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Forest Governance in Nepal concerning Sustainable Community Forest Management and Red Panda Conservation

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Abstract: This paper investigates issues confronting forest management and sustainability, focusing on the governance of the community forest user group (CFUG) initiative in Nepal. The paper begins with a literature review to give a general overview of the historical and current situation of forest governance in Nepal. It explores the historical impacts of unsustainable logging in Nepal and the World Bank Report, which both investigated and explored avenues for improving the forest situation, including community forestry. The paper outlines the development of community forestry, the legislative, regulatory, and governance frameworks underpinning this unique system of community-driven forest management, and its relationship to sustainable forest management (SFM). SFM in turn has engendered a market for sustainably derived timber and labeling systems for 'good' wood. The paper continues by providing an analysis of stakeholder attitudes regarding the current forest governance situation in Nepal. Furthermore, it provides another small case study on how such standards might be applied in the local community context of protecting Nepal's Red Panda while simultaneously delivering sustainable forest management and community development. It concludes with a discussion on the need for governance standards for forest management and community forestry in Nepal.

Keywords: sustainable forest management; community forest; forest governance; stakeholders; standards

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1. Introduction

1.1. Community Forest, Forest Governance, and Red Panda Conservation in Nepal

In Nepal, forests are a vital resource, covering about 44.74% of the country's area [1] and contributing 15% of its Gross Domestic Product (GDP) [2]. Despite this, Nepal has a long history of deforestation. The rapid deterioration of the mountain environment raised concerns among international communities in the late 1960s and 1970s [3]. Forests were nationalized in Nepal in 1975 to prevent ongoing deforestation, but this did not reduce exploitation, as people did not feel any responsibility for forest management [4,5]. Although the National Forest Plan of 1976 recognized the necessity for public engagement in forest management, local people were not incorporated into it until the late 1970s [6].

Globally, community-based forest management is now a prominent method of managing forests and a useful paradigm for enhancing local stakeholders' standards of living and delivering socioeconomic and biophysical outcomes [7]. Community-based forestry (CBF) includes "initiatives, sciences, policies, institutions, and processes that are intended to increase the role of local people in governing and managing forest resources". Along with government-led programmes, it also incorporates formalized customary and indigenous initiatives. CBF addresses social, economic, and conservation dimensions through a variety of initiatives, such as decentralised and devolved forest management, community-company partnerships, smallholder forestry programmes, small-scale forest-based enterprises, and

indigenous management of sacred sites with cultural significance [7]. This definition relates to the dejure and defacto rights of communities and encompasses a large and widely spread forest managed both legally and informally around the world. However, Nepal's concept of community forest somewhat restricts this definition, treating it as a formal entity. 'Community forestry is the co-management of forests by the community and the government, with community forest user groups acting as an autonomous local institution comprised of village residents who use forests and have the authority to make decisions about forest protection, management, and utilization, including harvesting and sale [8,9]. It focuses on improving the livelihood and welfare of rural people and conserving the natural forest through local participation and cooperation [10]. As of 2022, there were 22,380 Community Forest User Groups (CFUGs) in Nepal and 3.34 million households involved in community forests [11]. In other countries it is the ownership, rather than the management, which is devolved to communities, although this is not universal, even if it is desirable. Furthermore, community forestry can be just that—forestry in which the community as a collective devolves forest management and governance to committees (or other institutional arrangements), that are more broadly representative of the whole community. It excludes the CBF managed in Nepal—collaborative forest, leasehold forest, buffer zone community forest, government-managed protected forest, private and small-holder, and urban forest. In Nepal, it should also be noted that certain types of management do not give CFUGs any role, including collaborative forest, leasehold forest, buffer zone community forest, government-managed protected forest, private and small-holder, and urban forest. Having said that, over the past 40 years CBF has become a major forest management modality around the world, and its effectiveness in delivering biophysical and socioeconomic outcomes which move towards sustainable forest management (SFM) and improving local livelihoods should be noted [7].

According to Forest Act, 2019 [9], in Nepal, Community forest user groups (CFUG) are considered an autonomous entity and hand over the forest resources to the CFUG under the approved constitution and operational plan by the respective Divi-sion Forest Office (DFO) for the respective CFUG. On the one hand, there are clearly mentioned management rights including harvesting and sale rights handed over to the CFUGs and on the other hand, there is a restriction of forest land use beyond the ap-proved constitution and operational plan. On contrary, the Government of Nepal holds the land ownership of the CF handed over and there is a mandatory, the ap-proved constitutions and the operation plans should be renewed every 5–10 years as mentioned in the approved constitution and the operational plan. This means there is always a kind of fear to the CFUGs of being taken back the handed-over CF by the DFO. The Act has provisioned an executive committee (Community Forest user com-mittee -CFUC) formation representing the CFUG as a functional body but the decision made by the community forest user committee may not represent the voices and needs of the CFUG members and the overlooked needs of the marginalized users [10]. It is a reality, the elites and educated people are dominant in the CFUCs. However, the rep-resentation of women, marginalized groups, and proximity users is ensured in the leg-islation [11]. The general assembly of the CFUGs is considered a validation of the deci-sions made by the CFUGs every year that the participation of the CFUGs members is realized as tokenism. This begs the question as to whether governance of Nepal's for-ests might be better managed if they were handed over directly to the community, and other, less onerous arrangements were put in place.

This administrative burden is exemplified by the manner, in which community forests in Nepal are effectively governed by the District Forest Office (DFO), rather than the community. In Nepal, community forests are handed over to CFUGs for 5–10 years under the approved constitutions and operational plans by the DFOs, and man-datory to renew the constitutions and operational plans by the DFOs once the tenure is completed [12]. The interest of the staff of DFOs and the elite members of the CFUCs primarily reflects in the renewed constitution and the operational plan. However, the rights of amendment of the constitution and operation plan have been provided to the members of the respective

CFUGs [12]. There are a lot of bureaucratic processes like forest inventory, surveying of the handed over CF and inclusion of restriction provi-sions, controversial provisions with other national laws for i.e., Mine and Minerals Act 2008, Local Government Operation ACT 2017, and vested interest of the forest admin-istrations. Since, the country has adopted a federal structure all three tires of govern-ments—local, provincial, and federal have levied a tax on the CFUGs for income of the forest products and services beyond use for its members. This provision has challenged the de facto rights of the traditional users and created a kind of distrust in the CFUG members and disempowering situation for the CFUG members.

Poor governance can increase inequalities between natural resource users and have a particularly negative impact on marginalized groups [12]. Since the devolution of forests began four decades ago with the objective of forest conservation and meeting the forest products need of local people [13], management has evolved in response to international norms to embrace cross-cutting issues such as sustainability, gender equity, good governance, and Payment for Ecosystem Services (PES) [14]. 'Governance' refers to the structures and processes that help steer or coordinate the interactions between participants within a given institution or complex of institutions [15]. Forest governance has been characterized as the collaboration between the various interests around the management of forests and the outcomes that these interactions generate with regard to sustainable forest management (SFM) [16]. The National Forest Policy, reformulated in 2019, is aimed at delivering SFM and advancing community stewardship of forest management and usage [17]. The Forest Act (2019) stresses the need for women's participation in decision making regarding community forest management and governance at both the provincial and local levels [18], and community forest management models are centered upon mechanisms for multi-stakeholder coordination [17].

Nepal is one of the few countries inhabited by the International Union for Conservation of Nature (IUCN) red list species the Himalayan Red Panda. Around 70% of the total red panda habitat lies outside the protected areas in Nepal, in the CFUGs and government-managed forest [19]. Despite the fact that red pandas provide a number of social, economic, and ecological services, they are still threatened by a number of factors due to poor governance, such as habitat loss and fragmentation, poor conservation awareness, poaching, livestock grazing, water scarcity, road construction, human disturbance, forest fires, extreme weather, etc. [19]. Hence, ensuring the good governance of the CFUGs is critical for the sustainable use of natural resources and protecting biodiversity.

1.2. Prevalence of Marginalization despite Successful Community Forest Management

Nepal's community forestry program has the predominant role in standardizing local approaches to a range of rights as well as strengthening forest management, overseeing the maintenance of community assets at the local level [20], ensuring good relations between user groups and public administrators, as well as holding authorities to account [21]. Despite these roles and responsibilities, there is still a predominance of elite capture, which impacts marginalized communities, unequal benefit sharing, and disadvantage. In short, poor governance remains pervasive inside community forest management structures in Nepal [19–25].

Marginalization excludes underprivileged and decision making groups and networks from the financial, social, and political benefits of society, restricts their access to public assets and administrative support, and reduces their prospects overall whilst also preventing opportunities for capacity building [26]. In forest governance, marginalized groups are stakeholders living in and around forests but traditionally excluded from access to forests or their benefits [27] and decision making, and they are usually identified based on gender, age, ethnicity, and occupation [26,27]. In the case of Nepal, these groups include but are not limited to women, indigenous people, Madhesi, Dalit, and other castes, the poor or ultra-poor who have not received equal treatment, the illiterate, the informal work sector, or other groups or sectors in society that experience a disadvantaged status [28]. The prevalence of unequal treatment of the marginalized compared to their affluent counterparts in

Nepal is mainly due to existing societal stratification into various ethnic groups, geographic regions, gender relations, and economic classes [29].

The promotion of good governance for sustainable forest management in Nepal, therefore, necessitates numerical representation as well as the functional participation of users from all interest groups, including marginalized communities [28,29]. Furthermore, there is a requirement to scrutinize the inner workings of CFUGs to determine the actual quality of governance [30].

The Red Panda has been prioritized in the research and conservation interventions in Nepal since the 1980s [16,31]; however, the research, policies, and action plan dominantly deal with the biological and technical aspect. The factors such as governance, ecosystem services, and incentive/benefit sharing to the communities, which are vital from a socioeconomic point of view, are often overlooked [32].

Considering the significance of good governance in effective and sustainable community forest management and red panda conservation, this research aims to investigate the issues of forest management and forest governance in Nepal with regard to sustainable forest management and red panda conservation.

The specific objectives of this study are:

- To explore the literature regarding the history of the development process and current situation of forestry, community forestry, and its users, their governance, and sustainable forest management in Nepal;
- Analyze a case study regarding forest governance and its relation to sustainable forest management in Nepal;
- Analyze forest governance and its relation to red panda conservation in the case study.

In doing so, this study addresses three major research questions:

- What is the history of the forest sector development process as well as the current situation and forest governance in terms of sustainable forest management?
- What is the quality of forest governance in Nepal regarding sustainable forest management, their involvement sector, and marginalization?
- What is the quality of forest governance in relation to the red panda conservation in Nepal?

2. Method

The method used in this research can be divided into two sections. The first part of the study has a literature review giving an overview of the historical and current situation of forest governance and its role in sustainable forest management. In the second part, case studies are presented to analyze the current quality of forest governance using the Cadman framework of principle criteria and indicators (PCI).

2.1. Literature Search and Search Strategies

As per the requirement of the selective literature that gives an overview of the history and development of the forestry sector and forest governance in Nepal and its consequences, a comprehensive literature review was followed [32,33]. Google Scholar, Science Direct, Scopus, Web of Science, the Nepal government ministry of forestry, and the Forest Research Training Centre (FRTC) websites were used to search all peer-reviewed journal articles related to forestry sector history and development in Nepal, from deforestation to community forestry and its user groups, sustainable forest management, forest governance, and standards. As our objective of the research was focused on the review of the history and development of the forestry sector in Nepal with the focus on community forestry development and its relation to sustainable forest management, we had already outlined five main spheres to focus our research on. They were: (i) A brief history of forestry in Nepal, (ii) community forestry in Nepal, (iii) forest ecological classification in Nepal, (iv) forest governance and CFUG and sustainable forest management, (v) forest governance and red panda conservation in Nepal. During the literature search, search terms such as "community forest", "history of forestry in Nepal", "deforestation in Nepal", "community

forest user groups", "sustainable forest management", "forest governance", and "standard" were used. The full content of the selected articles was then reviewed to make sure they matched the objective or sections of our review.

2.2. Case Studies

The local community and stakeholders are crucial in ensuring the sustainable management of natural resources such as forests [34]. The shift from government-controlled environmental policies to more decentralized governance has led to increased academic attention on the quality of institutions in global environmental politics. Thus, it is crucial to understand how the various stakeholders—including the government, NGOs, universities, research institutes, and CFUGs in the private sector—perceive the current system of forest governance. In conjunction with Griffith University, the University of Southern Queensland, the Red Panda Network, and Kathmandu Forestry College (KAFCOL), the survey for the case study was carried out in August and September 2020.

2.2.1. Governance Framework

This study employs the analytical hierarchical framework of principles, criteria, and indicators (PC&I; Table 1 below) to determine how stakeholders perceive present forest governance [15]. It is an analytical method to assess the effectiveness of governance. This framework has been employed in many international and national studies, including in Nepal [34–40]. It is a comprehensive framework that can be applied to increase understanding of the governance of environmental conservation efforts in a broader context. So, two related case studies were followed by the literature review to understand forest governance in general and in specific conservation programs such as red panda conservation.

Table 1. Framework of Principle Criterion and Indicator (PC&I) for evaluating governance quality Cadman [15].

Principle	Criterion	Indicator
"Meaningful participation"	Interestrepresentation	Inclusiveness
		Equality
		Resources
	Organizational responsibility	Accountability
		Transparency
"Productive deliberation"	Decision making	Democracy
		Agreement
		Disputesettlement
	Implementation	Behavioralchange
		Problemsolving
		Durability

Source: Cadman [41].

The framework has a particular emphasis on governance arrangements, which is a collection of distinctive qualities that affect "the interaction between multiple actors pursuing similar goals" [34]. These arrangements include aspects such as equality, accountability, behavior change, decision making, deliberation, dispute resolution, implementation, inclusiveness, interest representation, participation, transparency, resources, and problem solving. Despite the abundance of governance systems that exist today, unified guidelines and standards have remained elusive [41,42]. In order to ensure institutional quality of governance (rather than operational performance) for initiatives operating in the sustainable development policy arena, there were no benchmarks against which competing programs could be measured and compared. An analytical framework that combines these

previously different two most crucial components of any governance system, structure and process, has been developed as a result of recent research on global governance and its relationship to sustainable development and natural resource management (forestry) [16]. Two principles make up the framework used in this study: meaningful participation and productive deliberation. Meaningful participation is broken down into two categories: interest representation, which encompasses indicators such as inclusiveness, equality, and resources, and organizational responsibility, which encompasses indicators such as accountability and transparency. The principle of productive deliberation is divided into decision making and implementation criteria. Democracy, agreement, and dispute resolution are three different indicators tied to decision making, while behavior change, problem solving, and durability are linked to criterion implementation.

The meaning of these indicators is presented below. While asking the respondents to give Likert scale scores of them, they were first clarified regarding what each of these means.

1. Inclusiveness: Evidence exists that all stakeholders are properly represented, regardless of gender, caste, or class, with an emphasis on including and involving indigenous and marginalized groups in all aspects of forest governance, management, and red panda conservation.
2. Equality: Evidence exists that all stakeholders' perspectives, particularly those of marginalized groups and rights holders, are taken into account beginning with the project proposal preparation stage, when choosing program activities, and when making decisions.
3. Resources: Evidence exists that there is a provision of financial, technical, and human resources for alternate means of subsistence and economic empowerment to Dalits and other marginalized groups who depend on the forest for their survival.
4. Accountability: There is proof that all training, programs, and initiatives involve all stakeholders, including women and other marginalized groups/communities, as well as governmental agencies at the divisional and municipal levels involved in forest management and red panda conservation. There is evidence that all people, particularly marginalized communities, are held accountable for forest governance programs and actions.
5. Transparency: There is evidence that local communities and other stakeholders were informed about all programs and initiatives through regular meetings, webinars, IEC materials, hoarding boards, websites, and the broadcasting of reports and publications.
6. Democracy: There is evidence that all relevant stakeholders, including Indigenous people and marginalized groups, are actively involved in democratic decision-making processes such as the planning, prioritization, and implementation of forest governance programs in forest management and red panda conservation, ensuring that their perspectives and preferences are taken into account.
7. Agreement: Evidence exists that agreements are reached by consensus among all stakeholders based on majority votes.
8. Dispute settlement: Evidence exists that disputes are resolved through proper consultation and discussion with relevant parties and in coordination with relevant institutions and government bodies, depending on the nature of the dispute, in the context of forest management and red panda conservation.
9. Behavior change: There is evidence of the implementation of a policy in the Ministry of Forest and Environment of the Government of Nepal or other for payment of ecosystem services in the context of forest conservation and tree planting as well as rules for the use of resources such as timber, fodder, fuelwood, bamboo, and grass from the forest area, and for the cultivation of potential herbs and non-timber forest products.
10. Problem solving: Evidence exists that proper forest management plans and activities are being implemented, including identifying the causes of deforestation and degradation and developing strategies to address them.

11. Durability: Evidence exists of long-term planning and support, network establishment in the forestry sectors, and coordination and collaboration with formal and informal institutions to ensure the sustainability of the program.

Governance quality in these case studies has been assessed based on these indicators associated with (i) overall forest governance and (ii) red panda conservation and its comparisons with general forest governance. The study evaluated governance quality, performance on indicators, and the variation in stakeholder perception of the governance. To do so, a set of 15 questionnaire (included in the additional materials, and can be found at Supplementary Materials) were developed which includes the questions regarding the Likert scale quantitative rating of the indicators as well as reasoning statement of why they gave that score to it. The quality of governance is measured at the indicator level by analyzing the ratings and reasonings from respondents.

2.2.2. Research Design, Sampling, and Data Collection

The geographical area range of the research was the 28 districts of the red panda habitat range of Nepal. Only the respondents who were living in the close vicinity of the red panda range were selected as the telephone interview respondents. The online survey respondents were also those living in or, very near to the red panda habitat region or working there or those who have good knowledge about these places. Purposive sampling was used in the first survey (Survey 1), which was conducted online in August 2020 with participants who had internet access using Survey Monkey (https://www.surveymonkey.com/SurveyMonkey, accessed on 31 August 2020). Emails were sent to participants who had internet access, and advertisements and links to the survey were shared on Facebook and partner websites to reach national and international participants (Red Panda Network (RPN) and KAFCOL. Marginalized communities are difficult to be reached via online sources, as poverty impacts access to smartphones or computers, while a lack of education impacts individuals' technological skills, impeding their ability to participate in online research [43]. Consequently, mixed-methods research approaches were administered to determine the views of those participating in or affected by forest governance. In total, less than 10% of those who were marginalized responded to the online survey. As a result, a telephone interview was designed and carried out to reach the stakeholders who could not be contacted online due to a lack of resources. In order to reach stakeholders who lacked internet access, a telephone survey was conducted in September 2020. We were able to collect responses from 184 respondents. Our plan to reach the marginalized stakeholders was actually through the field visit and household survey, which involved directly meeting them. However, the timing of the survey coincided with the COVID-related lockdowns or restrictions. This was the reason that we transferred to conducting the survey over the telephone. Initial respondent recruitment took place through CFUGs, and after that, snowball sampling was used to broaden the geographic reach and response rate. Before the survey was conducted, a consent form was created and included in the survey along with the questionnaire.

All respondents were questioned about how they felt about forest governance generally and the red panda conservation programs. As already mentioned, on a 5-point Likert scale, participants were asked to rank all 11 governance characteristics: one for very low to five for very high. The telephone questionnaire were performed in the Nepali language by two of the research fellows in our team of authors. These data were then analyzed for the respondents view regarding the forest governance and red panda program governance.

This section presents the information from two surveys: online (having access to the internet) and telephone (having telephone access) surveys. In total, 355 respondents were surveyed: 171 from an online survey (Survey 1) and 184 from telephonic interviews (Survey 2).

The total online respondents consist of (Table 2) non-governmental organizations, the government, research/academia, youths, the private sector, zoological organizations, marginalized groups, CFUGs, herders' groups, forest guardians, and others. Youths, media

and journalists, the private sector, tourism, and online retail are categorized as other additional categories. Out of the 171 respondents from the online survey, 31% were from others, 30% were from non-government organizations (NGOs), 16% were from government organiztions, and the remaining 15% were from research/academia. The "Others" group in the online survey included youths (self-identifying based on age), a representative from media; online retail; tourism operators; self-identifying as the private sector, and forest-based industry. Women, Dalits, indigenous groups (IP), Madhesi, and the people who live in remote areas and do not have access to the internet fall within the category of marginalized people in the case of Nepal to our list of respondent [26,27,43–51]. So, less than 10% of the online respondents were found to be marginalized. A telephone survey interview of 184 respondents were carried out, targeting those who could not be reached due to a lack of internet and computer resources. Out of these 184 telephone respondents, 42% were from marginalized groups, 21% were members of CFUGs, 16.5% were forest guardians, and 10% were herders. In contrast, NGO representatives made up 4%, and the same percentage was from the government. Almost 80% of the Survey 2 respondents live in villages adjacent to the red panda habitat, which are spread in 28 hill/Himalayan districts of Nepal. Some respondents represent organizations that work to raise the voices of marginalized people, such as women, indigenous peoples, Dalits, and herders. The breakdown of both sets of survey respondents is presented in Table 3.

Table 2. Breakdown of respondents to two surveys on the quality of forest governance in Nepal.

Online Survey August 2020			**Telephone Survey September 2020**		
Sector	**Number**	**Comments**	**Sector**	**Number**	**Comments**
NGOs	34	Active in forest and wildlife conservation	Community forest users	38	Users without internet
Government	27	Forest ministries at national and sub-national levels	Dalit	26	Low-caste
Research/Academia	25	Universities and research institutions	Indigenous peoples' Organization	17	NGOs active in the advocacy of the rights of Indigenous people
Youth	19	Self-identification on the basis of age	Women's organization	36	Advocates for women's rights
Private Sector	13	Online retail (2); tourism operator (5); self-identifying as 'private sector' (6)	Herders' group	19	Rears free-range livestock
Zoological organization	10	Zoos and conservation foundations	Forest guardians	30	Trained as wildlife monitors by Red Panda Network
Marginalized group	10	Women's organization (5); Dalit (2); indigenous peoples' organization (2); Madheshi (1)	Others	18	Other NGO (7); Government (7); Research/academic (1); Tea trader (1); Forest-based industry (1)
Others	33	'Other' (19); donor organization (6); community forest users (4); media (4)			
Total	**171**		**Total**	**184**	

2.2.3. Statistical Analysis

Statistical analysis was conducted to assess whether there is a difference in perception of governance. *T*-test compares the means between two groups [52]. A *T*-test was conducted to assess the difference in perception between online and marginalized people (from a telephone survey). A Z-test was conducted to test the significance of the difference between the perceptions of online and telephone survey respondents regarding forest governance and red panda conservation programs for each indicator [53]. A p-value of < 0.05 was regarded as significant.

3. Results and Discussion

3.1. History of Forest Sector Development Process, Forest Governance and Its Relation to Community Forest, SFM, and Red Panda Conservation

3.1.1. A Brief History of Forestry in Nepal

Despite their importance to livelihoods and the country's economy, Nepal has a long history of deforestation, and its forests have been managed under various regimes, which can be categorized as pre-nationalization (before 1957), nationalization (1957–1976), and decentralization (1976 onwards) [54]. The history of severe deforestation dates to the period before 1768 when Nepal underwent unification. Deforestation further intensified during the Rana dynasty from 1846 onwards [55]. Nepal faced massive deforestation in the 1950s and 1960s [56]. The World Bank's Forestry Sector Policy Paper (1978) reported the existing forest stock in Global South countries (estimated at 1200 million hectares of mature forest) was consumed at the rate of 15 million to 20 million hectares a year. At that rate, assuming no growth in demand, the remaining tropical forests would be consumed in about 60 to 80 years.

The National Forest Plan of 1976 recommended district-wise preparation of Forest Working (management) Plans (FWP); however, only a few districts formulated the FWPs. Apart from the implementation of some cultural operations and timber stands improvements, there was a lack of enforcement of the management plans. Here, the "cultural operation" is referred to the traditional silvicultural operation being followed by the local communities, such as removing dead, dying, and diseased trees, cleaning or clearing up/burning dead leaves and shrubs, etc. which are indirect practices during the process of fetching their daily forest needs of firewood, fodder, timber, and bedding materials [55,56]. After decentralization, all the District Forest Offices (DFOs) were directed to prepare District Forest Schemes (DFS) in 1984. DFS was formulated for five years by all the DFOs in 1988, but the lack of technical, financial, and human resources, institutions, and other issues hindered its implementation [57].

3.1.2. Community Forestry in Nepal

Community forests are one of five national management regimes recognized by the Forest Act (1993 and 2019). The Act has defined community forest management as the "National Forest handed over to users' group for the development, protection, and utilization of common interest, in the interest of the community". Nepal has also introduced additional community forest management categories, including collaborative forest management; community-based watershed management; buffer zone community forestry; and integrated conservation area management [58]. The details about the major forest management regimes in Nepal are presented in Table 3.

Table 3. Major forest management regimes in Nepal.

Management Regime	Land Ownership	User Rights	Management Authority	Current Land Use
Private Forests	Individuals and organizations	Individuals and organizations	Individuals and organizations	Forest plantations on private lands
Government-Managed Forest	Government of Nepal	Government of Nepal	Department of Forests	For government revenue
Community Forest	Government of Nepal	User groups	Local communities/ User groups	Generating incomes; meeting the need of households
Collaborative Forest	Government of Nepal	User groups (partial use rights)	State agencies and User groups	For forest products and generating revenues
Leasehold Forest	Government of Nepal	Leasehold groups	Leasehold groups	Generating income among those living below the poverty line and for fodder
Religious Forest	Government of Nepal	User groups	Local communities/ User groups	Protecting religious site; use for religious activities by the religious body/institutions
Protected Area System	Government of Nepal	Government of Nepal	Department of National Parks and Wildlife Conservation	Biodiversity conservation and ecotourism
Buffer Zone Community Forestry	Government of Nepal	User groups	Local communities/ User groups	Use of forest products by households, ecotourism, conservation of biodiversity conservation

Adapted from Jhaveri and Adhikari [59].

In the 1970s, the concept of community forestry emerged in the forestry sector, recognizing the dependence of rural people on forests for various resources, including food, fuel, fodder, and building materials [60]. It was realized that secure forest management ownership through community forest user groups leads to a stronger and more effective commitment to conserving and using resources sustainably [59,60]. This approach emphasized three main roles for forestry in rural development: social equity, poverty alleviation, and resource sustainability. It has become a major modality of forest management globally. If all the settings required for its effective functioning are met, it is an effective model in improving the livelihoods of local people and providing socioeconomic and biophysical outcomes [7]. This approach received prominence in the mid-1970s and can now be observed in various countries including Nepal, Indonesia, Korea, Brazil, India, and North America.

The Forest Act of 1961 was amended in 1977 to allow the handover of limited areas of forestland under the Panchayat Forest (PF) and Panchayat Protected Forest Rules of 1978. This marks the official implementation of the community forestry program in Nepal [6]. Several programs were launched, and several reformations took place for proper forest management and the implementation of these rules. The Master Plan for the forestry sector (1989) has emphasized community participation in forest management. The users received full authority to manage forest resources aftger the promulgation of the Forest Act in 1993 [8].

The Act prioritized the establishment of community forest user groups (CFUGs), which comprise traditional local users and provided them legal status by the DFO as "autonomous and corporate institutions with perpetual succession" and the right to sell and acquire forest

products under the approved CFUG constitution. Nepal has been recognized as a global leader in involving community members in the protection and management of forests [56]. The success of community forestry in Nepal is evident in livelihood improvement [61], forest regeneration [4], increasing forest cover [62], generation of ecosystem services [63], and carbon enhancement [64]. Furthermore, in addition to managing local resources, CFUGs have proven to be effective organizations for responding to natural disasters [30] and adapting to climate change [65].

3.1.3. Forest Ecological Classifications in Nepal

Forest ecological classifications (forest typology) are a generally recognized basis for forest management [66–68]. There is different forest ecological classification information used in different parts of the world, as well as Nepal as a forest management base.

The article by Pfister et al. in 1960 [69] on "Classifying Forest Habitat Types Based on Potential Climax Vegetation" describes a method for classifying forest habitat types based on the potential climax, which was being tested in the Rocky Mountains of Montana but applicable in all forests of western North America. The popularity and use of the classification procedure have grown across many different disciplines. Various academics and field experts have found many implications of it along with that for forest management.

In Europe, the European Forest type report of 2006 [70] has talked about the limitation of using forest type categorization only as coniferous, broadleaved, mixed coniferous, and broadleaved forests for reporting on sustainable forest management in Europe. They have suggested a new forest-type classification scheme consisting of 14 categories with further subdivisions to 76 types based on the criteria diagram. Furthermore, Muccino et al. [71] have attempted to record and consolidate the concepts nomenclature of syntax for practical applications, such as calibration of the habitat classification used by the European Union, standardization of the environmental assessment terminologies, managing and conserving natural areas, and planning of landscape and teaching.

Rather than the ecological considerations, the forest policies in Nepal in the past were highly guided by political and economic motivations [72]. Regarding the ecological classification of forests in Nepal, numerous attempts have been made [73]. The first classifications of the Himalayan vegetation were by Schweinfurth and Stearn in 1957 and 1960, respectively [70,71]. The classification by Stearn [74] was popularly used to illustrate the plant species distribution in Nepal [72–74]. The classification by Stearn was guided by the climatological, ecological, and floristic data and provided a broad categorization of vegetation in Eastern, Central, and Western Nepal into humid eastern Himalayan flora and dry Western Himalayan flora. However, taking the altitudinal differences into consideration, another researcher, Stainton in 1972 [75], classified the forest types based on the altitude and climate into 35 types, and Dobremez in 1976 [76] further elaborated the classification in detail to 198 categories. Then, this classification was used and simplified by the Biodiversity Profile project (BPP a,b,c,d,e) to 118 categories, which were again revised by the IUCN in 1998 into 59 types and further reduced to 36 categories by the Tree Improvement and Silviculture Component (TISC) in 2002 [77]. This classification is widely popular in Nepal to communicate the forest and vegetation types.

3.1.4. Forest Governance, CFUG, and Sustainable Forest Management in Nepal

Forest governance in Nepal covers different aspects of natural resource management, including forest resources, water resources, and biodiversity. Nepal's Tenth Five-Year Plan (2002–2007), Three-Year Interim Plan (2007–2010), and Poverty Reduction Strategy Paper (2002–2007) identify good governance as one of the essential mainstays of improving management [18,77]. The National Forest Policy, reformulated in 2019, is the umbrella approach for forest management, protected areas, and watersheds [78].

The Forest Act 2019 ensures the management and planning of collaborative forests jointly in collaboration with local people, local governments, and the DFO, with clearly defined roles, responsibilities, and rights for all stakeholders in planning and implement-

ing forest activities [17]. The District Forest Sector Coordination Committee (DFSCC) is primarily responsible for planning, monitoring, and implementing forest entities at the district level, involving both governmental and non-governmental stakeholders [17]. To implement federalism in Nepal's forestry sector, the government of Nepal established 84 DFOs under the Provincial Forestry Directorate and Ministry of Industry, Tourism, Forest, and Environment [17]. These institutions are responsible for managing all types of forest and providing technical support to local CFUGs and private forest owners as well (MoFE 2019d).

The policies and plans of Nepal, including the 14th plan approach paper [79] and the National Climate Change Policy 2019 [80], have prioritized capacity building and the empowerment of local communities. Likewise, the National Ramsar Strategy and Action Plan (2018–2024) [81] and the Forestry Sector Strategy (2016–2025) also focus on the capacity building and engagement of stakeholders at all administrative levels. The National Biodiversity Strategies and Action Plan 2014–2020 emphasizes gender equality and women's empowerment [82], and the Fourteenth Periodic Plan (2016/17–2018/19) stresses the need for livelihood improvement through employment generation [79]. The Forestry Sector Strategy also emphasized gender equity and social inclusion (GESI) and the establishment of GESI forums at the national and sub-national levels [83].

Forest governance in Nepal consequently has a particular focus on mutual, autonomous, and community forest management [83,84]. Much of this is due to the historical evolution of community forest management in the region and community forestry in particular in Nepal as a successful approach to forest governance [40,85]. Effective governance is the cornerstone of community forestry and is important for both SFM and improving the incomes of local people [86].

Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (For editor: insert 'p. 41′) [87]. In 1992, the United Nations Conference of Environment and Development (UNCED) successfully negotiated international conventions addressing desertification, climate change, and biological diversity. These were substantively addressed in the outcome document of the conference, Agenda 21, but governments, businesses, and civil society were unable to reach the same level of consensus as to how to combat deforestation, creating instead a 'non-legally binding authoritative statement of principles for a global consensus on the management, conservation, and sustainable development of all types of forests' [88]. This document, the *Statement of Forest Principles*, was appended to *Agenda 21* and incorporated much of its language regarding sustainable development and acknowledged the need to define criteria and indicators (C & I) for sustainable forest management (SFM) [89]. SFM has largely been promoted through the development of regional processes aimed at developing C&I for sustainable forestry under the auspices of the Intergovernmental Panel on Forests (1995–1997), the Intergovernmental Forum on Forests (1997–2000), and the United Nations Forum on Forests (2000 and subsequently), which encouraged members to develop national forest programs and national forest action plans [90].

On the ground, SFM is meant to encourage forest use in such a way that a forest's environmental, economic, and social functions are maintained and can be demonstrated by Criteria and Indicators (C&I) for assessing, monitoring, and reporting management at national, regional, and local levels [36]. The Global South countries have developed some C&I processes of their own, but they have also shown a preference for community forest management and the creation of long-term forest policy programs supported by agencies such as the World Bank, aimed at funding, supporting, and encouraging sustainable practices [90,91].

The uptake of SFM in Nepal is exemplified by the Forest Management and Utilization Development Project, which started forest management plans in the Bara and Rautahat districts of Terai in 1993 with support from the Finnish government and implemented them for over 5 years [57]. SFM, its practices, and its relationship to community forest management

have been much discussed [92], as it is recognized as a key component of the community forestry program in Nepal [8]. Various policies and plans in Nepal have promoted and prioritized SFM, including the Multi-Stakeholder Forestry Program; the National REDD+ program [93]; the National Forest Policy (2019), and the Forestry sector strategy (2016–25). The country's progress in SFM has resulted in increased forest area coverage and benefited local communities through empowerment and capacity building [94]. In addition, monitoring, reporting, and management tools and methods have been developed at community and national levels [91,94,95]. The effort to ensure the sustainable management of all forest types in Nepal has been acknowledged by the Forest Stewardship Council (FSC), which recently recognized Nepal's National Standard for Forest Certification [96].

Effective governance is the cornerstone of community forestry and is important for both SFM and improving the incomes of local people [86]. Sustainable forest management is the subject of many studies and surveys. Among the important aspects of forest management is the improvement of forest production efficiency through wood production optimization and, as a result, the preservation of forests, as discussed in some recent reviews [96,97]. This will provide motivation to enhance their forest governance because it will economically benefit both the local government and CFUG.

The constitution and the operational plan are central to the governance frameworks underpinning CFUGs [98]. Each CFUG is authorized to make rules related to the governance of the CFUG, which becomes operational after receiving approval from the relevant forest authority [99]. CFUG has CFUG members from the community who resides nearby CF and use the forest resources. The community households who want to utilize the CF resources (such as fodder, fuelwood etc.) and take part in its management and conservation can be members of the CFUG. Each CFUG has a CF members-elected executive committee, comprising nine to 11 members with at least 50% women members including the roles of secretary or the chairperson, who are elected for two to three years and are responsible for some of the forest management decision making on behalf of the CFUG [17]. The Federation of Community Forest Users Nepal (FECOFUN) is the peak public organization created to advance, ensure, and advocate for local CFUG rights in regular forest governance matters within Nepal [30].

3.1.5. Forest Governance and Red Panda Conservation in Nepal

Poor governance may undermine how people view the natural environment, including forests and wildlife. Excluding local communities from conservation areas in the name of environmental protection, for example, can sometimes exacerbate environmental degradation rather than prevent it [100]. Conversely, decentralizing power and authority, and returning them to the community can create an undue burden of responsibility and reinforce power inequalities at the local level, resulting in increased logging and poaching [101]. If they are not properly managed, it can also increase human-wildlife conflict, and there is a need to provide resources for participatory management to ensure the protection of an area's natural values [102]. Consequently, ensuring good governance in forest management, and the interactions between different social groups, is critical in ensuring the sustainable use of natural resources and protecting biodiversity. In Nepal, encouraging community forestry outside reserves and establishing plantations has led to an improvement in forest conditions, although illegal logging, fires, and uncontrolled grazing continue to be drivers of deforestation [62].

Nepal is home to the Himalayan red panda, which is an endangered species that is distributed along with the Asian countries of China, India, Nepal, Myanmar, and Bhutan [103]. The presence of red pandas within a potential habitat of 23,977 km^2 is recorded in 24 out of 77 districts in Nepal [104]. Although the red panda generates several benefits in terms of social, economic, and ecological services [19], this species faces various threats, including habitat destruction and fragmentation, poor conservation awareness, poaching, livestock grazing, water scarcity, road construction, human disturbance, forest fire, extreme climate, etc. [19,104].

Around 70% of the total red panda habitat lies outside the protected areas in Nepal, in the government-managed forest and the community forest [19]. Thus, the establishment of good governance in these government-managed and community forests within the red panda habitat is essential and, more importantly, is the key instrument in achieving red panda conservation objectives [105].

Thus, in this article, we have presented case studies that investigate the stakeholders' (including the CFUG) perceptions of the issues of governance in community forest management and red panda conservation.

3.2. Case Studies

3.2.1. Stakeholders' Attitude toward Governance in the Community Forestry

The results reveal a range of perceptions among respondents (Table 4a,b) regarding the governance of community forests and sustainable forest management using Cadman's governance framework. We tried to analyze the perception of govornance, the difference in perception between online and marginalized people (from the telephone survey; Table 4a), and the difference between the perceptions of different sectors (Table 4b,c). There was no significant difference ($p < 0.05$) in the overall perception of stakeholders about governance quality among the online and telephone survey respondents and their sectors. Out of the 11 indicators of governance, "problem solving" received the highest rating, while the lowest rating was for "resources", indicating still a lack of resources or a proper benefit-sharing mechanism in the resources while maintaining good governance in problem-solving-related activities. Evaluating the response of the governance systems can provide insight into how they influence forest management practices [106].

The respondents in the study reported that they did not have enough financial, technical, and human resources for forest management. This aligns with previous research on the perceptions of global stakeholders regarding the governance of clean development mechanisms and reducing emissions from deforestation and forest degradation (REDD+), as well as other studies on the topic [38,39]. The lack of all these economic, technical, and human resources can hinder forest management activities and effective forest governance, particularly when it comes to capacity building [107]. While capacity-building programs can support local aspirations and conservation and development objectives, they can also present challenges [108]. Pujo et al. [109] have suggested that fostering cooperation among local communities through capacity building and community-based forest management may be key to the success of community forestry efforts.

Those who answered the online survey consistently gave higher ratings for various aspects of forest governance than telephone respondents, except for the marginalized groups in the online survey. The small group of marginalized respondents in the online survey and the more numerous marginalized groups in the telephone survey had a lower rating on forest governance quality. This is particularly marked in these groups' ratings of the indicator for *resources*, which failed to reach the threshold 'pass' of 2.5 amongst all these respondent groups. Regarding the inadequate distribution of the resources, a women's representative said, "Capacity building of women and marginalized communities with financial and technical resource support will play a vital role in conserving forests". One indigenous woman respondent referring to program intervention said, "These programs should provide seed money to indigenous poor women to promote their traditional knowledge".

Table 4. (**a**): Overall, online and telephone survey details of respondents' perceptions on the quality of forest governance in Nepal. (**b**): Online survey of respondents' perceptions on the quality of forest governance in Nepal. (**c**): Telephone survey of respondents' perceptions on the quality of forest governance in Nepal.

Indicator	Inclusiveness	Equality	Resources	Accountability	Transparency	Democracy	Agreement	Dispute Settlement	Behavioral Change	Problem Solving	Durability	Total (Out of 55)
						(**a**)						
Average rating	2.9	2.7	2.5	2.8	2.7	2.8	2.9	2.8	3.1	3.2	3.1	31.3
Online survey	3.1	2.9	2.6	2.9	2.7	2.9	3.1	3.0	3.6	3.8	3.4	34.0
Telephone survey	2.7	2.5	2.3	2.7	2.7	2.7	2.6	2.6	2.6	2.5	2.7	28.5
t Stat	4.31	*p* value	<0.05									
						(**b**)						
NGOs (34)	3.3	3.0	2.6	3.2	2.8	3.0	3.0	3.0	3.6	3.7	3.1	34.3
Government (27)	3.3	2.9	2.8	3.2	3.0	3.2	3.2	3.2	3.4	3.8	3.6	35.6
Research/Academic (25)	2.9	3.0	2.5	3.0	2.7	2.8	3.2	3.1	3.6	3.6	3.4	33.8
Youth (19)	3.0	2.8	2.6	2.7	2.4	2.7	3.3	2.9	3.6	3.5	3.4	32.9
Zoos and Conservation Foundations (10)	3.3	2.9	2.4	3.1	2.9	3.0	3.5	3.3	3.8	4.1	3.7	36
Marginalized group * (10)	1.8	2.2	2.0	2.1	1.9	2.1	2.2	2.6	3.3	3.7	3.2	27.1
Private Sector (13)	3.6	3.1	3.2	3.1	3.1	3.4	3.2	3.0	3.7	4.2	3.5	37.1
Others (33)	3.5	3.1	2.5	2.9	2.9	3.1	3.2	3.2	3.5	3.8	3.4	35.1
Weighted average **	**3.1**	**2.9**	**2.6**	**2.9**	**2.7**	**2.9**	**3.1**	**3.0**	**3.6**	**3.8**	**3.4**	**34.0**
						(**c**)						
Community forest users (38)	3.2	2.8	2.4	2.9	2.9	2.9	3.0	2.7	2.8	2.6	2.8	31
Dalit (26)	1.8	1.6	1.4	1.7	1.6	1.5	1.5	1.5	1.5	1.5	1.5	17.1
IP Organization (17)	2.2	1.9	2.0	2.2	2.1	2.1	2.1	2.0	2.0	1.9	2.1	22.6
Women's organization (36)	2.6	2.3	2.1	2.5	2.5	2.5	2.2	2.2	2.5	2.3	2.6	26.3
Herders' group (19)	3.4	3.3	2.9	3.6	3.5	3.5	3.6	3.4	3.4	3.5	3.6	37.7
Forests guardians (30)	3.6	3.4	3.0	3.7	3.7	3.8	3.7	3.7	3.7	3.6	3.8	39.7
Others (18)	2.4	2.1	2.0	2.2	2.3	2.4	2.3	2.4	2.2	2.2	2.3	24.8
Weighted average **	**2.7**	**2.5**	**2.3**	**2.7**	**2.7**	**2.7**	**2.6**	**2.6**	**2.6**	**2.5**	**2.7**	**28.5**

Marginalized group * includes Dalit, Indigenous peoples' organization, Madhesi, and Women's Organization. Weighted average **: Weighted average of all sectors.

An analysis of stakeholder perceptions by sector can inform policy decisions by highlighting which areas require more attention [110]. In this study, stakeholders with more resources generally had a higher level of confidence (>60%) in the governance of forest management strategies. Researchers, NGOs, and government representatives tended to give higher ratings. However, there are weaknesses in the governance mechanisms within community forestry management in Nepal, such as elite dominance and unequal benefit sharing between marginalized communities and other groups [86]. This may be a contributing factor to the lower ratings given by community forestry user groups (CFUGs) [19–25]. Providing leadership training to CFUGs and ensuring accountability and transparency could help address these issues and improve the benefit-sharing process [18,19,21].

Of the marginalized groups, Dalit respondents provided the lowest rating: an overall score (of 17.1 out of 55, the lowest indicator overall). Meanwhile, the individual indicator ratings and overall scores in the online and telephone cohorts varied. There is only one noteworthy similarity across both survey cohorts—*resources* are the lowest-rated indicator, demonstrating some degree of consensus regarding the capacity of forest governance in Nepal to meet respondents' needs. Beyond this, however, there was a divergence in the highest-rated indicators between cohorts.

On a somewhat positive note, *Inclusiveness* was the highest rated indicator among the telephone survey respondents (2.81), although here, the consistently higher ratings given by herders (3.4), forest guardians (3.6), and forest users (3.2) have impacted the overall rating; marginalized groups did not rate this indicator highly at all.

Significantly, online respondents rated *Problem solving* as the highest indicator overall (3.7); in the case of the telephone respondents, this indicator achieved only 2.53, which is perhaps a sign that these respondents were not especially optimistic regarding the prospect that forest governance would solve the problems confronting forests in Nepal. One respondent from the CFUG committee said, "We have solved the problem by discussing each other's members". Marginalized respondents provided low ratings for problem solving. A Dalit woman from CFUG who gave a low rating for problem-solving stated, "CFUG programs should be concentrated on solving problems of poor Dalit women by creating a job atthe local level".

In summary, the results appear to demonstrate a different perception between marginalized and non-marginalized groups and between resourced and under-resourced societal groups on forest governance (<0.05).

3.2.2. Comparing Stakeholder Attitudes to Governance of Forest and Red Panda Conservation

The governance structure and perspectives of the same stakeholders in the same forest region, but with two management philosophies (general community forest management and red panda conservation), were the subjects of our interest. This will finally enable us to comprehend whether or not there will be a significant difference in the governance process and perception, as well as how it will affect the identical operating area (the forest) and stakeholders. This will eventually help us to understand their similarities and dissimilarities in governance perception. The comparison of the marginalized and online stakeholders' perceptions towards the governance of forest management and the red panda is presented in Table 5 below. There was a significant difference (<0.05) in the perceptions of online and telephone survey respondents regarding forest governance and red panda conservation programs for each indicator assessed.

Assessing the total of the ratings given by online and marginalized/telephone survey respondents for the governance of the forest and red panda conservation program, the rating given by the online respondents for the governance of the red panda conservation program (35.9/55 total) is the highest, followed by an online rating for governance of Community Forest (CF) management (34/55), then telephone survey rating (28.5/55), and finally the least by the marginalized respondents for the governance of the red panda conservation programs (27.5/55). The statistical test showed a significant ($p < 0.05$) result in

the overall perception of stakeholders about forest governance and red panda conservation programs in both online and telephone surveys. So, we can say that the management strategies for red panda conservation were generally considered effective by online stakeholders. This was less so the perception ofmarginalized stakeholders (telephone).

Table 5. Comparison between the perceptions of online and telephone survey respondents to forest governance and red panda conservation programs (August–September 2020) *.

	Online	Telephone			Online	Telephone		
Programs or Activities	**Forest Governance Generally**	**Forest Governance Generally**	**Z**	***p* Value**	**Red Panda Conservation Programs**	**Red Panda Conservation Programs**	**Z**	***p* Value**
Inclusiveness	3.1	2.7	5.86	<0.05	3.3	2.5	8.1	<0.05
Equality	2.9	2.5	7.1	<0.05	3.2	2.4	8.13	<0.05
Resources	2.6	2.3	7.3	<0.05	2.9	2.3	7.84	<0.05
Accountability	2.9	2.7	6.9	<0.05	3.2	2.6	8.2	<0.05
Transparency	2.7	2.7	6.55	<0.05	3.1	2.5	8.11	<0.05
Democracy	2.9	2.7	6.77	<0.05	3	2.6	8.73	<0.05
Agreement	3.1	2.6	7.95	<0.05	3.3	2.6	7.92	<0.05
Dispute settlement	3	2.6	6.73	<0.05	3.2	2.6	7.68	<0.05
Behavioral change	3.6	2.6	7	<0.05	3.6	2.5	8.78	<0.05
Problem solving	3.8	2.5	6.86	<0.05	3.8	2.5	7.7	<0.05
Durability	3.4	2.7	6.18	<0.05	3.4	2.6	7.68	<0.05
Total (out of 55)	34	28.5		<0.05	35.9	27.5		<0.05

* Summary of all results, with weighted averages.

In the online survey, the governance rating of all the indicators for the red panda conservation programs was always higher than that for the community forest management governance, while it was just the opposite in the case of the marginalized for most of the indicators.

It is noteworthy to see that there is a difference in the perspectives of stakeholders from different sectors, given that they generally share cultures, values, and social norms and are subject to the same laws and regulations. This variation in perception suggests that stakeholders, particularly marginalized stakeholders, may need to be more informed about CF management rules, regulations, and policies.

The low ratings from marginalized stakeholders suggest that their issues are not being adequately addressed. This is particularly important because marginalized communities have more direct interaction with the forest and red pandas. These groups feel a greater need for improvements in governance, especially in red panda conservation programs, compared to non-marginalized groups. People living in the vicinity of forests, who are often marginalized and financially disadvantaged, rely heavily on forest resources for their livelihoods [54]. They have different needs and face different challenges related to forest products (such as fuelwood, fodder, and leaf litter) than more affluent groups [111]. The relative vulnerability and limited resources of poor and marginalized groups make it necessary to develop enhanced or secure alternative livelihood strategies in conservation-related programs [112]. To do so, concerned stakeholders and organizations should work on providing efficient and optimal technical, economic, and human resources package support to them.

From the online survey of respondents, assessing their perceptions of the governance of the CF, the governance of the red panda conservation has the highest rating for problem solving and the lowest for resources. While from the marginalized communities, the rating for almost all the indicators is either 2.6 or 2.5, except for resources, which is only 2.3.

In this study, respondents reported feeling that the resources provided to them were insufficient. On the one hand, financial resources are often seen as insufficient, while on the other hand, allocated resources may not reach marginalized groups due to elite dominance and a lack of timely communication about project operations. Lack of resources (all the

technical, financial/economic, and human) can negatively impact participation in decision making, as seen in northern Thailand, where the development of local capacity for decision making and adaptive management has been constrained by inadequate information, financial resources, and supportive legislative mechanisms [113]. Local communities, who often lack resources and have more direct interaction with red pandas due to their proximity to forests, may benefit from increased resources and strengthened capabilities at the ground level and with local institutions, which can help enforce rules and regulations and aid in conservation efforts [113–115]. Therefore, it is important that stakeholders have the necessary financial, technical, institutional, and educational resources to ensure meaningful participation and good governance rather than simply token involvement [116].

This is a matter of concern, as the resource-poor communities interact with red pandas and forests more directly and frequently. Consequently, policies and strategies should prioritize the needs and perspectives of forest-dependent communities and marginalized groups in particular around training and capacity building as well as income generation and alternative sources of livelihood at the same time while encouraging and maintaining red panda habitat [117].

4. Conclusions

Nepal's forests have witnessed tremendous changes from feudalism (before 1957) to state-based forestry (1957–1970) and then to decentralized forestry (after 1970). The Nepalese Forestry Plan (1976) introduced the principle of managing forests for local people to improve social stability, economic progress, and environmental sustainability. Furthermore, CFUGs were recognized as self-governing, autonomous, independent, permanent, and corporate institutions that are eligible to receive the benefits of forest management.

Various management modalities have been adopted in Nepal to conserve and manage forest resources, including government-managed forests, collaborative forests, leasehold forests, religious forests, private forests, agro-forests, urban forests, and public land forests, and they have been effective in restoring degraded land and wildlife habitats [42]. However, community forest remains the most popular participatory resource management initiative. Community forests are widespread and have been successful in strengthening forest governance and increasing linkages and coordination between stakeholders, including women and disadvantaged people in income-generating activities [40,117]. The commitment to conserve and use resources sustainably is placed on a stronger and more powerful basis when there is secure management ownership. Therefore, communities have been given ownership of the forest in order to manage the forest sustainably. However, despite several decades of existence, community forestry still faces some significant problems.

The case studies' findings showed that even though the overall CFs' forest governance rating is not appalling, the perception of it by marginalized individuals is significantly lower. The major challenges, as highlighted by the research data, include insufficient resources and inadequate empowerment of marginalized communities, which is a significant concern, as well as the continued difficulties in achieving sustainable forest management. In addition, the study has found diverse and conflicting perceptions among the same marginalized and non-marginalized stakeholders interviewed in the same forest area and in two different processes (forest management and red panda conservation). This suggests that perceptions are affected by the execution of the governance process and who benefits from it the most. In addition, the marginalized being less happy with the current governance might be due to their voices and opinions not being taken into account by those in positions of power on the executive committee or because some powerful people on the committee are making decisions for them. Marginalized communities have limited access to, and control over, human and natural resources. The issues of inequitable benefit sharing, the dominance of affluent groups, a dearth of alternative livelihood options, and insufficient support for community enterprises are evidence of the failings of existing forest management systems, necessitating a re-evaluation of SFM [97]. The creation of governance standards and associated certification programs for both timber and non-timber products, which meet

the needs of stakeholders, and deliver the conservation of natural resources, represents a potential solution to ensuring the sustainable management of wildlife and forest resources into the future. However, without genuine capacity building for marginalized stakeholders on the ground and the equitable distribution of resources, there is little prospect of a viable future for the forests of Nepal [118]. CF conditions should be improved by mobilizing marginalized people in forest-dependent communities and boosting their livelihoods through the growth of marginalized-led enterprises. Furthermore, building the capacity of marginalized groups by increasing their skills and raising awareness about SFM could have tangible impacts on the ground, including the protection and conservation of Nepal's unique flora and fauna into an uncertain and difficult future.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/land12020493/s1, Red Panda Governance Survey.

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