shared his monitoring visit experiences that reflect the weak situation of disaster governance in public schools. He shared:

One of the INGOs agreed to provide DRR learning materials and other resources to establish a Resource Centre-level disaster learning centre in one of the RC schools of Bhaktapur. During the composing of the agreement, the school agreed to provide a separate room for stockpiling and demonstration, but after receiving the materials, this RC school didn't provide such a space. I have seen that the donated materials are still discarded outside, and teachers reported that lots of material is already lost. I was quite frustrated during the school monitoring visit. I have provided a written report to the school and the District Education Office for further action. (EO3)

Irresponsibility in school leadership and governance is one of the major issues in education governance. The local NGO and the school should have a clear understanding before agreeing to carry out such partnership actions. It also indicates the poor reporting system and communication gap among relevant stakeholders.

It also reflects that poor disaster governance can have long-term consequences for generating funding and resources for the school.

Schools located in disaster-prone areas need access to early disaster-warning technologies. An officer from the National Centre for Education Development pointed out that the schools situated on low land in the plain region are highly vulnerable to floods. It is important to establish early warning systems in order to pre-empt such natural hazards, especially for the schools vulnerable to floods and fire. He also expressed that schools need to be practising the procedures related to the Early Warning System. Moreover, he pointed out the importance of DRR training with regular drills which are essential for better preparedness, response and recovery.

The school level interview data show that with the help of the American Red Cross, the Red Cross Bhaktapur unit and the National Society for Earthquake Technology had carried out some DRR interventions under the Disaster Preparedness for Safer Schools in Nepal (phase 1 and 2) in some selected schools of the district before the earthquake. These activities helped to raise DRR awareness, however, it was not enough to address local DRR issues in a sustainable manner. Most of the school teachers shared that project-based interventions were just focused on finishing the activities defined in their projects rather than focusing on the long-term impacts. After the earthquake some of the local NGOs, for example the Centre for Mental Health and Counselling Nepal and the Red Cross, carried out some disaster response-related workshops and provided support to manage education in the emergency context. The local NGO representative shared that after the earthquake, while the NGO was distributing the relief materials to the earthquake-affected poor and disadvantaged community people at the school, the elite groups of that community came and forced them to distribute the relief items to their community group first. There were several other such stories published in the local newspaper. Lack of good governance may create tension when carrying out response and recovery-related interventions in disaster-affected communities.

The officer from National Centre for Education Development mentioned that from the education line agency side this institution has, for the first time, carried out a workshop on the impacts of disasters in education and its management for selected staff from Educational Training Centres and the District Education Office of 14 earthquake-affected districts. The major aim of this event was to carry out an immediate monitoring visit to the affected schools for the immediate response and establishment of the provision of emergency education. The monitoring report was helpful for the district and national agencies, so they could carry out immediate interventions in the affected schools and communities.

Teachers are the main actors who deliver DRR effectively in classrooms and the community, but the focus groups with teachers show that most of the temporary teachers appear to lack motivation in their roles. One of the main reasons behind this is that teachers are recruited differently in different schools. There are 17 types of teachers, which creates a problem with their identity and also confusion among

the teaching profession. One of the lower secondary level teachers from school 2 says:

Teachers working in the same school are treated differently by the school leadership, because various types of teachers are recruited in schools. Permanent teachers are more recognised and valued than the temporary ones. They are given more training, exposure opportunities and limited work load. Most of the teachers are associated with a political cadre. Privately managed teachers are not well paid, such a situation creates frustration among temporary teachers and they are looking for other job opportunities. These teachers are not motivated, and they are less active, less accountable and less responsible in carrying out the DRR interventions. (CT2)

Teacher management issues in schools are also linked to poor DRR education. Since DRR is a cross-cutting issue, all the teachers need to take ownership in order to conduct DRR education activities. To address such a condition, school leadership needs to put more effort into effective teacher management to generate teamwork.

The trained teachers need to be more responsible and held accountable for carrying out DRR activities in school. The school governance needs to monitor their activities too. The interview data suggests that there are a certain number of teachers in each school who want to take advantage of the training opportunities. They have a good connection with the School Management Committee and the school principal, and are always seeking to take the opportunities. It helps them with gaining promotion and earning some money from the daily allowances provided. However, after attending training these teachers become passive and don't even share their learnt skills and knowledge with others. Teachers who are nearer to the school leadership can get opportunities, but others who are working hard are rarely provided with such opportunities. Therefore, it appears, it is a leadership-related problem that prevents the set-up of a well-established support mechanism in DRR governance. Teachers' engagement is crucial to managing all sorts of disasters at a local level. Teachers need more rewards and encouragement to support schools and communities, so they can raise the quality of education and solve the long-term crisis situation. Therefore, the concept of disaster governance needs to be introduced to the teacher development course. The officer from the National Centre for Educational Development pointed out that the current teacher development courses are lacking in addressing information about DRR and inclusive education, addressing the differences of learners in classrooms, and using varieties of teaching learning approaches. He urged a revisit of the teacher development course to ensure all teachers had wider learning opportunities.

The focus group with resource personnel revealed that in order to enable disaster governance in education sectors, we must overcome a huge need for the capacity development activities for all responsible people in implementing DRR in educational plans and policies effectively. They also raised a concern that the re-

source centres do not have resources and the resource personnel also do not have enough DRR training opportunities. Because of such circumstances, they also realised that the school governance and management training and workshops are not carried out effectively in Resource Centres. These situations prevent resource centres from fulfilling their role and hence the personnel are not confident enough to contribute to strengthening disaster governance in schools. Resource Centres play a potentially significant role for improving school governance through training, exposure, mentoring and encouragement and raising the quality of education, but it is not happening as well as expected. Most of the resource personnel also agreed that schools need to apply the building codes and standards while constructing new school buildings. However, during their recent school monitoring visits they observed that the schools are still not serious about maintaining the safety standards while rebuilding the structures.

Schools also need regular support from local education agencies to implement planned DRR interventions. The Resource Centre and District Education Office need to construct a good monitoring plan to support DRR activities in schools. The school principal of study school 2 shared:

We expect systematic and regular support from the technical experts while reconstructing the collapsed buildings. They need to visit and monitor the schools to ensure the quality of the buildings to confirm their safety. And also their availability is crucial while constructing new school facilities but these things are not happening properly, the staff do not want to visit remote and rural parts. (PS2)

There is limited availability of support and expertise in the DRR area and the consequences of poor horizontal and vertical governance in maintaining the safety standards. The technical experts are seen to be unmotivated to travel to remote areas to support schools for DRR interventions.

The data show that some of the schools in the country, including some schools from the Bhaktapur district, are supported by the local NGOs to carry out DRR interventions through both school and community-based approaches. School-based interventions are mainly focused on schools, whereas community-based DRR interventions are carried out through community groups for the schools. Organisations, for example Save the Children, UNICEF, Plan Nepal and World Vision, value children in development and conduct child-centred disaster risk reduction interventions in some parts of the country. These organisations also established a consortium platform in order to work closely with a child-centred disaster risk reduction approach. An officer from DoE shared:

“We have Child Centred DRR consortiums in six districts. Sixty schools of six districts (Baglung, Parbat, Banke, Kalikot, Kailali, Doti) benefit from this programme. Through the project these schools have school-based disaster management teacher training and disaster drills for the students and teachers. Similarly, in five hundred schools of nine districts (Humla, Bajura,

Dhanusha, Saptari, Dhading, Dolkha, Parsa, Baitadi), the National Society for Earthquake Technology, a national level NGO, is assisting schools in implementing the defined pillars of the comprehensive school safety framework. It is a collaborative project in which the management and project structural parts are carried out by the District Education Officer, the DRR curriculum provisions are overseen by Curriculum Development Centre, and teacher training is managed by National Centre for Educational Development. The inputs are various due to our reporting system it is hard to find out what outputs we have made. (OD1)

The collaborative nature of the DRR project can enhance relationships among schools and local communities in establishing disaster governance at various levels. It indicates that the integrated DRR inputs are helpful in establishing an effective disaster governance to address the three pillars of the comprehensive school safety framework which are: safe learning facilities, school disaster management and risk reduction, and resilience education. Partnership is also helpful in that schools can get assistance from like-minded organisations in disaster governance. Such partnerships assist schools in planning to reduce the potential disaster risks, designing the emergency procedures and evacuation plans, and carrying out DRR awareness education and safety drills in schools. Such partnerships contribute positively to achieving the targets made by the Sendai Framework to reduce the lives lost, numbers of people affected, and economic damage from natural hazards. Organisations, such as the National Society of Earthquake Technology, work with the Department of Education to retrofit the vulnerable school buildings in some selected districts, while giving emphasis to active community participation in vulnerability assessment, and training local masons, traders, and user groups about safer construction, which is useful for establishing disaster governance in schools.

Education authorities need to ensure the safety of schools' physical infrastructure [73]. Provision of safe facilities contributes positively to establishing disaster governance. Thus, education leadership needs to put more concern and effort into creating a safe school infrastructure, for example, retrofitting old buildings to increase their strength. The Disaster Focal Person of the District Education Office shared that, in the case of the Bhaktapur district, retrofitting has been found to be a very effective technique which protected the schools from the recent earthquake. Most of the school buildings in the study district are also vulnerable to various other hazards and hence school governance is looking for assistance; most of the schools are interested in carrying out retrofitting of the old existing buildings. The school principal of study school 3 shared:

Most of the school buildings of the district are vulnerable to earthquakes and other common disasters. We have observed that the retrofitted school buildings in this district have survived the recent earthquake. We have also requested support from the USAID project in order to retrofit our old building but still not heard back from them. Some schools are vulnerable to fire. There

are a couple of schools, including ours, which are situated at the edge of the stream and are vulnerable to floods. There are some schools that are also vulnerable to strong winds, ... due to strong winds, a number of schools have lost the roof of their school buildings in past years. There are some school buildings constructed underneath big trees which are also vulnerable to strong winds. (PSN3)

Most of the schools in the study district are vulnerable to common natural disasters and their negative consequences on schools. Development of a disaster management plan and its effective implementation is one of the crucial parts of disaster governance. Such a plan in the education sector helps to ensure the safety situation in educational institutions [73].

The representative from AIN explained:

From the experience of the Gorakha earthquake, we have learnt that our schools are weak, about six thousand school buildings collapsed, fortunately both the major earthquakes struck on school holidays, hundreds of thousands of children were saved, otherwise what would the situation be like? ... School buildings are not constructed in an appropriate manner. The stakeholders, including school governance, now realised that we need to have safe schools. Before the earthquake we (INGOs/NGOs) need to spend more effort and resources on DRR awareness-raising activities, however the recent earthquake experiences awakened people to the importance of having knowledge and ideas about disaster risk reduction. We need to put more effort into safe reconstruction. (NA1)

Realising the post-disaster context of the country, participants point out the need of collaborative efforts to support individuals, organisations and community people to build back better. Collaborative actions for providing support and expertise are considered essential in addressing the issues.

Schools and other public facilities need support in order to address the risk of the possible hazards and vulnerability. One of the community leaders of study school 3 states:

There are some local industries near to our school which produce noise that disturbs the teaching and learning activities in school. In the past one of these industries had a fire, therefore there is a need for the installation of a fire control system. The schools located in the congested city areas are also vulnerable to fire and therefore these schools also need fire control systems to reduce the risks from fire. Local government needs to carry out formal monitoring before approving the industries. (CS3)

Support and expertise are needed at a local level to specifically address the issues of urban disaster risks. Local DRR governance mechanisms need to be empowered to provide support to oversee such issues at a local level. It also indicates that schools situated in urban areas are comparatively more vulnerable to disasters.

After Gorkha earthquake, realising the disaster vulnerability in the urban areas, with the help of the Adventist Development and Relief Agency Nepal, Danish Church and Lutheran World Federation, the National Disaster Risk Reduction Centre conducted urban disaster risk reduction programmes in Kathmandu and Lalitpur district [74]. Global DRR actors can assist the national and local governance in addressing the emerging DRR issues.

5.3. Coordination and Communication

The interview data suggest that school governance needs coordination among like-minded stakeholders and other available networks for school safety and disaster management. Coordination increases the collaborative work that can address the risks through the established structures in schools and communities. Moreover, coordination helps to strengthen the available DRR support mechanisms to respond well to disasters. Similarly, coordination among like-minded organisations is emphasised strongly in the rebuilding stage of raising disaster resilience through the build back better strategy.

Establishment of DRR structures and platforms are helpful for learning and sharing resources and collaboration action. A representative from a local NGO commented that establishment of education clusters played a significant role in disaster management in strengthening coordination and communication among stakeholders in the district. These clusters worked together closely so they could respond to the recent earthquake in Bhaktapur. He shared:

There are eight clusters including an education cluster established in Bhaktapur district and most of the clusters are led by respective government line agencies, which is one of the major changes that has been made in initiating disaster governance at a district level. Before the earthquake, the coordination part was not too strong and it was very difficult to coordinate with governmental organisations in disaster management. After the earthquake, we all realised its value, now the government agencies in the district are active and taking responsibility for disaster and crisis management, for example, the District Education Office coordinated with stakeholders through the education cluster and addressed the major issues in education after the earthquake. (NO1)

The establishment of learning-sharing platforms creates a collaborative culture among stakeholders and makes respective line agencies responsible for DRR actions. It shows that proper coordination and communication among relevant actors plays a significant role in carrying out shared responsibilities during the disaster response stage.

School governance can play an important role in coordinating with relevant line agencies in order to get assistance for sustainable DRR actions in schools and community. Most of the research participants agreed that schools can work closely with local government agencies such as Village Development Committees or Mu-

nicipality. Furthermore, they have pointed out that the school leadership needs to coordinate and communicate with the District Development Committees, District Women's Development and Child Welfare Office and the District Disaster Management Committee so these can contribute positively in the integration of DRR activities in schools. Schools need a range of integrated interventions and effective disaster management in order to address DRR needs of each phase of the disaster cycle. Thus, a series of collaborative actions are required for carrying out preparedness, mitigation, response and recovery, and formal collaborations among like-minded stakeholders is essential [75] [76]. UNISDR and GADRRRES [77] emphasise proper coordination and communication in carrying out collaborative action in school-wide and community-linked simulation drills to practice, critically evaluate and improve on response preparedness.

A District Education Officer shared that the District Education Office coordinated with Red Cross, UNESCO, UNICEF, Centre for Mental Health and Counselling and other organisations which have been supporting schools with overall disaster governance. Collaboration with like-minded organisations is helpful for ensuring the availability of wider DRR learning opportunities for students [34]. Local and national level study participants pointed out the importance of coordination and communication in disaster management areas. Proper coordination after the disaster is helpful for raising shared responsibility among stakeholders and that encouraged schools to cope with the situation. The officer from the Department of Education states:

... in some locations, stakeholders such as Nepal Red Cross, Save the Children, Oxfam, Plan, Action Aid, United Mission to Nepal, World Vision and many others (NGO/INGOs) are working with schools and communities in the disaster management area, they are assisting selected schools within their working locations. These organisations are assisting schools to carry out school risk analysis and develop relevant plans, day celebrations and conduct disaster awareness sessions (including drills and organising relevant capacity development workshops, such as DRR training for teachers, committee members and students), which are helpful in DRR education delivery. Such collaborations need to be extended to cover other schools to expand DRR education. (OD1)

The non-government sector also acknowledges the collaborative actions in DRR education carried out by various DRR actors. It also indicates the need of extension of DRR education interventions to other schools.

School governance needs specific data and information to develop an effective school safety plan. To collect such vital data, school governance also needs to carry out proper coordination with other like-minded agencies. INEE [66] states the importance of establishing an education management information system for collecting essential DRR-related data and information that can contribute to school planning and management. This information needs to be updated regularly.

UNISDR [73] states that schools should regularly reassess their vulnerability in relation to new information.

Disaster governance also includes the documentation and proper use of disaster data. Recent experience shows that because of a lack of proper coordination, communication and documentation systems at a grass-root level, it took a long time to get information on earthquake impacts. In addition, lack of official data influenced the development of disaster response and recovery plans. Up to date data is also essential for the collaborative work among the stakeholders at various levels. An officer from the department of education mentions:

It took a long time to get disaster loss-related information from schools and other education institutions after the earthquake. That is mainly because DRR information is not incorporated into our education information management system. Proper documentation and use of disaster data helps to provide immediate relief and response action. (OD1)

Disaster information is crucial for disaster preparedness, mitigation, response and recovery. It indicates the need for the establishment of a disaster management information centre, too.

One of the secondary teachers from school 3 pointed out that there is a lack of coordination among like-minded actors in responding to disaster impacts at a local level. He pointed out that the Red Cross and schools can coordinate with each other to carry out effective disaster response and recovery. He states:

Observing the earthquake response experiences, I realised that there is a lack of coordination among DRR actors. After the earthquake, I was expecting that Red Cross would coordinate and mobilise its trained manpower to respond to the earthquake crisis. There should be a proper coordination and co-working system that can mobilise the trained teachers, students and school leaders during an emergency situation. (TSN3)

It is crucial to mobilise the trained human resources for the effective response and recovery. It also highlights the importance of coordination to share their best learning, feeling and experiences toward the disaster response. Disasters are recognised as barriers to development, and therefore proper collaboration and coordination among like-minded organisations is essential to address such challenges [66]. Raj and Gautam [78] note that, because of lack of coordination and communication, the government failed to adequately utilize the local level knowledge and resources, leading to ad hoc rescue and relief processes, and ultimately, to many avoidable deaths from injuries sustained in the initial shaking and inadequate rescue [78].

5.4. Sustainability

Most of the research participants criticized the irregular and one-off sort of DRR interventions carried out in schools, the limited DRR content in the school curriculum, the ineffective delivery practices and the lack of resources hindering the

sustainability of DRR education. The data suggest that DRR must be a part of daily school activities. During the field visit it was observed that after experiencing the huge earthquake in 2015, school leadership and community people are now aware of, and realise the value and importance of, sustainable inputs for DRR interventions. The recent earthquake experiences and their negative consequences on people and the community also make individuals aware of the need for better preparedness. The AIN representative stresses the importance of DRR for a positive change:

Before the Gorakha earthquake, all the disaster management efforts were made according to the debate on why we should prepare people for earthquakes, but after the earthquake the discourse has now changed and focused on how the disaster risks can be minimised. Before the earthquake the building codes were not strictly followed but after the earthquake the government put more effort into their effective implementation and people are more concerned about safe building construction. It is a good start to bearing responsibility in disaster governance. (NA1)

Disaster governance needs to identify the needs of various disaster-vulnerable groups. For example, after the Gorakha earthquake, security agencies, such as the Nepal Army, Armed Police Force and Nepal Police, also strengthened their disaster management units and carried out various capacity building activities, introducing relevant technologies mainly for emergency response [79]. Similarly, the DoE put more effort into school and child safety. Disaster governance needs to develop a roadmap for better preparedness and response, including rebuilding and recovery after a disaster has struck. These initiatives are also helpful for raising the accountability and responsibility of the actors, so they can establish effective disaster governance in order to carry out sustainable DRR interventions at each level.

The top-down approach in disaster management is ineffective and inequitable. Schools need financial resources to conduct DRR related activities both in the school and community. Schools situated in disaster-prone areas need special support to address the issues in a sustainable manner. Such schools need resources and materials that are helpful for immediate recovery and response, for example, Go Bags and life jackets in the context of earthquake and floods. One of the primary teachers from study school 1 mentions:

Schools do not get any financial support for carrying out DRR activities. ... there is no special support available for DRR education from our own systems, however, some schools are receiving support from NGOs. In our school, Red Cross carried out some training for us, this training was very helpful for getting DRR ideas. NGO support only is not enough, we need regular support from our own system. (TC1)

Even the small and one-off support provided by an NGO contributed positively to make meaningful changes in DRR education delivery. Thus, organised and reg-

ular DRR education initiatives can make significant contributions in the disaster management area. In a similar vein to the quote above, one of the secondary teachers of study school 1 mentions,

...We realised that if we all are trained well and receive the essential disaster risk reduction skills and knowledge, we can easily cope with a crisis situation. The urban areas are more vulnerable to earthquake and fire thus it is very important that the school governance must provide DRR skill development opportunities to all teachers so that they can transfer them to students. Schools need more resources to carry out these activities. (TS3)

There is limited availability of funding for DRR interventions in schools. Only some of the selected schools receive support from INGOs in the DRR area. The Department of Education recently made it mandatory that each school addresses the suggested DRR targets while developing and revising their School Improvement Plan. However, schools are struggling to comply given they lack the necessary resources. Schools need resources to carry out DRR education activities that relates to disaster preparedness, mitigation, response and recovery [80] [81].

One of the secondary level school teachers from study school 2 mentions,

Schools rely on NGOs to carry out DRR related activities. It is not only the NGO's business, they are supporting us, we... all the school family, need to realise its importance and work better for DRR. Ownership is the major thing, if we don't have ownership of these activities, we won't make further progress. All these things will stop when NGOs complete their projects. (TC3)

Donor-driven support is not sustainable enough. Families and communities need to realise the value of DRR and take more ownership themselves. There is a need for a common understanding among all the actors when it comes to carrying out relevant DRR interventions in schools. For example, the school principal shares,

We have been developing our School Improvement Plan for the past couple of years and have incorporated activities to construct earthquake-resistant school buildings and get support to retrofit the existing old building. We have submitted the School Improvement Plan to DOE and other agencies and requested the funding. Years have passed but we have never got funding for such support in our school. Last year our old school building, which was a part of the school's history, collapsed in the earthquake. Higher level authorities need School governance to have access to the resources. Schools are waiting for a long time to construct earthquake-resistant buildings. (PS1)

Establishment of good disaster governance at each level needs appropriate resources in order to develop and carry out DRR actions. Since schools do not receive any funding for DRR actions directly from the District Education Office/Department of Education, the DRR area is still not valued in schools. An officer from

the Department of Education shared that some schools receive support to carry out DRR education related interventions.

Large or small-scale disasters have negative consequences on the education system. The school principal of study school 3 shared about the unexpected school closure situation because of the floods. He explained that such a disaster situation affects the school calendar, children lose their school days, and this creates stress and tension for students, parents, and teachers. Similarly, the school principal of study school 2 shared about the small landslides that affected the school and children. He mentioned that because of the landslides that destroyed the property of some community people, some of the children from the affected families dropped out of school. These examples indicate that regardless of the size of the disaster, educational activities in the schools were still disrupted. The damage to the education infrastructure has long-term impacts on child development and in any disaster, either small or large scale, children, the poor and other vulnerable communities experience various negative consequences. It was observed during the field trip that the poor and disadvantaged people are still struggling to survive after the earthquake. Moreover, in various places, children are still inside temporary learning centres and it is hard for them to cope with the extreme cold and hot environment. Thus, good governance needs to take into account the particular vulnerabilities and challenges of different members of the community.

Most of the schools in the country are vulnerable to disasters [67]. Most of the public schools are situated on low land, near to a riverbank, at the bottom of the mountains, and near to the landslide areas. Most of the research participants noted that the first priority of the school governance of these schools is shifting the school into safe places. A representative of the Association of INGOs in Nepal shared that there is a strong need for the National Safe School Policy to address the safety and security issues of children in all types of schools. He says,

We have been advocating for the development of a National Safe School Policy to ensure safety measures in all types of schools (institutional, private, public and charity) in the country. The current School Sector Development Programme is more focused on the safety issues of the public schools but has not mentioned anything about other types of schools. The development and implementation of the National Safe School policy will be helpful for establishing safe schools in the country. Realising this gap, we have facilitated to develop the first draft and recently submitted it to the Ministry of Education for further feedback. (NO1)

A local NGO representative also pointed out the need of a safe school policy to ensure safety in schools. Similarly, he suggested that the District Education Office needs to carry out frequent monitoring visits to find out the real situation of the schools.

Thus, a well-established disaster governance in education is essential to assist schools with their catalytic effects on disaster preparedness, mitigation, response and recovery in a sustainable manner. Strengthening the disaster risk governance

in relation to the adoption of the Sendai Framework for DRR (2015-2030), Nepalese disaster risk governance in education still does not have its own separate policies, law and regulations, financing, and advanced institutional structure. As disaster governance contributes positively to reduce the risks of future disasters, in the disaster-prone context, it is important to initiate sustainable DRR interventions in the education area. Moreover, as educational interventions are essential for making a long-term sustainable impact in the community, the DRR and disaster management process in education helps to educate individuals and communities.

6. Conclusions and Prospects for Future Research

This study explored the notion of disaster and education/curriculum governance and practices in education in Nepal. The data suggested that global, national and local disaster governance play crucial roles in mainstreaming DRR education and disaster management interventions. In addition, it is clear that the disaster governance at any level relies on the country's governance structure. The recent earthquake experiences raised people's interest and concerns in the risk reduction area. Through the findings, it is noticed that the lack of a stable and strong disaster governance structure, provision of limited support and expertise to address the disaster issues, lack of coordination and cooperation among DRR actors, and lack of context-specific sustainable DRR interventions are the major areas that hinder the current set-up in practising good disaster governance in education. Because of a lack of systematic and long-term vision for funding in the education system, schools rely instead on short-term support coming from either the community or international donors. This also tells us that the state has little commitment on its own to supporting DRR education interventions at various levels. To fill this gap, other actors, such as local NGOs, International Organisations and other community welfare groups contributed significantly in areas where the state's role was found to be limited in funding DRR actions at local levels. Moreover, other non-state actors are also engaged in providing funding for carrying out DRR education initiations. Funding in DRR education from these actors is mostly focused on carrying out DRR awareness education interventions in schools and communities, however it is still not enough to address the issues. In the context of Nepal, DRR is made possible in the absence of the state in a way that reproduces rather than interrupts patterns of marginalisation and inequality.

This study has shown that since DRR governance structures were not in place, schools were not actively carrying out DRR interventions. Failure to decentralise DRR education provisions from national to local levels leads to low participation, responsibility and accountability of the actors. For example, isolating school leadership from the curriculum development process demotivated them in regard to its implementation. Because of the centralised curriculum, education governance is also unable to address the contexts of the three ecological belts: plains, hills and mountains. Furthermore, since the school curriculum has been developed by sub-

ject experts and national level policy people, the curriculum and textbooks are not comprehensive enough to address local needs.

Findings suggest that governance is multi-layered at local, national and global levels and the layers are inter-linked and interact with each other in the development of relevant policies and plans ensuring funding to carry out education-related interventions locally. For example, a key lesson learnt from the interviews and focus groups with study participants is that DRR education provision in the school curriculum is shaped because of the advocacy initiations carried out at a local and national level by various actors and government commitments to the HFA (2005-2015) and the Sendai Framework of Action (2015-2030). However, it is revealed that because of weak regulation mechanism the progress made in DRR education is not yet satisfactory.

This study has noted that the centralised nature of the decision-making process and poor resource allocation practices in DRR areas have negative consequences at a school level for DRR interventions. This study found that successful DRR education initiatives need participatory governance practices; thus, a decentralised governance mechanism is seen to be a more effective mechanism than centralised. Considering DRR initiatives in education, because of a lack of decentralisation awareness and empowerment at community level, this study has noted that the decentralisation concept in education governance has been perceived differently by various actors. Community people pointed out that the school principal and School Management Committee chair hold power and authority, therefore most of the decisions made at local level were influenced by their power. Policy level people, however, observed that decentralisation practices at local level depend upon socioeconomic status, so poverty and illiteracy are barriers to participation and education governance and in such a context these people struggle with various challenges. Some of the teachers perceived that decentralisation in education is not a wise idea for improving the quality of education. It is revealed that pushing decentralisation and shifting responsibility from a higher to a lower level is not working well in all places. Such practices in some places create problems such as internal conflict, corruption and misuse of authority. Moreover, findings revealed that schools need proper assistance in managing these issues, otherwise there is a danger that the community has no ownership, nor is there funding for all.

This study revealed that education governance requires structural, technical and financial assistance from like-minded actors to carry out effective and relevant education initiatives at the local level. Findings show that poor infrastructure and the lack of relevant learning resources at schools adversely affected the fulfilling of the learning needs of students and communities. School personnel, School Management Committee and Parent Teacher Association representatives and those from communities interpreted the value of education governance in the sense of managing physical and emotional safety at schools.

This study also found that the formally established disaster management committees, DRR networks, and other platforms such as the Education Cluster, Con-

sortium, and Education Task Force, that conduct regular meetings and interactions at central and local levels, are helpful for increasing collaboration and sharing learning and challenges among government and other actors. However, it is noted that the level of participation of the member organisations is based upon their funding which influences their feeling of ownership and engagement in interventions.

Moreover, the disaster governance practices are less participatory and centralised in resource allocation and the decision-making process. The local governance mechanisms have been influenced by the unstable political system of the country. The disaster governance personnel are still unfamiliar with their roles and responsibilities and hence there is a lack of accountability, responsibility and transparency. The national disaster governance in education appears to be more active, while a partnership with other like-minded actors at schools in a post-disaster situation is relatively weak. A similar conclusion is also made by Jones *et al.* [59] in their study about local-level governance of risk and resilience in Nepal. They also found that the local-level disaster governance structures are active only if they are supported well and have authority to mobilise resources to address the context-specific disaster issues.

Institutional Review Board Statement

The University of Auckland Human Participants Ethics Committee approved this research project (Reference number: 017773).

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

Data are available on request.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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