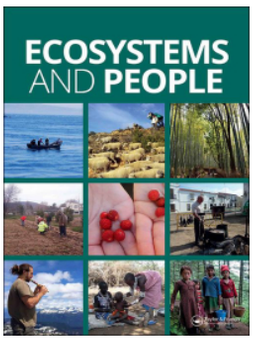

Ecosystems and People

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/tbsm22

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To cite this article: Anita Shrestha, Sikha Karki, Upama Koju, Tek Maraseni, Ambika P. Gautam, Tim Cadman & Sony Baral (2022) Stakeholder perspectives on the effectiveness of governance in red panda conservation programmes in Nepal: a comparative analysis, Ecosystems and People, 18:1, 547-565, DOI: 10.1080/26395916.2022.2121762

To link to this article: https://doi.org/10.1080/26395916.2022.2121762

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ECOSYSTEMS AND PEOPLE
2022, VOL. 18, NO. 1, 547–565
https://doi.org/10.1080/26395916.2022.2121762

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Stakeholder perspectives on the effectiveness of governance in red panda conservation programmes in Nepal: a comparative analysis

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ABSTRACT

This paper investigates the views of multi-stakeholders on the governance quality of existing forest management strategies for red panda (*Ailurus fulgens*) protection in Nepal, focusing on forest governance in general, red panda conservation programmes and natural habitat protection in particular. The study deployed two surveys in August and September 2020. The first survey was conducted online for the stakeholders with internet access; for those without, it was conducted over the phone. While the results reveal almost similar perspectives among the stakeholders regarding the effectiveness of the red panda management approaches, they differ significantly between the online survey and telephonic survey, in terms of the relative scores given to these initiatives. In depth, follow-up interviews revealed that marginalised groups had little access to income generation from conservation activities and few capacity-building opportunities. These findings indicate that while management strategies for red panda conservation were generally considered effective by online survey participants which are generally more privileged, this is less effective for marginalised people. Local people, who are typically resource-poor and reliant on the forest, continue to endure inequitable resource distribution and benefit sharing. Consequently, greater attention should be paid to balancing the conservation needs and basic needs of forest-dependent communities through capacity building, income generation and alternative sources of livelihood.

ARTICLE HISTORY
Received 20 September 2021
Accepted 25 August 2022

EDITED BY
Graciela Rusch

KEYWORDS
Forest governance; red panda conservation; stakeholders; resources; livelihood; Nepal

1. Introduction

The red panda (*Ailurus fulgens*) is an endangered species distributed in five Asian countries -Nepal, India, Myanmar, Bhutan, and China (Glatston et al. 2015). Nepal is home to the Himalayan red panda (Hu et al. 2020) whose population in the wild in 2010 ranged from 237 to 1,061 individuals (Jnawali et al. 2012). Its presence has been documented in 24 out of 77 districts in Nepal within a potential habitat of 23,977 km^2 (Bista et al. 2016). Nearly 70% of the red panda's habitat remains outside protected areas, with most being in government or community-managed forests (GoN 2018). The red panda has social, economic, and ecological significance as flagship species (GoN 2018). Despite this, it faces numerous threats including habitat destruction, forest fragmentation, poor conservation awareness, poaching, human disturbance, forest fire, and extreme climate events (Glatston et al. 2015; GoN 2018; Karki et al. 2021). This stresses the need for more effective conservation programmes to ensure the survival and sustenance of this endangered species.

red panda conservation programmes generally include conservation of the species, forest management, and protection of its habitat. Stakeholders and the local public play a pivotal role in sustainably managing natural resources like forests (Daniels and Walker 2001). As recognised by the Forest Act (1993), forests in Nepal are managed under five national management regimes: government forests, community forests (CFs), religious forests, protected forests, and leasehold forests (HMGN 1993). Thus, stakeholders in forest management, and red panda conservation range from government, non-governmental organisations (NGOs), universities, and research institutions, community forest users' groups (CFUGs), herders, Forest Guardians, and marginalised groups to the private sectors. This diverse range of stakeholders has various demands, needs, and priorities in relation to forest management and use.

Not all stakeholders have equal access to the forest resources and associated benefits. Marginalised groups, for example, are those groups of people whose opinions are either ignored or not heard by local elites, and have no effective participation or scarce representation in

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/26395916.2022.2121762.

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decision-making often based on their ethnicity, age, gender, and occupation (Gauli and Rishi 2004; Larson et al. 2007; Colfer 2011; Khatri et al. 2018). In Nepal women, Dalits, Indigenous People (IP), and Madhesi fall into the marginalized category (Mcdougall et al. 2013b; Bishwakarma 2017; Crawford and Morrison 2021; Lin and Kaewkhunok 2021). However, stakeholders like the Forest Guardians receive capacity building benefits from the programmes and also get more access to resources (Williams et al. 2011) as they are paid to undertake forest patrols to discourage illegal activities including logging and poaching. Herders also get capacity building and resources benefit from these programmes in terms of animal husbandry training, fodder plantation training, and material support.

Attention to the capacity building and resources benefit should be taken into account as local interest in participation in all conservation activities may be affected if there are competing demands on community members' limited time (Ribeiro et al. 2020). According to the United Nations Environment Programme (UNEP) (Abaza et al. 2002), capacity building is a short term activity that has a long-term impact on humans or society and does not necessitate continuing investment to maintain the welfare level in the communities supported by the program. It entails assisting individuals, groups, and communities in leveraging their expertise, resources, and geographic advantages; it also means the process of honing one's ability to act to mobilize or convert capital (human, social, economic, and natural capital) to achieve desired objectives (Liou 2004; Simmons et al. 2011; Pujo et al. 2018). Forest governance is increasingly understood as a multi-stakeholder process and responsibility, which operates at numerous administrative and policy levels while supporting the diverse perceptions, interests, and ambitions of stakeholders (Klaver 2009). It can amplify the positive effects of other development instruments (for example, capacity building, financial investments and technological advancements), making those instruments more effective in enhancing forest communities' economic and social performance (Torres-Rojo et al. 2019). This enables rural communities to make informed judgments regarding the importance of forest governance, red panda conservation programmes, and natural habitat protection for forests and community livelihoods when the capacity building of all multi-stakeholders is being considered.

Forest governance involves the process, policies, institutional, and legislative arrangements (Van Bodegom et al. 2012) around forest management to ensure that forests are sustainably managed (Cadman 2011). Good governance is effective and legitimate structures, and processes for interaction between stakeholders such as governments, private, and corporate landholders, NGOs, indigenous peoples, local communities, and civil society (Lockwood 2010; Breakey et al. 2017). Ensuring good governance requires that stakeholders are provided with a chance of being heard, expressing views, and influencing decisions (Secco et al. 2014). Stakeholders require a more deliberative and collaborative approach (Stevance et al. 2020). A multi-level and multi-tier approach provides an opportunity for major stakeholder groups to identify what they feel is needed to ensure good governance (IGES 2016). Exploring the perception of stakeholders assists in addressing their opinions and actions related to natural resources management, including forests (Kearney et al. 1999). It further assists in evaluating the performance of conservation interventions, environmental governance, and management and eventually guide the formulation of better policies ensuring sustainable outcomes for the protection of biodiversity as well as the well-being of local people (Bennett 2016; Bennett et al. 2019; Abukari and Mwalyosi 2020).

The improvement of forest governance and management is crucially important in red panda conservation (Paudel 2018) as well as the management of loss and degradation of forest stemming from rising demand for food, fuel, and prices (Mohanty and Sahu 2012). It is becoming increasingly apparent that governance and policy formation must be more inclusive, based on participatory processes and collaboration among various stakeholders and actors (Shackleton et al. 2019). Stakeholder engagement and inclusive decision-making are critical to sustainable landscape management (Mekuria et al. 2021). The prevention of species decline and habitat degradation is possible if conservation actions embrace socio-ecological models and associated methods to achieve wildlife conservation through greater participation of the public and reflection of their interests (Jacobson et al. 2010; Decker et al. 2014). Conservation can be improved by gaining a greater grasp of the human aspects of environmental challenges. Sociocultural information is crucial to informing current and future wildlife conservation decisions. However, the inclusion of social science perspective in the analysis of governance is limited and uneven. Also, there is inadequate knowledge of the scope of conservation social sciences, as well as uncertainty about their purpose (Bennett et al. 2017; Manfredo et al. 2021).

In Nepal, the survival of the majority of people in the red panda zone is dependent on forest resources. The initiation of CF in Nepal has led to discussion and practice of good governance, sustainable forest management (SFM), and benefit-sharing mechanisms

by foresters, wildlife conservators, and local people and communities (Poudyal et al. 2020a, 2020b). Community-based red panda conservation programmes have been effective in increasing red panda occupancy, the decline in poaching and illegal trade, and institutionalization. Most importantly, it has resulted in improved perception and awareness of communities and provided these communities with sustainable livelihood options such as ecotourism, organic farming, and value-chain improvement (Bista 2018; Sherpa et al. 2022). However, there is still a scarcity of data on landscape-level issues that are critical for planning and implementing conservation programmes, such as the identification of key habitats, bottlenecks, potential corridors, people's perceptions, and socioeconomic status (Sherpa et al. 2022).

The biological aspects of the red panda have been explored by several scholars (Bista et al. 2017; Thapa et al. 2018, 2020a; Glatston and Leus 2020; Wei et al. 2022). Nevertheless, stakeholders' perception of forest management policies and practices and the socio-economic implications of conservation from a governance perspective is East studied. Most of the studies have focused on the effectiveness of projects and programmes in terms of the red panda and only very few have looked at the social aspects of the communities, projects, programmes and management of red panda conservation. Thus, to address these issues and improve governance in the wildlife sector, especially red panda conservation, this study explores the opinions of multi-stakeholders on the governance quality of existing forest management strategies for red panda conservation in Nepal.

The scholarly attention on institutional quality has intensified as a result of the "government to governance transition" inherent in current global environmental politics. The majority of research has focused on governance arrangements, which refers to a set of specific characteristics that influence "the interaction between multiple actors pursuing similar goals" (Koenig-Archibugi 2006). These arrangements encompass equality, accountability, behaviour modification, decision-making, deliberation, dispute resolution, implementation, inclusiveness, interest representation, participation, transparency, resources (or capacity), and problem solving. Although there are now a plethora of governance systems, uniform rules and standards remained elusive (Whitman 2005; Bebchuk and Hamdani 2008). There existed no benchmarks against which competing programmes can be measured and compared to assure the institutional quality of governance (rather than operational performance) for initiatives operating in the sustainable development policy arena. Poor governance, on the other hand, can drive up expenses and have a negative impact, such as a credit rating downgrade (Ashbaugh-Skaife et al. 2006). Recent research on global governance and its relationship to sustainable development and natural resource management (forestry) has led to an analytical framework that combines these previously disparate arrangements around the two most important features of any governance system: structure and process (Cadman 2011).

This study applies the analytical hierarchical framework of principles, criteria, and indicators. The concept of a governance framework applied in this research has been applied to various national and global level studies (Lammerts Van Beuren and Blom 1997; Cadman and Maraseni 2012, 2013; Cadman et al. 2015, 2016, 2017; Maraseni et al. 2019). Similarly, it has been effectively applied in a REDD+ programme in Nepal and Papua New Guinea. REDD+ quality of governance was developed along with its standards for the mechanism (Cadman et al. 2017). Likewise, the governance standard was used in Nepal by Griffith University and the University of Southern Queensland, Australia for developing a CF governance framework using a hierarchically consistent framework of principles, criteria, and indicators (PC&I) (GU & USQ 2019).

The approach to analyzing governance adopted here is novel, as it has directly engaged with communities and sought their perspectives on how the red panda project impacts habitat protection and forest management and provides feedback from the stakeholders themselves, as well as an assessment. The innovation in this paper relates to the assessment of institutional performance, by focusing on an evaluation of governance performance, from a range of environmental policy instruments (timber certification, forest governance, REDD+, Climate Change, etc.), as a measurement of legitimacy. This is probably the first time that a wildlife conservation initiative has been subjected to such a review. Conservation programmes cannot be sustained without the support and participation of the local community (Sherpa et al. 2022). There are laws (Mofe 2019) that specifically address the conservation of the red panda. However, enforcement of these laws is weak on the ground. Only a few approaches have considered what has been learned from prior initiatives to engage stakeholders in environmental policy (Davis 2010). Thus, findings from this study could assist policy and decision-makers to make better decisions and formulate policies through comprehensive planning while encouraging more engagement. Furthermore, it provides a comprehensive understanding of what additional studies are required for

effective governance and stakeholder engagement, which could be beneficial for researchers. Most importantly, the application of the analytical framework used in this study is broader than the specific case of the red panda in Nepal as it can be applied to advance the knowledge about the governance of conservation initiatives (including biodiversity conservation programmes) more widely. The study was part of a broader project in collaboration with the red panda Network to examine the social dynamics associated with red panda conservation.

Based on the issues regarding the governance in forest generally, the red panda conservation and its natural habitat protection 'our objective was to analyse stakeholders' perspectives on the effectiveness of the governance of three program categories; governance in general, red panda conservation programmes and natural habitat protection in terms of interest representation, organisational responsibility, decision-making and implementation through 11 key indicators in red panda habitat region of Nepal.

Based on the broad objectives, the following specific objectives would be examined in more detail: I. Analyse the stakeholders' ratings of governance for the different programme categories; II. Analyse the differences in ratings of governance of three forest management programme categories between i. marginalised and non-marginalised and ii. Stakeholders' sectors and III. Analyse the difference in stakeholders' spatial location and their governance ratings. Similarly, the following research questions were formulated to address the above specific objectives: I) Which are the highest and lowest rated governance indicators in the different program categories?; II) What is the difference in overall governance rating and the highest and lowest rated governance indicators between IIa) marginalised and non-marginalised and IIb) Stakeholders' sectors?; and IIIa) What is the spatial distribution and difference in governance ratings in the East and West and of different sector spatially? and IIIb) What is the relation between the spatial concentration of the respondents from different gender and their respective governance ratings?

2. Methods

2.1. Framework for assessment of governance quality of red panda conservation

The framework applied in this study consists of two principles: meaningful participation and productive deliberation. Meaningful participation is divided into two criteria: interest representation, which includes the indicators of inclusiveness, equality, and resources, and organisational responsibility, which include indicators of accountability, and transparency. The principle of productive deliberation is divided into decision-making, and implementation criteria. Decision-making is associated with three different indicators: democracy, agreement, and dispute settlement, while the criterion implementation is linked to behaviour change, problem-solving and durability.

Governance quality in this research has been assessed based on factors associated with red panda conservation and habitat (forest) management. These factors were categorised into three themes: 1. General Forest Governance (GFG), people's perception of forest governance in the forest management system in Nepal in general; 2. red panda Conservation Programmes (RPCP), the governance in red panda conservation programmes, including activities funded by government and NGOs targeted specifically at the red panda; and 3. Natural Habitat Protection (NHP), the governance of natural habitat protection, includes activities related to forest conservation that go beyond projects and programmes. Differentiating between these three approaches is important, as forest governance is largely the responsibility of national and district governments and is broader in its scope. The study evaluated governance quality, performance on indicators, the variation in stakeholder perception of the governance based on different groups they represent, access to resources, gender, and location were assessed and these were further backed by spatial analysis.

Table 1. Principles, criteria, and indicators (PC&I) used for evaluating governance quality.

Principle	*Criterion*	Indicator
'Meaningful participation'	*Interest representation*	Inclusiveness
		Equality
		Resources
	Organisational responsibility	Accountability
		Transparency
'Productive deliberation'	*Decision-making*	Democracy
		Agreement
		Dispute settlement
	Implementation	Behavioural change
		Problem-solving
		Durability

Source: (Cadman 2011). Reproduced courtesy of Palgrave Macmillan.

The quality of governance is measured at the indicator level by analysing the ratings from respondents. The framework is presented in detail in Table 1.

2.2. Research design, sampling, and data collection

The survey was conducted in August and September 2020 in a collaboration with Kathmandu Forestry College (KAFCOL), red panda Network (RPN), Griffith University, and the University of Southern Queensland. The first survey (Survey 1) was conducted online in August 2020 with stakeholders having access to the internet using Survey Monkey (https://www.surveymonkey.com/Survey Monkey, 2020). The purposive sampling method was followed to reach national and international stakeholders by sending emails to those who had internet access (119 complete responses). Advertisements and links to the survey were also shared on Facebook and partner websites (RPN) and KAFCOL); these responses were anonymous (52 complete responses). Out of 578 attempts in the online survey, 171 were fully completed. This sample is large enough to be considered a statistically valid cohort for measuring differences between or within groups (Vanvoorhis and Morgan 2007). This is a relatively high completion rate for online surveys which usually have lower response rates compared to paper surveys (Nulty 2008). A response rate of at East 20% is generally considered acceptable for online surveys (Gullstrand Edbring et al. 2016). Secondly, a telephone survey was undertaken in September 2020 to reach stakeholders who did not have access to the internet. Initially, individual respondents were recruited through CFUGs, and then snowball sampling was employed to increase the geographical spread and response rate. Some respondents (three women's organisations and one IP's organisation) lived outside the red panda habitat, but they were interviewed as they represented the voices of women and IP and worked in organisations inside the red panda area. A consent form was prepared before the execution of the survey. This study was granted full ethics approval under The Australian Code for the Responsible Conduct of Research (2018), (2013/561 "The Governance of Climate Change: Evaluating the Quality and Legitimacy of Primary Forest Protection for Emissions Reduction and Sustainable Development"). The form was attached along with the questionnaire form in the online survey and the telephone survey, before the beginning of every interview, the interviewee read the content of the consent form and the survey was taken only when the respondent agreed on the consent.

Surveyed comprised 355 respondents: 171 from an online survey (Survey 1) and 184 from telephonic interviews (Survey 2) consisting of seven broad groups, including non-governmental organisations, government, research/academic, CFUGs, herders' groups, Forest Guardians, and others. Youth, media and journalists, private sector, tourism, and online retail are categorised as other additional categories. Stakeholders from the governmental institution of Nepal i.e. forest ministries working at national and sub-national levels are classified as Government groups. Stakeholders working in NGOs active in forest and wildlife conservation are classified as non-governmental organisations. Research/Academics include those representing universities and research institutions. CFUGs include user members of the CFs. Herders' groups include herders of domesticated grazing animals. Forest Guardians are individual community members employed by conservation NGOs to patrol wildlife habitats. Similarly, the "Others" group include Youth (Self-identifying based on age), a representative from media; online retail; tourism operators; self-identifying as the private sector, and forest-based industry (Table 2).

Out of the 171 respondents from the online survey, 31% were from others, 30% were from NGOs 16% were from government organisations and the remaining 15% are research/academia. Almost 75%

Table 2. Number of respondents in survey 1 and survey 2 from August-September 2020.

Groups or stakeholders	Survey 1 Number	Survey 2 Number	Total Number	Comments
Government	28	8	36	Forest ministries at national and sub-national levels
Non- governmental organisations	52	7	59	NGOs active in forest and wildlife conservation
Research/Academia	26	1	27	Universities and research institutions
Marginalised groups	10	77	87	Women's organisations; Dalit; IP's organisations; Madhesi
Community forest users	4	38	42	CFUG members
Herders' group	0	19	19	Herders of domesticated grazing animals
Forest guardians	0	30	30	Individual community members employed by conservation NGOs to patrol wildlife habitat
Others	55	2	57	Youth (Self-identifying based on age); Other; media; Online retail; tourism operators; self-identifying as the private sector, forest-based industry
Total	**175 (49%)**	**182 (51%)**	**357**	

of respondents from the online survey have good access to resources, live in cities, have well paid jobs, and have access to the internet. These stakeholders have better access to information and are generally more aware of rules and regulations.

Based on many authors Marginalised groups are those whose ideas are overlooked or unheard by local elites, and who have no effective participation or limited representation in decision-making, generally due to ethnicity, age, gender, or occupation (Gauli and Rishi 2004; Larson et al. 2007; Colfer 2011; Khatri et al. 2018). In the case of Nepal, from our list of respondents; women, Dalit, Indigenous people (IP) and Madhesi come under the marginalised category (Mcdougall et al. 2013b; Bishwakarma 2017; IGES 2017; Crawford and Morrison 2021; Lin and Kaewkhunok 2021). So while adding up, the number of marginalised people responding to the online survey was less than 10%. Thus, to overcome this problem telephone interview was designed and conducted targeting these stakeholders who could not be reached online because of lack of access to resources and were able to gather views from 184 respondents.

Marginalised groups are also generally excluded from societal benefits, have limited access to public assets and administrative support, and are prevented from participating in capacity building opportunities, all of which compound their disadvantage (Von Braun and Gatzweiler 2014). The existence of social stratification into diverse ethnic groups, geographic regions, gender relations, and economic classes in Nepal contributes to the prevalence of unequal treatment of marginalised people compared to their affluent counterparts (Bhattarai 2007).

Out of these 184 respondents, 42% were from marginalised groups, 21% were members of CFUGs, 16.5% were Forest Guardians and 10% were herders. Whereas NGO representatives were 4% and the same percentage from the government. Others comprised 1% of respondents while researcher/academia was 0.54%. Women's participation (49%) in telephone interviews was on par with men's (51%). Almost 80% of the Survey 2 respondents live in villages adjacent to the red panda habitat. Some respondents represent organisations that work to raise the voices of marginalised people such as women, indigenous peoples, Dalits, and herders. The breakdown of both sets of survey respondents is presented in Table 2.

2.3. Data analysis

2.3.1. Quantitative analysis

All the respondents were asked about their perceptions of three programme categories: GFG, the governance of RPCP, and NHP (Table 3). Respondents were asked to rate all 11 governance indicators (Table 1) on a 5-point Likert scale (one for very low to five for very high).

Table 3. Indicator-wise questions.

Indicator	Questions
Inclusiveness	*In your view, are programmes and activities inclusive your interests? Please explain.*
Equality	*Do you think these programmes and activities treat all interests equally?*
Resources	*What level of resources do these programmes and activities provide for you to participate?*
Accountability	*Do you think these programmes and activities act in an accountable manner?*
Transparency	*Do you think these programmes and activities act transparently?*
Democracy	*Do you consider these programmes and activities to act democratically?*
Agreement	*Do you consider the making of agreements in these programmes and activities to be effective?*
Dispute settlement	*Do you consider the settling of disputes in these programmes and activities to be effective?*
Behavioural change	*Do you think these programmes and activities will contribute to changing the behaviour that leads to the loss of the red panda habitat?*
Problem-solving	*Do you think these programmes and activities will help solve the problems of the loss of the red panda and its habitat?*
Durability	*Do you consider these programmes and activities to be durable?*

Analysis of Variance (ANOVA) test which compares differences between three or more groups (Field 2013), was conducted in SPSS (IBM CORP 2019) to determine whether there were significant differences in perceptions of the respondents among the three programmes. Along with this, responses from Survey 2 were mapped using Arc GIS (version 10.8) to find the spatial distribution of the respondents.

2.3.2. Qualitative analysis

Respondents were also requested to provide comments regarding their perspectives on each indicator (Table 3). These questions were asked in a more elaborated form in a way the respondents could understand than presented here. These comments were analysed qualitatively, and the main findings have been included in the results section.

3. Results

This section presents results from quantitative and qualitative analysis of multi-stakeholder perspectives on the quality of the General Forest Governance, red panda Conservation Programmes, and Natural Habitat Protection for red panda conservation in Nepal.

3.1. Stakeholders' ratings of governance for the different programme categories

Overall, respondents' ratings were average (Table 4) with a score of 31.8, out of 55 i.e. 59.8%). The

Table 4. Overall, survey 1 and survey 2 results from the combined respondent of sectors on GFG, RPCP and NHP.

Indicators	GFG			RPCP			NHP		
	Overall	Survey 1	Survey 2	Overall	Survey 1	Survey 2	Overall	Survey 1	Survey 2
1. Inclusiveness	2.99	3.16	2.81	2.95	3.36	2.54	2.98	3.38	2.58
2. Equality	2.74	2.9	2.57	2.84	3.21	2.46	2.87	3.23	2.50
3. Resources	2.44	2.61	2.27	2.57	2.87	2.27	2.59	2.94	2.24
4. Accountability	2.87	2.98	2.75	2.90	3.23	2.56	2.82	3.09	2.54
5. Transparency	2.74	2.77	2.71	2.84	3.14	2.53	2.79	3.05	2.52
6. Democracy	2.87	2.99	2.74	2.82	3.05	2.59	2.80	3.00	2.59
7. Agreement	2.91	3.13	2.68	2.92	3.27	2.57	2.93	3.27	2.58
8. Dispute settlement	2.83	3.06	2.59	2.89	3.20	2.57	2.79	3.06	2.52
9. Behavioural change	3.09	3.53	2.64	3.07	3.62	2.51	3.09	3.66	2.51
10. Problem-Solving	3.14	3.75	2.53	3.13	3.80	2.46	3.19	3.91	2.46
11. Durability	3.04	3.37	2.71	3.03	3.43	2.62	3.07	3.50	2.64
Overall scores (out of 55)	**31.6**	**34.3**	**29.0**	**31.9**	**36.2**	**27.7**	**31.9**	**36.1**	**27.7**
Notes:		Highest			lowest				

respondents' overall scores for both the RPCP and NHP were equal with a score of 31.9 (58%), while the GFG score was slightly lower at 31.6 (57%). There was no significant difference ($p < 0.05$) in the overall perception of stakeholders about governance quality among the three programme categories. Table 4 shows the rating conversion in terms of scores from one to five and aggregated indicator-wise rating for GFG, RPCP, and NHP overall and Survey 1 and Survey 2 respondents specifically. As there were 11 indicators, possible scores ranged from a minimum of 11 to a maximum of 55.

Resources were rated the lowest by all stakeholders in all three programmes. This belief was also reflected in respondent comments. A researcher/academician said, "*Capacity building of local people especially poor, indigenous and marginalised communities with technical and resources support will play a vital role in conserving red panda and its habitat*". One Dalit respondent referring to programme intervention said, "*These programmes should provide seed money to poor Dalit women to promote their traditional knowledge.*"

The indicator equality received low ratings in all three programmes and mainly in GFG. An NGO representative complained, "*Elite dominance and politics within CFUGs are challenges in forest governance that are needed to be improved*".

Another Dalit woman said, "*RPCP should ensure equitable access and control over resources and benefits to Dalit women in the CFUG. They should ensure the meaningful participation of environment-related bodies at the federal, state, and local levels in leadership and decision making*".

Interviewees from women's and indigenous peoples organisations similarly complained about being excluded from, and not informed about capacity-building opportunities like nursery management training, leadership training and entrepreneurship training etc. In the telephone interview, one respondent from a women's organization commented: "*No one invited us, and only the majority of the men took part in the programmes, leaving us women out.*" In addition one respondent from the IP organization added: "*We were never informed for about programmes, only the elite received information. As a result, we are unaware of the programmes" budgets; they ought to include us in the programmes'.*

Transparency and democracy received below average ratings. However, a more complex picture emerged from the comments of respondents, with those in Survey 1 expressing some concern over these indicators. A representative from an NGO said, "*Local stakeholders, particularly, marginalised stakeholders lack access to information, and participation and are deprived of social justice*". The non-marginalised respondents also emphasised improving transparency as a respondent from an NGO commented: "*Public auditing is required for maintaining transparency.*" In contrast, some marginalised respondents believed there was adequate transparency, such as a Dalit woman who stated, "*Committee members seem to show transparent behaviour in meetings and assemblies, but we are illiterate and cannot follow*".

Inclusiveness received similar ratings in all three programmes. One respondent from CFUG said, "*We have maintained inclusiveness by equally including women, Dalit, and marginalised communities in the CFUG committee*".

Durability and behavioural change were rated highly in all three programmes.

Problem-solving received high ratings overall in all three programmes. A respondent from the Survey 1 expressed: "*We barely had huge problems, and when any problem occurs we are solving them properly by taking suggestions from all the CFUG members*". Marginalised respondents gave low ratings for problem-solving. A woman from CFUG (Survey 2) who gave a low rating for problem-solving in GFG said, "*Forest management programmes should be focused on solving problems of poor women through employment generation activities*".

3.2. Differences in ratings of indicators in governance quality of three forest management programmes categories between various groups

The ratings from stakeholders were analysed and compared between various groups such as the sectoral association of stakeholders, marginalised and non-marginalised groups as well as benefit recipients versus non-recipients.

The respondents from the first survey gave the highest score for RPCP (36.2, 66%), followed by NHP (36.1, 65.6%) and then GFG (34.3, 62.4%). In the case of the second survey conducted via telephone where most of them were marginalised, GFG was rated highest (29.0, 52.7%), followed by equal scores (27.7, 50.4%) for RPCP and NHP (Table 4). The variation between the marginalised and non-marginalised groups is further discussed in the section below.

3.2.1. Ratings of indicators in governance quality of three forest management programmes between marginalised and non-marginalised group

Marginalised stakeholders, in both surveys, consistently had lower perceptions of the quality of forest governance than those who were non-marginalised (Figure 1). A further distinction is apparent in a detailed investigation of Survey 2 respondents based on resource availability and benefits received from red panda conservation and natural habitat protection programmes. Dalit respondents and those from women's and IP's organisations are highly marginalised and under-resourced in comparison to the Forest Guardians. One Forest Guardian said they had received "monetary incentives, first aid kits as well as capacity development opportunity in GPS [Global Positioning System]" training from the red panda conservation programme. As a result of it he 'didn't go abroad to earn an income. Another Forest Guardian, speaking of his community, indicated that they were 'happy to be involved in the programme as they "got salary and numerous incentives". Likewise, herder groups, especially in the Taplejung, Ilam, and Panchthar areas received some support like animal husbandry training, tent support, improved cooking stoves, and fodder plantation training for natural habitat protection. One herder said: "*We have got training and other assistance such as the materials provided for improved cowshed construction which has helped to manage our yak properly*." As they are getting support for their livelihood and training regarding the importance of these animals for the sustainability of the forest, ecosystem and its resources, the higher ratings and the positive comments given by the respondents on to the indicators shows the positive attitude towards red panda conservation.

Marginalised communities had different responses compared to those groups that had received benefits from these initiatives. As the comment from the Dalit woman respondent mentioned above shows Dalit women have always been suppressed, bullied, and humiliated by upper castes. The upper class manipulates the CF fund. Dalits are not given anything.

Similarly, a respondent from an IP organisation stated, "*The funds, technical support, and institutional input allocated by the red panda programmes do not contribute to meaningful participation of Indigenous communities. Thus, sufficient resources should be allocated for increasing their participation*."

One of the respondents in an online survey from the NGO sector mentioned ' *This governance work left out the marginal, real forest dependent communities. It is unfortunate that either local or external elites control governance-related activities. Local people or stakeholders need to be given the opportunity to choose the real activities that they think are very pivotal in achieving the goal of good governance.*' Again, one of the Dalit respondents during the telephone survey said '*Compensation should be given to the community affected by the adverse environmental impact created by the development project, and special priority should be given to women, Dalit and economically deprived people, disabled people, children, and senior citizens.*'

3.2.2. Response ratings based on the sector stakeholders represent

Respondent ratings on each of the programmes were analysed based on the groups with which each respondent was associated, as shown in Figure 1.

As Figure 1 shows, ratings from the Forest Guardians and herders' groups were the highest at between three and four. Researcher/academic respondents also rated governance highly, as did NGOs, government representatives, and other stakeholders. In contrast, CFUG members rated the programmes at around 2.5. CFUG members gave low ratings for problem-solving, behavioural changes, dispute settlement, and resources of the three programmes. Most notably, marginalised stakeholders gave substantially lower ratings than all other groups, ranging from 1.5 to 2.5.

The respondents' sector who gave higher ratings to governance were more aware of the high variety of laws and rules as reflected in their comments:

An NGO programme coordinator said: ' *We have asked people to save the red panda and made them aware of rules and regulations. We have*

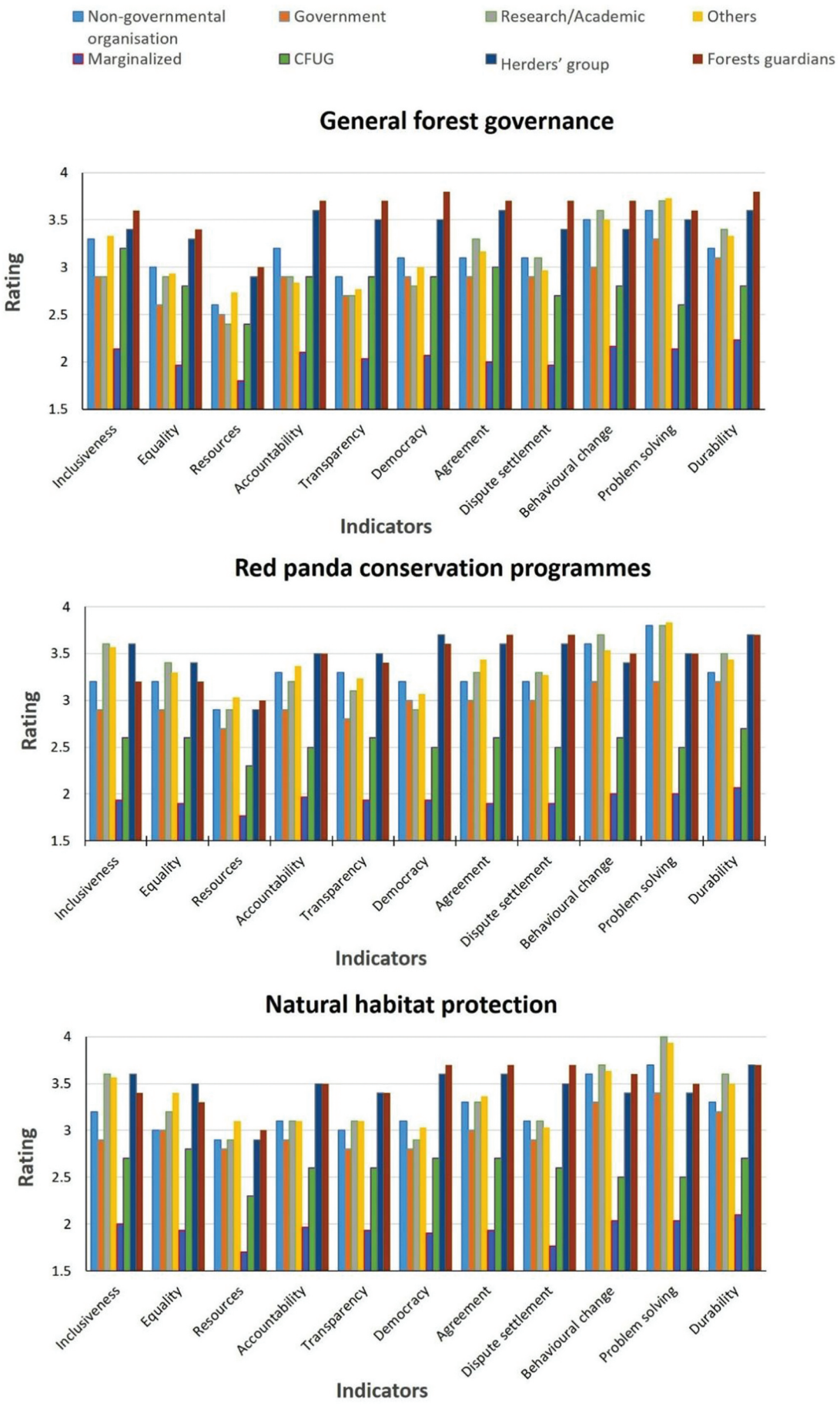

Figure 1. Combined rating by the indicator of the selected sector of respondents on GFG, RPCP, and NHP.

also formed eco-clubs to inform teachers and students about policies related to forests and the red panda.' A Division Forest Officer said: "*red panda is both an endangered and a flagship species. The Government of Nepal has formulated the red panda Action Plan (2019–2023). We have been conserving red panda based on that plan*". Whereas, a woman said: '*RPN should provide governance training and red panda management training to women and make them aware of rules and regulations.*' A respondent from a marginalised group said: '*Committee members, Forest Officers, Forest Guardians, and Social Mobilizers from NGOs have been saying that the red panda is an endangered species and we should save them'.*

3.3. Spatial snapshot of stakeholders' locations and their responses

Responses from the Survey 2 (n = 184) were mapped to examine the possible association between respondents' location and their ratings. The geographical distribution of respondents and chart of results by the group is presented in Figures 2 and 3.

3.3.1. Spatial snapshot of stakeholders' locations (East vs. West) and their responses

The average ratings for all the indicators were found much higher by the respondents from the Eastern part than those from the Western part of Nepal (right top graph in Figure 2(a)). Based on the district-wise spatial analysis, the overall average rating per district was highest in Panchthar, Ilam, and Taplejung (PIT) districts (average ratings higher than 3). These respondents were mostly clustered around the PIT areas. While in the other areas, where conservation programmes have recently started, lower ratings were observed.

While looking at the sector wise distribution of the respondents in the East and the West (Figure 2(b)) the sectoral highest raters (Figures 1 and 2(c)) i.e. the Forest Guardians (Figure 2(b): 4 from the West while 14 from East) and Headers (Figure 2(b) :14 from the West and none from the East) were higher in the East region of Nepal while one of the sectoral lower scorer the GO/NGOs (Figures 1 and 2(c)); (Figure 2(b): 17 from the West and 8 from the East) where more in number compared to that in the West. So as per already mentioned in section 3.2 b., the higher rater i.e. Forest Guardians and herders who have received more incentives from the red panda conservation programmes and activities happen to be residing in the East.

Also, the red panda conservation programmes have been implemented in the East region of Nepal almost a decade earlier than that in the West region where they have just started to work (Mcdougall et al. 2013b; Lin and Kaewkhunok 2021). Similarly, the overall forest governance status, developmental status, and economic condition, as well as the forest condition in the East, are much better than in the West, which might be another region for the East rating the governance higher while the West lower (Iijima 1964; Thoms 2008; Hatlebakk and Ringdal 2013; Dhungel 2018). According to

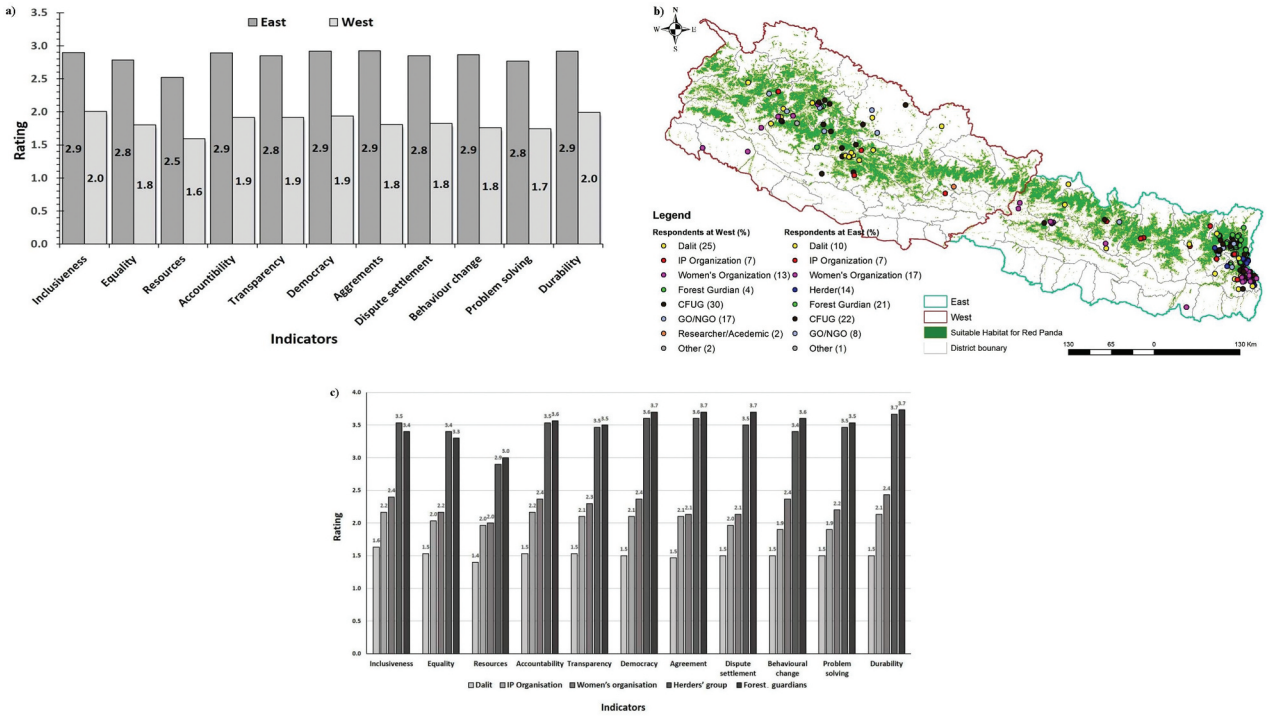

Figure 2. Distribution of respondents and chart of results ((a) East/West (b) geographic distribution and (c) major sectors ratings)) from survey 2.

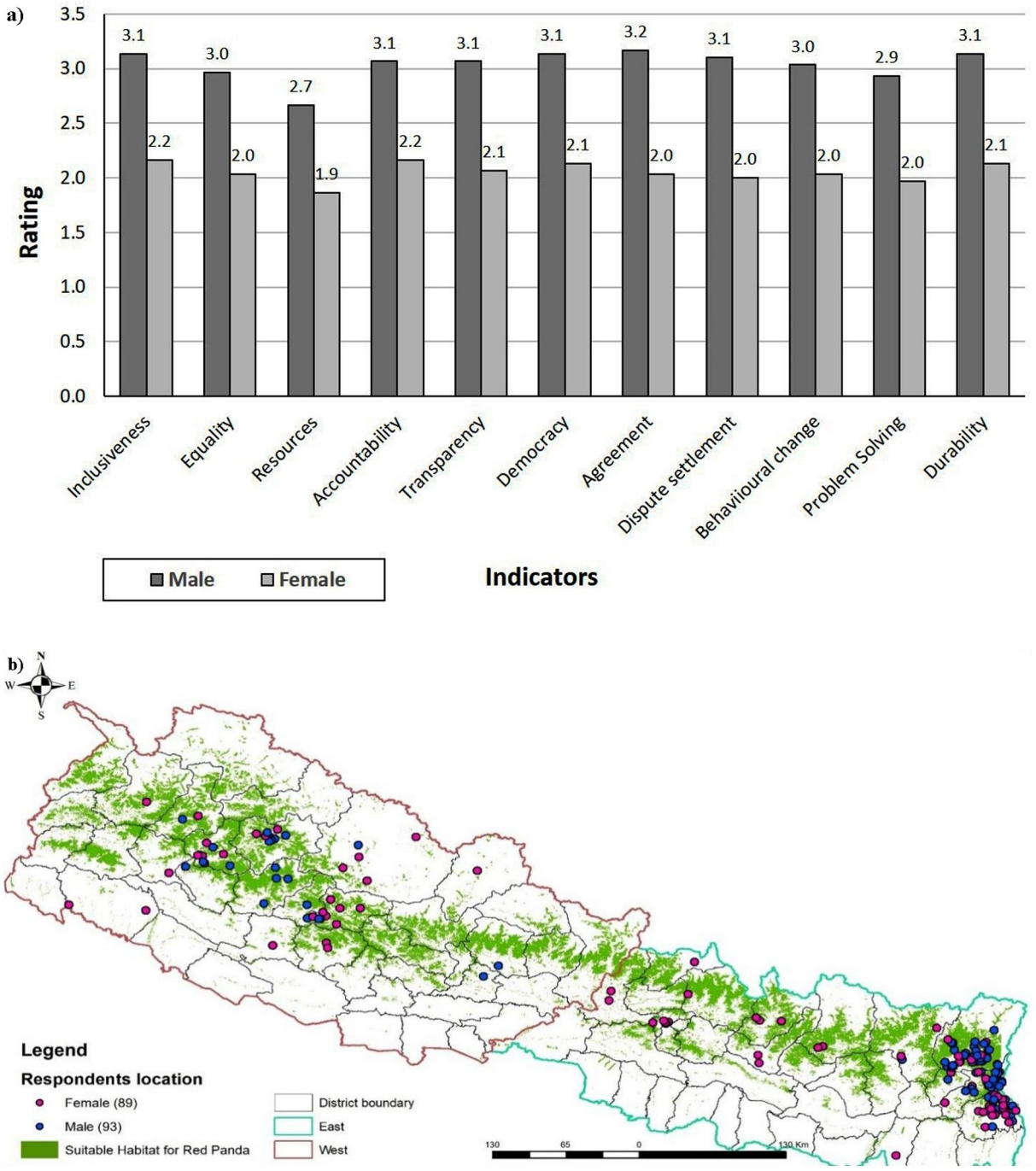

Figure 3. Geographical distribution of respondents and chart of ratings by gender (phone interview).

(Dhungel 2018) the value of the Human Development Index has been higher in the East region and gradually declining in the West. Also, there is a greater disparity in wealth and income in the West compared to the East (Thoms 2008).

3.3.2. Spatial snapshot of stakeholders' gender and their responses

The gender-wise spatial distribution of the respondents and their ratings was also analysed. The geographical distribution of respondents and chart of results by gender is presented in Figure 3. The ratings on all the indicators from male respondents were much higher than those of their female counterparts (Figure 3).

One respondent from a women's organisation commented, "*We are mostly excluded from all programmes and usually, men participate in them.*" Similarly, a respondent from an IP's organisation said, "*Women are overloaded with household chores and are not treated as equal as their Indigenous male counterparts. Indigenous women should be included in the executive committee of CFUG.*"

One of the respondents in the online survey suggested, "*The voice of women and disadvantaged groups (DAGs) should be included*".

A male CFUG respondent said: *"The red panda focused programmes are doing well. Therefore, these programmes should be replicated in other areas as well"*. Most of the male respondents were from the PIT area while most of the female respondents were from other areas.

4. Discussion

Assessment of governance regimes allows a better understanding of the impact of one governance system on the other in protected areas and forest management (Macura et al. 2015). With regards to stakeholders' ratings of governance for the different programme categories (Section 3.1), overall, respondents' perception of governance quality among the three programme categories did not vary, however, there was a difference in ratings of individual indicators. This suggests that the impact of these programmes on forest governance has been similar, which is mainly because the stakeholders viewed that the programme is contributing to improving governance. Several factors such as resources, equality, marginalisation, gender, and location need to be considered to improve governance quality. The section below discusses the major findings of this study:

4.1. Inadequacy of resources and inequality as challenges to good governance

While there was variation in individual indicator ratings in these three programme categories (Section 3.2), a notable similarity was evident among the groups. Respondents believed that they were not getting sufficient financial, technical, and human resources for forest management, red panda conservation, and habitat protection. On the one hand, resources, especially financial resources, are usually deemed insufficient. On the other hand, due to elite dominance and a lack of timely communication to marginalised people about project operations, the allocated resources have not reached the marginalised people. Low ratings of resources match with findings from Maraseni and Cadman (2015) who assessed the perception of global stakeholders regarding the governance of Clean Development Mechanism and REDD+ and findings from other studies (Cadman et al. 2016, 2017). While stakeholders, who would benefit from a potential increase in resources, might not find them to be abundant or even sufficient, nevertheless, lack of resources impacts negatively on participation in decision making. Forest management and biodiversity conservation initiatives could be hampered by a lack of resources, capacity, and a lack of collaboration and networking with relevant academic and research groups (Rahman and Miah 2017). The development of local capacity for decision-making and adaptive management has been reported to be constrained by inadequate information, financial resources, and supportive legislative mechanisms in Northern Thailand (Sapkota et al. 2021). Lack of resources, especially for capacity building is a major impeding factor for effective forest governance. Capacity building, on the other hand, poses challenges regarding how to proceed in a way that honors local aspirations while also achieving conservation and development objectives (Ribeiro et al. 2020). The programmes here majorly provided capacity building training like women's leadership training, account and record keeping training, entrepreneurship skill development training, conflict management training, forest management training and red panda and human relationship sensitization programme etc. so the respondents are also talking about these activities. This type of capacity building aligns forest conservation efforts with community priorities in order to generate new revenue opportunities (Ribeiro et al. 2020). As a means of aligning numerous aims, these are the capacity building initiatives conducted in the red panda conservation program. The strategy was to increase local people's capacity in a variety of skills that are not only important for red panda conservation but also valuable in their livelihood improvement through employments. Previous studies has identified local capacity building projects have a positive impact on local communities well-being (Torres-Rojo et al. 2019). Pujo et al. (2018) has also mentioned that the success of CF can be accomplished through fostering cooperation among local communities through capacity building and community-based forest management. They also have policy consequences because capacity building is less expensive than other poverty reduction methods such as direct cash transfers or subsidies. Furthermore, they have long-term effects that do not necessitate frequent periodic contributions and do not discriminate based on gender or individual requirements (Ribeiro et al. 2020). Local communities, who often lack resources, as being residing nearby these forest; have more direct interaction with the red panda. Enhanced resources and strengthened capabilities at the ground level and with local institutions enable the enforcement of rules and regulations and the effective fulfillment of responsibilities and aid further conservation efforts (Jalilova and Vacik 2012; Mustalahti and Agrawal 2020; Nansikombi et al. 2020). Hence, stakeholders must have the necessary financial, technical, institutional, and educational resources to avoid tokenism participation and guarantee meaningful participation (Cadman et al. 2017) and good governance.

A low rating of equality in all three programme categories is worrying which reveals the persistence of inequality and dominance of elites over DAGs in deliberative processes (Fraser 1990). It should be addressed as elite capture results in inequalities, creates greater marginalisation, and causes governance

problems (Persha and Andersson 2014). Andersson and Agrawal (2011) reported economic inequalities to have an adverse impact on forest outcomes. The existence of inequality in forest management and forest governance has been reported in several studies (Bullinger and Haug 2012; Matin et al. 2014; Andersson et al. 2018) around the world.

4.2. Marginalised stakeholders giving low ratings than less marginalised

Sector-wise analysis of stakeholder perceptions has policy implications as it allows decision-makers to prioritise low rated indicators (Eagles et al. 2013).

Better-resourced stakeholders had a relatively high level of confidence (>60%) in the governance quality of existing forest management strategies for red panda conservation in Nepal across the three programme types. Researcher/academic respondents, NGOs, and government representatives are the sectors who also give higher scores.

With regards to CFUGs, although governance is an essential element of CF (Pokharel and Niraula 2004; Piabuo et al. 2018), there are weaknesses in governance mechanisms within CF management in Nepal. These include challenges such as elite dominance and taking advantage of their position in resource distribution, resulting in unequal benefit-sharing between marginalised communities and other groups (Gurung et al. 2011; Pokharel and Tiwari 2013; Lamichhane and Parajuli 2014; Baral and Vacik 2018; Puri et al. 2020; Rosen 2020; Ghimire and Lamichhane 2020). This could be the reason for their low ratings and if the equal benefit-sharing mechanism could be ensured through leadership training to them, and maintenance of proper accountability and transparency these barriers could be overcome.

The lowest ratings from marginalised stakeholders, out of all respondents groups suggest that issues of marginalised groups are not being addressed. This is important as it is the marginalised communities that interact more directly with the forest and red panda. Marginalised groups feel a greater need for improvements in governance, especially for RPCP and NHP, compared to their non-marginalised counterparts. In the case of Nepal, government actors and influential civil society groups are reported to have dominated spaces for involvement and decision-making in forest management initiatives like REDD+, while other actors, particularly marginalised groups like Dalits and women's organisations, have had limited influence (Satyal et al. 2019). People living near forests are most marginalised and financially disadvantaged and thus rely heavily on forest resources to survive (Wagle et al. 2020). Their need for forest products (fuelwood, fodder, and leaf litter) and the problems they face differ from the more affluent groups (Pandit and Bevilacqua 2011). The relative vulnerability and limited private resources among poor and marginalised groups necessitate the development of enhanced or secure alternative livelihood strategies in conservation-related programmes (Mcdougall et al. 2013a).

The difference in perspectives of stakeholders is noteworthy from a policy viewpoint because all these stakeholders generally share cultures, values and social norms and are supposed to be following common laws and regulations. However, variation in their perception suggests that stakeholders, particularly marginalised stakeholders, need to be more informed and aware of forest and wildlife conservation rules, regulations, and policies. Furthermore, these results suggest that in order to reach forest dependent stakeholders specifically marginalised stakeholders and know their views, it is important to talk to them personally through face to face interviews or through telephone interviews as they have limited access to resources including internet access.

This spatial analysis strengthened the findings that there are distinctions in perceptions of governance quality based on location, access to resources, gender, and marginalisation. These results indicate a positive impact of the forest management programmes in the PIT area and suggest the need for similar programmes in the other red panda areas.

4.3. Respondents from Eastern Nepal rated governance quality high compared to Western Nepal

Management strategies for red panda conservation are generally considered less effective by marginalised and less-resourced sectors compared to those receiving benefits from conservation initiatives (the Forest Guardians and herders' groups). The significance in the East/West analysis lies in the fact that more attention has been paid to the red panda conservation, natural habitat protection and forest governance generally in the Eastern, as opposed to the Western districts of Nepal, for various historical, cultural and political reasons. Higher ratings from respondents from Eastern Nepal, particularly from PIT might be attributed to higher awareness of red panda conservation among people in Eastern Nepal compared to the West (Bista et al. 2020; Sherpa et al. 2022). These are the areas where red panda conservation has been underway for more than a decade through the red panda Network and other organisations. Eastern Nepal is, in general, better resourced and has more

forest and wildlife conservation programmes. In contrast, the Western part of the country is less resourced and has few conservation programmes in operation. The programmes that do exist have only recently commenced. According to the red panda Network (2021), the community-based conservation of the red panda was expanded to Western Nepal in seven districts: Kalikot, Rukum East and Rukum West, Dolpa, Jumla, Jajarkot, and Rolpa 2018.

Most of the respondents, such as Dalits, IP's organisations, and women's organisations who gave low ratings, are located outside the PIT area and have received minimal or no benefits from these programmes. RPCPs, thus, have a positive influence on stakeholder perceptions of forest governance.

4.4. Influence of gender in perception of governance quality

Low ratings from women are also apparent from their responses that they are excluded from participation in programmes and related activities. The lack of involvement or consultation of interest groups such as women in forest management echoes with findings from other studies conducted in Nepal (Uprety et al. 2012; Basnyat et al. 2018; Baral and Vacik 2018) and from other studies conducted in Congo and Ethiopia (Samndong and Kjosavik 2017; Saguye 2017). Women are managing forests and maintaining all governance indicators compared to men (Thapa et al. 2020b). Despite the increasing trend of participation of marginalised groups, they are still unable to influence decisions (Baral and Vacik 2018; Devkota 2020).

5. Conclusion

The investigation of stakeholder perceptions of red panda conservation and forest management programmes and their activities provides a comprehensive picture of attitudes regarding forest management activities that may impact red panda conservation.

The findings show a clear distinction in perspectives on the quality of forest governance based on access to resources. The better-resourced respondents like researchers, NGOs, and government staff had positive perceptions of governance quality and found management strategies for red panda conservation effective. However, lower ratings were provided by under-resourced respondents including marginalised stakeholders such as women, Dalits, indigenous peoples, and Madhesi. A closer analysis of these marginalised respondents reflected a gap between the non-marginalised and the marginalised stakeholders. Ratings from respondents like Forest Guardians, CFUGs members, and herders were much higher than ratings from marginalised stakeholders. A likely explanation for this is the fact that the former receive benefits from programmes while the latter do not. This suggests a positive impact of conservation intervention in improving governance quality. Therefore, replication of such programmes is warranted.

Conservation intervention, programmes and policies should prioritise the needs of forest-dependent communities with regard to maintaining the red panda habitat. Conservation programmes should prioritise solving the problems of marginalised groups which can, in turn, bring changes in behaviour. Local communities lacking resources interact more closely with the red panda as they are more dependent on forest resources and frequently bring forest products from the forest to fulfil their forest products. Thus, greater consideration must be given to the perspectives and needs of forest-dependent communities when developing strategies for encouraging the protection, maintenance, and expansion of the red panda habitat, particularly in the areas of training and capacity building, as well as income generation and alternative sources of livelihood. For sustainable CF management, community capacity must be increased through a transformation process. Capacity building is required for the local community to participate in overall forest governance, red panda conservation and habitat management operations and share each responsibility in managing forest resources to achieve success. Resources should be allocated prioritising the capacity, empowerment, and livelihood needs of marginalised groups if their perception of governance and capacities to participate meaningfully in the making and implementation of decisions are to be improved. red panda will continue to be threatened by human activities, and their native habitat will be lost unless these are provided. However, whether resources result in actual improvement in governance quality needs to be further documented. In order to improve governance quality, and inequality among stakeholders, gender discrimination should be eliminated.

Given the divergence of perspectives between different social sectors and access to online resources, some consideration of interview methods may be required. For example, rather than using online surveys for those with access to the internet, and telephone interviews for those who do not, it may be better to interview all respondents in person, or simply via telephone. It would also be interesting to compare the findings of the current study with other countries, in the context of natural resource

management for natural habitat protection, where marginalised stakeholders face similar resource challenges.

The outcomes of this study would assist policy-makers and decision-makers in Nepal and other countries with similar socio-economic and ecological contexts formulate or improve policies for participatory wildlife conservation and forest management programmes. It also influences policies in other contexts where marginalisation and inequality limit meaningful participation and representation of interests. This study's governance framework could be used to assess governance quality at the local, national, regional, or global levels as well as in the development of governance standards for the conservation of other wildlife. Furthermore, it could be used to assess the governance quality of other conservation initiatives more widely.

Acknowledgement

This research was supported by a grant from a charitable organisation that neither seeks nor permits publicity for its efforts under the auspices of the Boreal & Temperate Primary Forest Research Project: Nepal red panda Case Study, a collaborative project between Griffith University, the red panda Network, Kathmandu Forestry College and the University of Southern Queensland. We are grateful for their generous support. We are indebted to all the respondents of the online and telephone surveys who shared their voices.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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