



# Polycentric disaster governance in a federalising Nepal: interplay between people, bureaucracy and political leadership

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## Abstract

In evolving democracies, top-down approaches to response and recovery in disaster governance remain predominant. Taking the case of Nepal, this research explains how Nepal's disaster governance has been accentuating different degrees of monocentric and polycentric configurations post-2015. Polycentricity is defined as a governance configuration where a combination of small, medium, and large-scale autonomous units coexists that are interdependent in making rules, developing policies, and implementing them within a specified scale of governance. Based on confidential interviews (n=23) and policy documents (n=48) analysis, the study shows how disaster governance has been taking shape in Nepal, after the 2015 earthquake and with the ongoing federalisation process. This research found that in Nepal, there is a polycentric configuration at and across the national and provincial levels, whilst higher degrees of monocentric characteristics are still prominent at the municipal level. Further, our findings suggest subtle conflicts (or conflicts of interest) between the newly elected municipal representatives and the existing bureaucracy. Such tensions have arisen due to the drive and enthusiasm of the political leaders to bring transformative changes at the municipal level in quick succession. The article concludes that polycentric governance configurations in Nepal are rather becoming complex—complementing and inciting competition between various actors.

**Keywords** Polycentric and monocentric configurations · Disaster governance · Evolving democracy · Conflicts and collaboration · Nepal

## Introduction

“Natural disasters” are not real; human behaviour and policy action convert natural hazards into disasters. Natural hazards interact with risk and vulnerability to shape disasters (Nohrstedt et al., 2021). Disaster risk increases due to a community's vulnerability, limited capacity to reduce the harm of a natural hazard and disaster governance (Twigg, 2015).

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Combining disasters and governance is a relatively new academic effort. The concept of disaster governance emerged in its advanced form in the UNDP report 'Reducing Disaster Risk: A Challenge for Development' in 2004. The report views disaster governance as exercising economic, political, and administrative authority to manage disasters at all levels, mindful of multifaceted, multi-stakeholder approaches and cross-level dynamics. The concept of disaster governance represents a shift from government to governance and reflects large-scale social and political changes with the emergence of new collaborations between state and non-state actors (Tierney, 2012). Disaster governance is much more inclusive as compared to other similar concepts, such as disaster risk reduction and disaster risk management, which precisely focus on four phases (mitigation, preparedness, response, and recovery) of disasters (Coppola, 2011). Disaster governance is a collaborative effort that brings together multiple organisations to solve disaster-related issues that extend beyond the purview of any single organisation (O'Leary et al., 2006; Ansell & Gash, 2008). Further, Bakema et al. (2019) argued for a comprehensive understanding of disaster governance, as disaster governance is a social process shaped by cultural, historical, emotional, political, economic, and power interplay between a variety of state and non-state actors.

Taking cues from Maskrey (1989), Lassa (2013) refers to disaster risk governance as how society manages disaster risks (response and recovery) triggered by geological hazards such as earthquakes, climate change and hydrometeorological hazards, conflict, and war to sustain development and human well-being. The definition proposes reducing the impacts of disasters by involving multiple organisations and actors in decision-making at different levels (horizontal and vertical). Tierney (2012) distinguishes and assigns roles between horizontal and vertical governance. Actors and organisations at the horizontal scale are characterised by actor networks that mainly function in a local geographic context, for instance, a community or a watershed. On the contrary, the vertical scale is understood as the local, sub-national and national entities, such as the collaboration between states, provinces, regions, and global actors. Governing disasters at different scales and levels is complex (Tierney, 2012).

Disaster governance does not mean that state actors may no longer have a strong role, but their role may change from sole decision-maker to steering the decision-making process among various actors involved. For instance, Storr et al. (2017), in the study of Hurricane Sandy in the USA, argue that polycentric orders (or configurations) that include private actors play an important role in post-disaster recovery efforts. Different state and non-state actors bring different strengths to the process of disaster governance. Non-governmental organizations have a robust local presence, multilateral donor agencies can provide financial strength, and the state can legitimize the process of different actors working together. It is a form of disaster governance that is moving towards polycentricity. A polycentric governance configuration is a combination of small, medium, and large-scale decentralized units that are interdependent for making rules, developing policies and implementing them within a specified geographical area or level of governance. Pahl-Wostl and Knieper (2014) show that polycentric governance configurations are more capable of responding to future biophysical and socio-political vulnerabilities, moving away from stationarity or dependency on monocentric governance configurations (Milly et al., 2008).

Polycentric governance configurations are complex, redundant and may lack central direction, but they offer strength and different response capabilities to respond to known and unknown external shocks. For instance, if there is only one governance unit for a large geographic area, the failure of that unit to respond adequately to a disaster may mean a breakdown of the entire configuration. On the contrary, if there is a polycentric governance configuration organized at different levels for the same geographic region, the failure of

one or more of these units to respond to a disaster may lead to a smaller malfunction that may be compensated by the successful reaction of other units in the configuration. This may not always be true, however, especially when there is a situation of a unique disaster such as the COVID-19 pandemic, where centralized systems such as China and Cuba were able to control the infection spread using command-and-control. In contrast, decentralised and democratic systems such as Switzerland and the Netherlands struggled to curb COVID-19 cases (Imperiale & Vanclay, 2019).

Against this backdrop, this article explains how Nepal's disaster governance has been accentuating different degrees of monocentric and polycentric configurations at different levels of governance since 2015. The article draws upon local governance challenges from two municipalities—*Bitthadchir* and the *Budhiganga* in far western Nepal. The increasing frequency and intensity of disasters is one of the most pressing challenges in Nepal. With both mountains and flood plains, Nepal is susceptible to disaster risks such as floods, landslides, glacial lake outbursts, and earthquakes (Aryal, 2012). Moreover, the Maoist insurgency in the 1990s, political instability and evolving constitution in the last 2 decades has not provided favourable policy support for effective disaster risk governance (Jones et al., 2014). The combination of socio-political volatility and biophysical impacts of climate change makes Nepal more vulnerable to disasters.

Since 2015, Nepal has been implementing the Sendai Framework for Disaster Risk Reduction (2015–30) with various national-level disaster plans and policies, including the 2017 Disaster Risk Reduction and Management Act (DRR&MA). However, with all the policy and on-the-ground changes, natural hazards and man-made disasters continue to be responsible for the loss of lives and heavy infrastructure damage. There is an imbalance between the scale of the disaster and the type of institutions and governance design in Nepal, creating disaster stress in the country (Vij et al., 2020). Within Nepal's evolving political system, the disaster risk governance system is also changing and is currently focused on federalised disaster risk reduction paradigm (Lam & Kuipers, 2019; Vij et al., 2020). The layering of disaster governance paradigms in Nepal is observed, with overlapping paradigms—response and recovery, disaster risk reduction and management, integrated climate change adaptation and disaster risk reduction, and federalised disaster risk reduction (Vij et al., 2019, 2020). With new constitutional reforms, the delegation of administrative and financial powers to the local (urban and rural municipality) level and attempts at effective coordination among various actors (state and non-state) have the potential to build the capacity of the communities to reduce risks and provide quick response and recovery services.

The remainder of this article is divided into five sections. Section "**Polycentric governance and characteristics: conceptual arguments**" conceptualises polycentric governance configurations. Section "**Methodology**" presents the methodology and the contextual background of Nepal and the study sites. Various studies have discussed quantitative polycentric governance configurations in different contexts and their relative advantages over a monocentric governance system (e.g., Chaffin et al., 2016; Kim, 2020; Lubell & Robbins, 2022). There is limited scholarship on qualitative measures of how emerging polycentric governance configuration will influence disaster governance in the least developed countries or emerging economies. This article does not capture quantitative measures such as network density, centralisation, and individual actor's centrality but theoretically and qualitatively contributes by showing how polycentricity can help us characterise the nature of disaster governance in Nepal. Section "**Polycentricity in Nepal's disaster governance**" presents the study's key findings, focusing on systematically understanding how different state (politicians and bureaucrats) and non-state (civil society actors, national and international

disaster agencies) actors govern disasters at different levels in Nepal. We specifically elaborate on polycentric and monocentric governance configurations emerging after the 2015 earthquake and changes in the constitution. This research only captures the formal polycentric interactions between various actors and organisations. Informal aspects of polycentricity, such as collective action between local communities, youth clubs and religious groups, are not studied. Such an analysis further identifies the current struggles in disaster governance and sets a path forward for future disaster governance. Section "[What can polycentricity offer to disaster governance?](#)" reflects on the key findings and shows how polycentric governance is a useful framework to characterise disaster governance, pointing out a few areas for future research. The last section presents the key conclusions.

## **Polycentric governance and characteristics: conceptual arguments**

The terms monocentric and polycentric originate from the biological and chemical sciences. The two terms had been used to describe the types of plants in botanical studies, with multiple reproductive cells (polycentric) or only a single reproductive cell (monocentric) (Polanyi, 1951). In the social sciences, the two terms are commonly used by geographers, urban planners, political scientists, and policy analysts. For instance, urban planning scholars and geographers use the term polycentric to refer to metropolitan regions encompassing significant suburban centres and one major urban centre, in contrast to a monocentric metropolitan order centred on a single city that has greatly expanded over time.

Monocentric governance is where the state is the centre of power and authority, controlling the society, market forces and related resources (Kooiman, 2003; Rhodes, 1997). The state exercises authority by setting-agenda for societal problems, defining the problem, framing the policy goal and implementing the policy. Monocentric governance is also sometimes referred to as command-and-control systems (Kooiman, 1993) or classical modernist approach (Hajer & Wagenaar, 2003). Monocentric governance is characterised by the capacity of the government to steer and control society via well-oiled machinery of bureaucracy, continuously legitimising its power through democratic principles (Pierre, 2000; Termeer et al., 2010). Through a hierarchical system, the power of the lower government is restricted by the higher level of government. There are no overlaps in the jurisdiction for specific tasks, and they are governed mainly by hierarchy (Huiteima et al., 2009).

Ostrom et al. (1961) introduced the concept of polycentricity in their effort to understand the activities of a diverse array of public and private agencies engaged in providing public services. Their work explained polycentric configuration in terms of many centres of decision-making that are formally independent of each other. The different centres of decision-making take each other into account in a competitive relationship, enter into various contractual and cooperative undertakings or have recourse to central mechanisms to resolve conflicts. Further, Ostrom (1992) rearticulated the concept of polycentric governance, where the focus was on self-organizing systems, where autonomous units formally independent of one another interact through the processes of cooperation, conflict, and conflict resolution. Polycentric units are independent as they have their own sets of rules, structures, and mandates. More recent debates on polycentricity took a stronger institutional perspective, referring to it as a system where governance is a repertoire of rules, norms and strategies that guide the behaviour within a given realm of policy interactions. Cole (2011) emphasised the process of different decision-making units learning from each other at different levels in disaster governance.

Taking a critical view of polycentric governance, Sovacool et al. (2017) and Sovacool (2011) present the complexity of a polycentric climate governance structure, where coordination with multiple stakeholders burdens the existing governance structure and delays decision-making. Moreover, such interactions increase the transaction costs in the least developed countries' context. Considering its limitations, van der Plank (2022) notes that nascent polycentrism can generate positive results in governance but can impose a cost on weak and small polycentric units.

However, within the disaster risk governance scholarship, Djalante (2014) and Lane and Robinson (2009) implied decentralisation as the key characteristic of polycentric governance, where participation and collaboration can improve the effectiveness and efficiency of disaster risk reduction strategies and practices. The impacts of disasters can be very localised, requiring planning and preparation sensitive to local conditions. For such governance, prompt action is a pre-requisite at the federal and local levels, allowing a sufficient level of autonomy and self-organisation of polycentric units suitable for a disaster. Moreover, polycentricity does offer a robust analytical structure for analysing complex socio-political systems (i.e., Nepal) and socio-political phenomena such as disaster governance (Aligica & Tarko, 2012).

## Polycentricity and characteristics of polycentric disaster governance

Considering these ideas, this article defines polycentricity as a combination of small, medium, and large-scale decentralised units that are interdependent for making rules, developing policies, and implementing them within a specified geographical area or level of governance. Polycentric units are interdependent because they can simultaneously influence policies and rules for the same issues, such as climate change, non-climatic disasters, protecting and conserving biodiversity, and water quality. Deliberations within one polycentric unit on an issue can influence the outcome of deliberations from another polycentric unit. Hence, they are interdependent in producing collective rules, policies, and actions. Based on the above definition and ideas discussed in section "[Polycentric governance and characteristics: conceptual arguments](#)" about monocentric and polycentric configurations, the study characterises polycentricity using three characteristics: (1) polycentric units are governed by overarching rules—general (constitutional) and domain-specific (norms to follow during the time of a disaster) rules; (2) there is a low entry, and exit cost for an organisation in a polycentric configuration; and (3) polycentric units engage in conflicts and collaboration. The polycentric characteristics will help explain how disaster governance is currently shaped in Nepal, what kind of conflictual and collaborative relationships are emerging and how future disaster governance strategies may play out.

*Characteristic 1 (polycentric units are governed by rules)* In institutionalism, rules are considered the normative preconditions for the emergence and functioning of any form of governance configuration (Ostrom et al., 1961). Elinor Ostrom (1992) discussed rules in her work on the commons and emphasised the constitutional and collective choice rules used to govern irrigation systems and forests. In the context of polycentric configuration, constitutional rules refer to the overarching set of norms or meta-constitutional assumptions that allow multiple decision-making centres to function and make decisions semi-autonomously (Morrison et al., 2017; Thiel & Moser, 2019). Such rules are meant to ensure that tendencies of monocentric configuration are counterbalanced by larger polycentric governance configuration. For instance, if the political system of a state is moving towards higher degrees of monocentricity (authoritative

command-and-control system), system-wide polycentricity can use self-correction measures and self-regulation to counterbalance it (van Zeben, 2013). Whilst the domain-specific rules refer to sector-specific rules that define the sectoral boundaries and allow the smooth functioning of day-to-day operations. For instance, water and agriculture policies influence the functioning of the agricultural growth of a country. Such domain-specific rules set a sector's mandate and overall purpose to function independently. In the case of disasters, the constitutional rules help to delegate and implement disaster-related responsibilities at different levels of governance. Moreover, domain-specific rules help set up the pre-and-post-disaster functions and responsibilities of the polycentric units.

*Characteristic 2 (low entry and exit costs and related barriers in polycentric governance)* Spontaneity is one of the essential attributes of a governance system. Spontaneity allows for the free movement of organisations and enables the development of a system based on the requirement at a particular point in time and situation. Polanyi (1951) uses spontaneous as synonymous with polycentric. Taking it forward, Ostrom (1972) defines spontaneity as a function of self-organising and self-generating tendencies occurring under specific conditions at several levels. Many times, in the case of spontaneous entry and exit of actors, decision-making is not required and happens organically based on requirements and conditions, except in cases of merit-based entry (Aligica & Tarko, 2012). Further, Aligica (2014) argues that to maintain the spontaneity of a polycentric system, the polycentric units have to unanimously maintain low transaction costs or minimise barriers to entry and exit. In the case of disaster governance, various non-governmental and governmental organisations enter the disaster governance landscape to take up special responsibilities in extraordinary situations such as an earthquake and unprecedented floods. The nature of the disaster and how they impact the local population necessitates polycentric governance mechanisms.

*Characteristic 3 (polycentric units engage in conflicts and collaborations)* In a governance system, conflictual and collaborative interactions occur due to shared or distinctive interests. Conflict, conflict resolution and collaboration in polycentric governance systems are ways that actors take each other into account in their interactions (Ostrom et al., 1961). Conflict in a governance system results from disagreements between actors over the rules and institutions to resolve a governance issue (Heikkila, 2019). Conflicts occur within specific action situations or venues and vary in duration and intensity in terms of the number of actors involved. Similarly, collaboration and conflict resolution involve an agreement where actors or decision units at different levels are no longer incentivised to engage in conflictual outcomes. Information and resources also shape conflicts and collaboration in a governance system. In a polycentric system, collaborative efforts typically fail to include all perspectives, such as those of racial and ethnic minorities, women, and lower socio-economic classes (Koehler & Koontz, 2008; Purdy, 2012). This lack of inclusion limits the information considered in decision-making, shaping conflicts and collaborations. Bednar (2011) and Christin and Hug (2012) suggest that in federal governance, the authority and scope of governments can lead to conflict, as well as opportunities to negotiate conflict. In the case of disaster governance, conflicts and collaborations are observed between different polycentric units for allocations of funds and dovetailing of efforts.

Based on the above characteristics of polycentric configurations and understanding of disaster governance, I will elaborate on how monocentric or polycentric forms of configurations shape disaster governance in Nepal. Considering the recent developments and new constitutional reforms, it will be interesting to explain and mark the changes in disaster governance at different levels.

## Methodology

### Bio-physical aspects and evolving governance of Nepal

Nepal is vulnerable to natural hazards and exposed to climate and non-climate hazards. Data shows that the frequency and intensity of hazard-induced disasters such as earthquakes, floods, cloudbursts, droughts, landslides, and wildfires reported are increasing (Aryal, 2012). Pradhan and Chauhan (2017) showed that the number of disasters between 1900 and 2005 in the three ecological zones of Nepal (mountain, hills, and plains) has increased from 22 (1900) to 3512 (2005). In addition to biophysical vulnerabilities, Nepal ranks 142 out of 189 countries on the Human Development Index (Conceição, 2019). It has experienced the continuous struggle between citizens and political leadership for improved human well-being and rights (see supplementary material).

In 2015 Nepal federalised its administrative structures and constitutional framework, and in the new structure, the municipal level has been allocated special financial and administrative decision-making power that directly affects disaster governance (Vij et al., 2020). The new federal structure is divided into seven provinces, 77 districts and 753 municipalities. Based on this structure, a new political order has emerged at the local (municipality) level. Elections at the municipality level designate political representatives—mayors (urban) and chairpersons (rural) with the support of bureaucrats transferred from the district, provincial, or national levels. The overall aim of the federalisation process is to make local governance stronger (planning and implementation) and designate more coordination roles to district level committees.

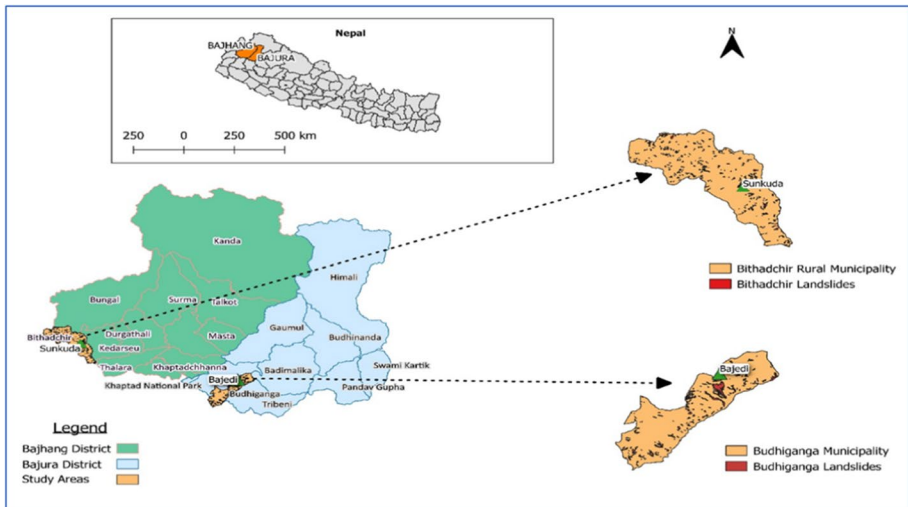
### Study sites

To understand the new local governance structure, the study was conducted in the *Bitthadchir* Rural Municipality of *Bajhang* District and the *Budhiganga* Municipality of *Bajura* District in the far west of Nepal (see Fig. 1). Apart from Kathmandu, the two sites were selected as they are affected by a complex interplay of hazards such as landslides and floods and vulnerable socio-economic backgrounds. Both the districts are located in the upper Karnali River Basin, and the impact of landslides in the study areas includes loss of lives, livelihoods, assets, destruction of agricultural land, and damage to drinking water sources and irrigation canals (Martin et al., 2021).

### Data collection

The article employs an interpretive approach and a case study method (Yin, 2009). Such a research design helps understand the respondents' perspectives and capture socio-political reality during the fieldwork. The interpretive approach allows this study to capture how respondents involved in disaster governance understand the disaster events and policy responses. Further, it helped to capture the complexities of the interplay between actors involved in disaster governance (Putnam & Banghart, 2017). The methods used for this study will also be useful in replicating research in other least developed countries to understand polycentric governance configuration and how disaster governance evolves. For the purpose of this article, two data collection strategies were employed.

*Strategy 1 (interviews)* Closed-door (confidential) interviews (n=23) were conducted between May 2019–January 2020 and between September–December 2017 in Nepal (for



**Fig. 1** Map of study sites. Source: Martin et al., 2021

details, see supplementary material, Tables 1 & 2). Two rounds of interviews were conducted to precisely capture the disaster governance in Nepal at the municipal and national levels. Although the constitutional reforms were made in 2015, elections at the municipal level were only conducted in 2017 and 2018. The interviews were conducted in a closed-door setting to build rapport and discuss politically sensitive topics, such as conflicts between federal and local structures during a disaster. The interview respondents represent different levels of government (municipality and federal) and various international and national non-governmental organizations in Nepal. The respondents were identified from the existing networks of researchers and referrals by the interviewees. They were selected based on their experience in the field of disaster planning and on-the-ground implementation. Municipal level politicians and bureaucrats from Bajura (Chairperson) and Bhajang (Mayor) districts were interviewed, providing insights on the new federal structure and its implications for disaster governance. To understand the federal structure, interviews were conducted with state officials (Ministry of Environment and Population and Ministry of Home Affairs) and non-governmental organizations such as Practical Action, Red Cross Nepal and Oxford Policy Management in Kathmandu. The majority of the interview respondents shared their experiences and knowledge of the evolution of the federal process in Nepal since 2015, particularly some of the conflicts and collaborative efforts that are taking place between different levels of governance. Other topics that were captured during the interviews include changing disaster planning and budgetary allocations, a variety of actors that provide support during the time (response and recovery) of disasters, an instance of conflicts and collaborations during the time of the disaster, and the role of provincial and federal actors in local disaster governance.

Some respondents ( $n=4$ ) were interviewed multiple times to fill gaps and capture detailed experiences about conflicts and collaborations in disaster governance. Interviews in Nepalese were translated into English, and approximately 720 min of interview data was analysed.

*Strategy 2 (documentary analysis)* All the relevant policy documents were collected from [dpnet.np](http://dpnet.np), published after 2000 pertaining to disaster governance. DPNet-Nepal is



an umbrella organisation comprising national and international agencies advocating for disaster policy reform, knowledge dissemination and disaster-related capacity building in Nepal. DPNet-Nepal has been actively making a repository of disaster plans and policies and other disaster-related documents (such as ministerial-level presentations, publications, information, education and communication materials, international and national guidelines on disasters and workshop meeting reports) pertaining to disaster governance and management. Forty-eight documents were selected and stored in a repository, updated until October 2020 (some examples are mentioned in the supplementary material, see Table 3). The policy document analysis is mainly conducted to substantiate and triangulate the arguments made by interview respondents about governance structure in Nepal, covering topics such as challenges faced by the local governance structures and actors and the constitutional and operational rules of disaster governance in Nepal.

### Data analysis

Policy documents and semi-structured interviews were coded in Atlas.ti. The data was analysed to capture the constitutional and collective rules, conflicts and collaborations between different state and non-state polycentric units. I systematically analysed the text of the policy documents and interviews to understand the rules of interaction during pre-and-post disasters. Interviews were specifically coded to capture conflicts and collaborative opportunities at different levels of governance. Each excerpt was marked and analysed from the interviews to elaborate on the conflictual and collaborative situations during-and-post-disaster. The interviews conducted at the local level (in *Bitthadchir* Rural Municipality and the *Budhiganga* Municipality) were coded and analysed for experiences shared by local politicians and bureaucrats, explaining how they respond during an event of a disaster, who is their first point of contact? And what are the fallback options if they do not get desired help. The discussion with the interviewees entails how the federal bureaucracy and the local politicians get involved in a conflictual or collaborative situation.

The policy documents were analysed to explain conflicts/conflicts of interest between different paradigms of disaster governance in Nepal. For instance, certain documents developed by the Ministry of Home Affairs still emphasise disaster response and recovery. However, a policy document developed with the support of an international donor agency will focus on disaster risk reduction and climate change adaptation. These questions were supported by the overarching question of how disaster governance strategies are changing at different levels with the new federalisation process. The discussion around this question helped us characterise why specific organisations entered the disaster governance domain and others exited. Further, the interviews also captured if new and old actors were entering or exiting the disaster governance configuration.

### Polycentricity in Nepal's disaster governance

The following sub-sections will discuss the three characteristics of polycentric governance and show how the nature of governance (monocentric and polycentric) shapes disaster governance at different levels in Nepal.

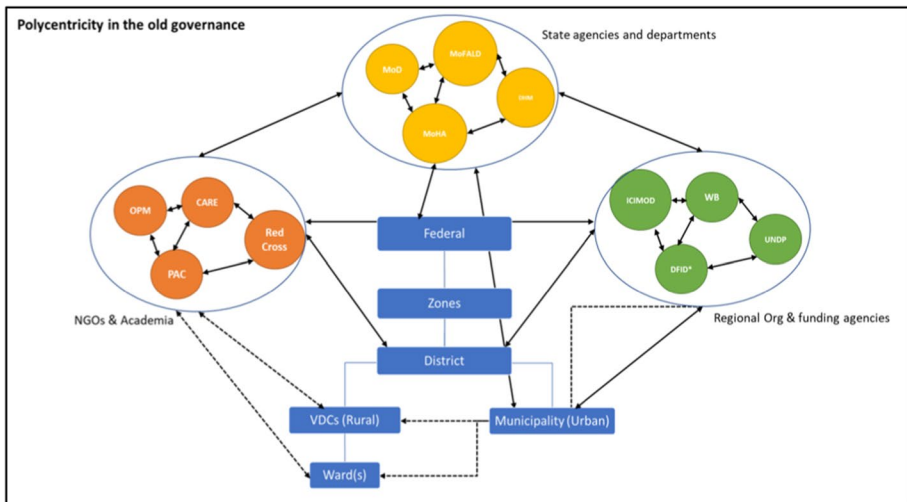
## New constitutional and collective choice rules are shaping disaster governance in Nepal

With the evolving governance in Nepal, the rules for governing disasters are also changing. This article focuses on the two types of rules—constitutional and collective choice rules. First, let us discuss the constitutional rules.

One of our respondents at the *Bitthadchir* Rural Municipality said:

Although the Ministry of Home Affairs in Kathmandu (federal government) has come up with the Disaster Risk Reduction and Management (DRR&M) Act in 2017, the provincial governments are preparing their disaster management plans and will pass them in their respective legislative assemblies (I9, 2019–20).

The respondent argues that this policy effort will allow them to prepare context-specific plans to channel the financial efforts and human capacity in governing disasters in their region. Provincial-level DRR&M plans are contextualised and valuable for the municipalities (rural and urban, see Fig. 2) as provincial-level bureaucracy and politicians are the first points of contact for municipality level bureaucrats and politicians. This process of setting up the new DRR&M policy at the provincial level and the dependence on the local governance structure (rural and urban municipalities) show the emergence of the new rule (constitutional) of governance in Nepal. The new constitutional rules depict a shift from monocentricity to polycentricity—as new polycentric units (provincial and municipal



**Fig. 2** Polycentric disaster governance configuration in Nepal pre-2015. ----Weak connections between different polycentric agencies and governance structure. — Strong connections between different polycentric agencies and governance structure. Diluting structure. MoHA, Ministry of Home Affairs; MoD, Ministry of Defense; MoFALD, Ministry of Federal Affairs & General Administration; DHM, Department of Hydrology and meteorology; OPM, Oxford Policy Management; PAC, Practical Action Consulting; ICIMOD, International Center for Integrated Mountain Development; UK FO (previously DFID) , United Kingdom Foreign, Commonwealth & Development Office; UNDP, United Nations Development Programme; WB, World Bank. *Note:* Different polycentric units (agencies) are only reflecting the variety of organisations involved at different levels of governance. There are many more organisations involved in disaster governance networks

actors) represent the change in the policy-making process, governing from the federal to the provincial and municipal levels.

Further, a respondent (public officer) at the *Bitthadchir* Rural Municipality (I8, 2019–20) explained that in the new governance structure, the elected representative at the municipal level and the bureaucracy prepare the development and disaster plans for a municipality. They also take planning inputs from the wards (comprising a few villages). As the municipal structure have the financial power, they decide the purpose for budgetary allocation, specific to their concerning disaster, whether it is floods, landslides, or drought. The new constitutional rule of providing financial and administrative powers to the municipal structure assists in formulating a domain-specific rule for disaster governance. Our respondents (bureaucrats) in the *Bitthadchir* Rural Municipality and the *Budhiganga* Municipality confirmed that they were preparing specific disaster plans in their respective municipalities.

A local politician from the *Budhiganga* Municipality said, following the example of Palungtar municipality in the Gorkha district, they are also planning to develop their own multi-hazard disaster risk reduction plans, and given an opportunity would like to create a local (municipality) emergency operations centre (LEOC) in the future (I1, 2019–20).

The newly elected leaders and officials appointed in these municipalities are working toward meeting the expectation of the citizens, especially in reducing the risk of landslides and floods. Considering that the same respondent re-emphasised that they as a collective unit want to focus on disaster governance during their time in office. These nuances and efforts represent the emergence of new domain-specific rules and their influence on the municipal level disaster governance in the two municipalities.

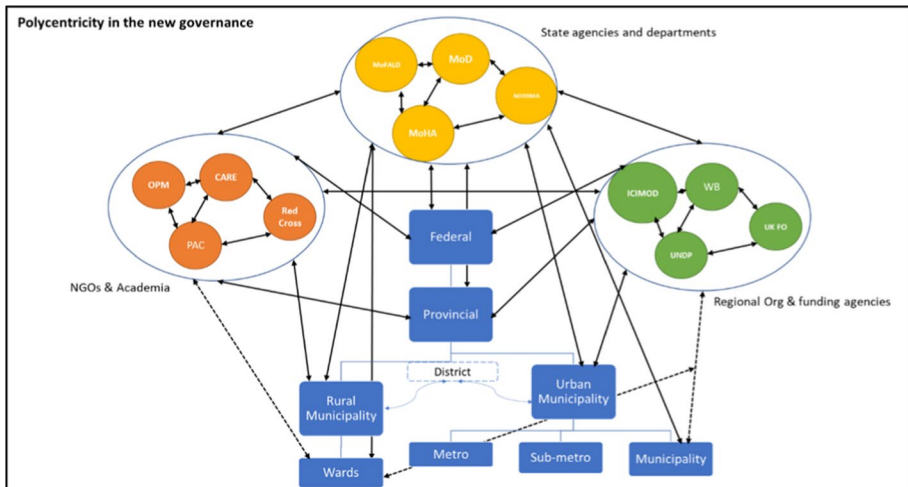
### **Entry and exit cost and barriers for organisations in polycentric governance**

At the municipal level, there are very few international and bilateral agencies with influence on government-led disaster efforts. For instance, our respondents (I5, 2019; I2, 2019) in *Bitthadchir* municipality mentioned that there is only UNICEF (international NGO) working on children's and women's development and touching upon response and recovery in post-disaster situations. Whilst, in *Budhiganga* municipality, there are no international agencies currently involved in disaster-related projects or programmes. Moreover, the respondents (representatives from INGOs) mentioned that at the local level, penetration of organisations is minimal due to barriers such as continuous changes in the federalisation process since the early 1990s and due to the limited access to the isolated areas of the far-western region of Nepal (see Figs. 2 and 3). It clearly shows that the horizontal expansion in the polycentric governance system of Nepal is minimal, moving vertically in the governance level—from the national to the local level.

Further, a respondent said:

The funding for the preparation of local adaptation plans of action (LAPAs) was halted as the new federalisation process in Nepal has given more financial and administrative decision-making power to the local level governance (I14, 2017).

LAPAs in Nepal are also responsible for climate-induced disaster planning and implementation. The same respondent further mentioned that entry and exit barriers in disaster governance restrict horizontal expansion in Nepal. The earlier policy process of integrating local adaptation needs into national development and disaster plans and vice-versa had to change under the new constitutional amendments, as municipal level



**Fig. 3** Polycentric disaster governance configuration in Nepal post-2015\*<sup>§</sup>. ---- Weak connections between different polycentric agencies and governance structure. — Strong connections between different polycentric agencies and governance structure. <sup>§</sup> Diluting structure. MoHA, Ministry of Home Affairs; MoD, Ministry of Defense; MoFALD, Ministry of Federal Affairs & General Administration; DHM, Department of Hydrology and meteorology; OPM, Oxford Policy Management; PAC, Practical Action Consulting; ICIMOD, International Center for Integrated Mountain Development; UK FO (previously DFID), United Kingdom Foreign, Commonwealth & Development Office; UNDP, United Nations Development Programme; WB, World Bank. *Note:* Different polycentric units (agencies) are only reflecting the variety of organisations involved at different levels of governance. There are many more organisations involved in disaster governance networks. \* In the new structure, the district level government has been given a coordination role. Earlier they were responsible for the entire district's development (planning and development). Village Development Committees (VDCs) are completely dissolved in the new structure. VDCs are replaced by rural and urban municipalities. 14 administrative zones are replaced by 7 Provinces. In the new federal structure, there are six metropolitan cities, 11 sub-metropolitan cities and 276 urban municipalities. This categorization is based on the population size and existing infrastructure. <sup>§</sup> A new political structure has been created at the municipality level. This allows for a local representative to be elected and stay close to the communities. In the evolving federalization process, more financial, planning, and administrative powers are delegated to the municipal government, depleting the role of district officials

bureaucracy and political structure are responsible for budgetary allocations and policy-making and planning. NGOs and INGOs emphasising climate change also focus on disaster governance, and their entry and exit depend on the funding patterns and changes in the country's overall governance.

In the last 2 decades, there has been an increase in the number of national and international non-governmental organisations (NGOs) in Nepal focusing specifically on disasters.

A respondent said:

International NGOs such as Practical Action and CARE Nepal started to focus on a community-based 'human infrastructure development' approach (I11, 2019–20).

From the early 2000s, NGOs and INGOs started focusing on policy advocacy around climate change and disaster risk reduction, possibly amalgamating the two themes. The Association of International (AIN) NGOs was also established in 1996 as an umbrella organization to foster harmony and promote cooperation between organizations. Further, at the national level, the horizontal expansion, the number of polycentric units (organizations),

and interactions (weak [dotted lines] and strong [bold lines] connections) between them have increased after the 2015 Earthquake.

Further, one of our respondents said:

Due to the increase in the ODA funding for disaster support, various national and international organizations have entered the disaster governance configuration to support post-disaster response and relief (I23, 2017).

The interaction between provincial and district level bureaucracy and non-state agencies (international and national NGOs and donor agencies) increased after the 2015 constitutional amendments and the Gorkha earthquake. Hopefully, in the next decade, there will be opportunities for closer collaborations between non-state and state actors at municipal level, suggesting both vertical and horizontal expansion.

### **Conflicts and collaborations at different levels of a polycentric configuration**

In the last 2 decades, disaster governance in Nepal has evolved from response and recovery to disaster risk reduction and management to integrated climate change adaptation and disaster risk reduction paradigms (for more details, see Vij et al., 2020). Each paradigm continues to exist in a layering fashion with a wide variety of actors, policy goals and instruments (Vij et al., 2018), indicating a shift towards polycentricity from the early 1990s. At the federal level in Nepal, the Ministry of Home Affairs (MoHA) is responsible for disaster governance due to its overpowering presence and linkages with the military and police; response and recovery remains a major paradigm in Nepal. Based on these paradigms, there is a continuous struggle between different actors involved in disaster governance, especially for fund allocation and building human resources capacity. MoHA and Nepal Red Cross Society continue to support disaster response and recovery efforts, whilst other NGOs and INGOs aim to build the capacity of the local communities for disaster risk reduction.

After the 2015 major Gorkha earthquake in Nepal, there has been a shift in the framing of Nepal disaster governance towards disaster risk reduction and preparatory efforts. The policy documents such as the National Policy for Disaster Risk Reduction (NPDRR, 2018), Disaster Risk Reduction and Management (DRR&M, 2017) Act, and the 14th & 15th Five Year Plans suggest that this shift in focus is due to high levels of fatalities and heavy infrastructure losses. Further, our respondents (I21, 2017; I24, 2019) confirmed that this focus is also due to the partial failure of the previous policy efforts to develop the adaptive capacity of vulnerable communities.

Further, the DRR&M Act (2017) is to be implemented by the independent DRR&M authority, which will function at different levels of government. The MoHA is the nodal agency for governing disasters in Nepal and is also responsible for the constitution of the authority. However, there has been a long delay in the formulation of the authority (since 2017), and only in January 2020, the authority's Chief Executive Officer was appointed.

One of the respondents said:

MoHA was reluctant and purposefully delaying to create DRR&M authority, as it was afraid to lose its authority and financial control over budget used for disaster issues in Nepal (I16, 2019).

The respondent elaborated that there was a conflict between various non-state agencies (NGOs and INGOs) and MoHA regarding the appointment of the Chief Executive Officer,

who may not be appointed within the MoHA but a seasoned disaster risk reduction professional with on-the-ground experience in disaster governance. Currently, the DRR&M authority is making slow progress towards a fully functional and federalized disaster governance structure. There is a lack of coordination between different levels of government, and the new officials lack the capacity, knowledge, and resources to design mechanisms of disaster governance.

With the new constitutional amendments, there is a lack of clarity, and a political and bureaucratic struggle is emerging between the actors at different levels. Figures 2 and 3 show the new and the old political and bureaucratic structures and how conflicts are emerging at different levels of governance. Nepal has moved away from Village Development Committees to Rural and Urban (municipality, sub-metro, and metro) municipalities, and District Development Committee (DDC) have been replaced by District Coordination Committee (DCC). A respondent (16, 2019–20) from the *Bitthadchir* Rural Municipality explained the conflict and collaboration during a disaster event. In the new structure, the DCC (at the provincial level) have less power compared to DDCs (provincial) of the past, allowing more financial and administrative power to rural and urban municipalities (local level). The district-level officials continue to work at their respective offices and do not seem to shed their power.

Although the new constitution has dissolved the district level of governance, bureaucracy continues to function. District level bureaucrats are to be transferred to provincial or municipal levels, but opposition is shown towards this change by the district officials. The bureaucratic actors at the districts and the newly formed municipalities (rural and urban) continue to compete for authority, influencing disaster governance. The respondent further mentioned that during a recent tunnel accident in *Bitthadchir* municipality, where construction workers got stuck under the rubble of the tunnel, the local disaster management committees did not have the resources to help the victims. The municipal structure did not have the authority to mobilize the army and police forces for rescue efforts, and they were not directly connected with the federal structure in Kathmandu. Under the Nepali Constitution (2015), local level municipalities have autonomy, funds and decision-making power to address their disaster governance issues. Yet, they are not mandated to deploy an army and the police in the event of a disaster, which sits with the Chief District Officer; hierarchically, this officer ranks lower in the federal structure than the local municipal chair/mayor. This results in competing levels of authority, a lack of willingness to cooperate, and contested decision-making in relation to local recovery and response needs.

However, the local politician reached out to the Chief District Officer in the *Bajhang* district for support during the tunnel disaster, considering that these officials still have the influence and bureaucratic clout to get an immediate response unit on the ground. This incident shows spontaneity and collaboration wrapped in the conflict between the bureaucrats and local political leadership. In return, the Chief District Officer obliged with the support due to the past experiences of unusual delays during a disaster event, the need to keep their role relevant, and to meet the expectations and relationships built with the local communities. The instance also exemplifies the self-organization tendencies that help generate options to cater to disaster governance. There are visible conflicts between the local politicians and the bureaucracy at the municipal level.

One of the respondents from the *Budhiganga* Municipality said:

The newly elected political leaders at the municipality level find it difficult to work with the bureaucrats. This is because of two reasons. First, the political leaders are very inexperienced in functioning as administrators and the system at the local level

is still not established. There is a lack of clarity in terms of roles and responsibilities. Second, the bureaucrats have a lot of experience at the district or central level and are aware of rules and loopholes in governance. Some newly elected politicians are very enthusiastic and have high expectations from the community to make changes quickly. When political leaders and bureaucrats interact to discuss issues, their expectations and way of functioning do not match, leading to conflicts (14, 2019–20).

The above incidents and responses from the respondents have corroborated that constitutional reforms and emerging structures in Nepal influence disaster governance. Although the role of district-level officials in the new federal structure is to coordinate between federal and municipal levels of governance, they are still very powerful, and municipalities are highly dependent on district level bureaucrats. The capacity is low, and infrastructure is so poor that these officials depend on district-level infrastructure, knowledge, expertise, and services during the event of a disaster. Further, the access of local politicians to provincial and federal level governance is limited as they are still finding their ground in the political space of Nepal.

Various non-state organizations have collaborated with federal departments and ministries in the last 2 decades to work towards effective disaster governance in Nepal. Policy document analysis suggests that donor and bilateral agencies have funded technical and capacity building efforts, such as the Disaster Prevention Technical Centre (DPTC) at the Ministry of Water Resources (MoWR). Further, it has been noted that there is an increase in the official development assistance expenditure by 72% between 2014 (US\$ 884 million) and 2015 (US\$ 1225 million) in Nepal, pertaining to earthquake response, relief, reconstruction, and risk reduction efforts. After the 2015 Gorkha earthquake, official development assistance has shifted from climate change adaptation to disaster risk reduction and response and recovery efforts.

One of our respondents said:

Non-state actors such as Red Cross Nepal are close partners to MoHA for disaster response and recovery. Red Cross provides staff to District Emergency Operating Centres (DEOC) and Local Emergency Operating Centres (LEOC) to support district-level officials during the time of disaster (119, 2019).

Further, the respondent mentioned that Red Cross is highly efficient and well-oiled machinery of volunteers for post-disaster work but has little experience in disaster risk reduction and building resilience in vulnerable communities. The collaboration is also visible in the new DRR&M Act (2017), where Red Cross has been mentioned as a nodal agency for various disaster response and recovery efforts. This is also because the disaster governance structure of the Red Cross is similar to MoHA's emergency operation centres. The progress in collaborative disaster governance efforts can be attributed to the international humanitarian and development organizations that have challenged and reconfigured Nepal's policy towards disaster through collaboration.

## **What can polycentricity offer to disaster governance?**

Based on the above empirical insights and conceptual deliberation on polycentric governance configurations, this section will reflect on critical insights emerging from this research. This article has taken a step towards understanding polycentricity in Nepal's disaster governance regime. It also makes a case that polycentric governance has been

diffusing in Nepal's disaster governance, with nuances suggesting that there are almost inevitable gaps in the polycentric governance system. In the following paragraphs, let us reflect on the two nuances and knowledge gaps to see how they influence the larger disaster governance processes.

### **Conflicts and conflicts of interest**

At the municipal (local) level, our findings suggest subtle conflicts or conflicts of interest between the newly elected political representatives and bureaucracy. Such conflicts are mainly due to the citizens' expectations from their newly elected political leadership and the enthusiasm and drive of the local leaders to bring transformative changes at the municipal level. The conflicts can be related to evolving administrative traditions in Nepal. Nepal has evolved from a monarchy to a democracy and now to a further decentralized system of governance. Nepal has been experiencing changes in the governance structure, rules, and institutions in the last 3 decades, and most bureaucrats have been part of this change. Interviews with the local politicians confirmed that the seasoned bureaucrats are aware of the nuts and bolts of governance and make attempts to control and drive the system, whilst the newly elected municipal politicians need to be more seasoned and are on a learning trajectory to govern their constituencies. This continuous conflict between the knowledge of bureaucrats and the aspiration of the newly elected officials is prominent and is hindering the changes required for efficient disaster governance. Although, the defined roles of political leadership and bureaucracy are designed to avoid tensions between the two sets of authority—with the former responsible for designing policies and the latter for implementing the policies (Nyadera & Islam, 2020). However, in reality, substantial conflicts and conflicts of interest arise due to power distribution and power distance between politicians and bureaucracy. One of the defining reasons for such tensions is the level of dependence and autonomy to the bureaucratic machinery in democratic systems, followed by blurriness in policymaking and policy implementation (Svara, 2001).

Furthermore, with the strengthening of local political leadership in Nepal, the bureaucratic elites are becoming defensive about possibly losing their economic security and social status (Dasandi & Esteve, 2017; Hirschmann, 1999). The conflicts are escalating as the bureaucracy lacks genuine civic engagement. Even though consultation and dialogue with disaster stakeholders have become imperative in South Asia, the bureaucrats have limited reorientation to include the public in policymaking processes (Sarker, 2009). Moreover, organisations in different sectors have not yet realised that sharing of information, resources, activities, and capabilities are to be mobilised collectively for improved disaster governance in complex governance arrangements (Bryson et al., 2006).

Moreover, we have observed a shift of different disaster governance paradigms (Vij et al., 2020) or the changing nature of the disaster governance discourse at the global level from reaction to crisis management to proactive crisis preparation. Such sense of a phase shift in the combined global-national-local disaster governance regime is shaping a more complex regime in Nepal (Jensen et al., 2015), especially with the local federalising process within the country.



## Entry and exit of polycentric units

This article suggests that in post-2015 Nepal, there is an increase in polycentric configuration at the national and the provincial level, whilst monocentric characteristics are still noticeable at the municipal (local) level in the two study municipalities. At the national level, the horizontal expansion of polycentric units is visible, with a growing number of INGOs and other agencies working towards disaster governance after the 2015 amendments in the constitution. In contrast, even after the federalisation process, the horizontal expansion at the local level in the study areas is still limited. Vertical and horizontal expansion for disaster governance can take more time to get realised at the municipal level, especially when barriers exist, such as geographical isolation and lack of access. Nepal's far-western region is isolated and lacks accessibility via roads.

Further, polycentric governance configuration characteristics vary at different levels of governance in Nepal. For instance, it is easy for non-state polycentric units such as NGOs and INGOs to enter and exit the disaster domain, while it is difficult for state units such as ministries and departments. For instance, the Nepal Red Cross Society, a voluntary organisation, primarily emphasises response and recovery, with limited accentuation on disaster risk reduction. They enter and exit disaster-prone areas based on immediate needs without building community resilience, fittingly following their prompt response and recovery mandate. It is not to undermine the efforts of the Nepal Red Cross but to understand that its system is built on volunteers inspired by a private association and personal motivation; the accountability for risk reduction and community rapport is limited (Schlögel, 1974). Over-reliance on Red Cross has weakened Nepal's risk reduction and adaptation, relying primarily on response and recovery mechanisms for the last 4 decades. The efforts of the Red Cross and other INGOs also indicate that the global disaster governance regimes have not sufficiently focused on-the-ground disaster risk reduction efforts.

## Key knowledge gaps and future research

This article presents certain underlying elements of how and under what conditions a polycentric disaster governance system has evolved in Nepal. However, there are limited studies in the global South explaining the factors that influence the changes in disaster governance. Questions relating to power asymmetries and administrative/bureaucratic traditions in disasters are still to be examined to see how they influence the spread of polycentric governance (Carlisle & Gruby, 2019; Morrison et al., 2019; Vij et al., 2019). Further, it still needs to be determined what the sectoral spill-over effects on disaster governance are. For instance, how climate change and water security domains influence disaster governance in Nepal. Simply put, how do climate change governance rules influence disaster governance, especially financial support and capacity-building efforts? Further, polycentric governance scholarship needs to investigate under what circumstances polycentricity can lead to expected or desired outcomes in an evolving but complex democracy. Scholars can use comparative studies to understand successful and not-so-successful polycentric governance configurations to explain what works, where and how. Concepts such as multilevel governance (Hooghe & Marks, 2001), adaptive governance (Djalante et al., 2011), collaborative governance (Ansell & Gash, 2008) and network governance (Koppenjan & Klijn, 2004) may prove helpful in understanding the success of polycentric governance configurations.

Lastly, the study calls for methodological advancement to study polycentric governance configuration in the least developed countries such as Nepal. Various studies with clear methodology have explained the polycentric governance configurations in different contexts and their relative advantages over a monocentric governance system. However, there is limited polycentric governance scholarship on how informal rules and rules of practice in the least developed countries or emerging economies work. Similarly, Weible and Heikkilä (2017) emphasise the importance of studying informal rules. They suggest that there are advanced methods to study formal rules, such as semiautomated tools and institutional grammar tools. However, there are no similar tools or methods to study informal rules. It might be valuable to put effort into comparative case study analysis to understand how informal rules work in least developed countries' contexts and how these sets of rules can challenge the constitutional rules within a polycentric governance configuration.

Focusing on informality further, the study calls for further research on the constellation of informal actors and organisations that play a critical role during the disaster. The role of neighbours, youth clubs, women's self-help groups, and religious groups in providing immediate response and recovery support is essential to advance the scholarship of polycentric governance. Hsueh (2019) and Panday et al. (2021) position the value of informal bonds and social capital during the Izu-Oshima typhoon in Japan and the 2015 Gorkha Earthquake in Nepal. Hsueh (2019) showed how neighbours and friends utilised the flow of information to find material and psychological support. Similarly, in Nepal, bonding and bridging social capital among residents of *Sindhupalchok* and *Gorkha* districts reduced barriers to collective action and helped efforts to rescue and support affected individuals (Panday et al., 2021).

## Final remarks

The article uses three characteristics of polycentric governance configuration to explain the disaster governance configuration at different levels: (1) polycentric units are governed by overarching rules—general (constitutional) and domain-specific (norms to follow during the time of a disaster) rules; (2) polycentric units are involved in conflicts and collaboration; and (3) there is a low entry and exit cost for an organisation in a polycentric configuration. The three characteristics are a good starting point to characterise the expansion of polycentric governance configuration from a monocentric system, as explained in the case of disaster governance, along with the federalisation process in Nepal.

Further, the concept of polycentric governance and related analysis position our article to showcase the nature of conflicts, collaborations, and nuances that challenges and endures disaster governance in Nepal. The federalisation process is responsible for changing the role of the district level bureaucracy, giving more power to the newly elected politicians at the municipal level. Nevertheless, the municipality leadership and officials continue to depend on district-level officials and resources during a disaster event due to a lack of capacity and knowledge in managing and governing disaster situations. The 2015 Constitution has provided the federal structure to the people of Nepal but has created uncertainty and challenged the existing disaster governance structures. Rayamajhee and Paniagua (2021) argue that polycentric governance offers a better understanding of nested externalities such as climate change and the COVID-19 pandemic. For such nested externalities, we need solutions emerging from different levels of governance instead of a single governing authority with rigid assumptions, leading

to social unrest and non-compliance from the citizens. Polycentric governance configurations can offer heterogeneous and nested multi-level solutions, which might overlap with each other but will motivate social and political behaviour in incentivising cooperation and collective action.

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**Data availability** The data that support the findings of this study are available from the corresponding author, upon reasonable request.

## Declarations

**Conflict of interest** No potential conflict of interest was reported.

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