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Analysing and Applying Stakeholder Perceptions to Improve Protected Area Governance in Ugandan Conservation Landscapes

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Abstract: Given the diversity of active institutions and stakeholders in a landscape, and the difficulties in ensuring inclusive decision-making, evaluating landscape governance can help surface and address underlying issues. In the context of two protected area landscapes in Uganda, where landscape approaches are being implemented through a wider project on landscape governance, we analyse stakeholder perceptions of inclusive decision-making and then use this evaluation to stimulate dialogue amongst stakeholder groups in each landscape. We ask, how can capturing, analysing, and collaboratively applying people's perceptions address inclusive decision-making in landscape governance? We collected and analysed perceptions using SenseMaker®, a software package that enables analysis of micronarratives (stories) from the field based on how respondents classify their own stories, using triads, dyads, stones, and multiple-choice questions. This self-categorisation by the respondent reduces bias in the analysis and allows the micronarrative to be cross-examined in a variety of ways when analysed using Sensemaker. This analysis created an integrated view of the stakeholder's perceptions about inclusive decision-making in landscape governance. The results show large portions of the respondents feel their voices are neglected, and management of the landscape is poor in Mount Elgon, while in Agoro-Agu, it is the opposite trend. During a community feedback process, reasons for these trends were discussed and solutions proposed. Some of the underlying factors include historical relationships with park authorities and displacement during park creation. To more precisely answer our research question, one could have extended stays in the communities studied in these landscapes, using ethnographic methods including interviews and participant observation; nonetheless, our method, including the feedback process, was an innovative and important way to confront our findings with the informants directly and foster collaborative action. We conclude that understanding people's perceptions, including through participatory feedback,

can significantly inform and improve management decisions, help resolve conflicts, and facilitate dialogue between different stakeholders in the landscape.

Keywords: perceptions; Agoro-Agu; Mount Elgon; inclusive decision-making; dialogue; SenseMaker®; communities; landscape governance; Uganda

1. Introduction

Many landscapes are challenged by the competing demands of resources, leaving billions of people and many economies at risk [1]. One response to this risk is the use of a landscape scale, valuable for planning and decision-making. This allows the integration of various sector plans and programs (e.g., agriculture, forestry, conservation) across one social, environmental, and spatial context [2]. Here we define a landscape as "A socio-ecological system that consists of a mosaic of natural and human-modified ecosystems, with a characteristic configuration of topography, vegetation, land use, and settlements that is influenced by the ecological, historical, economic and, cultural processes and activities of the area. A landscape may encompass areas from hundreds to tens of thousands of square kilometres" [3]. Conservation initiatives at the landscape scale became popular in the 1980s [4], when a holistic concept was needed for addressing environmental issues at a broader scale [5]. For the case of protected areas (PAs), the focus of this paper, this approach enabled conservationists to integrate these units into the wider landscape. Since then, the landscape approach has flourished as a concept from the mid-2000s [6] to the present. In this paper, we refer to these areas as PA landscapes, in the same way that one may think of the Serengeti landscape.

Often seen as sets of overlapping ecological, social, and economic networks within a specific area, landscapes are considered to be a good scale for dealing with protected area (PA) issues [7,8] and for achieving sustainability [9]. In this context, landscape approaches (LAs) became popular. LAs are participatory processes for addressing landscape-level issues (e.g., competition for natural resources or land) by bringing together stakeholders from different sectors through decision-making processes or policy-practice integration [4,10]. LAs comprise numerous types, from community-based natural resource management to integrated water resource management [11].

Recent principles which guide implementation of LAs [10] reflect the participatory nature of landscape governance with several focusing on rights and responsibilities, justice, recognition of multiple stakeholders, equity, and the access of information. Improving governance can contribute to enhanced conservation outcomes [12,13], by addressing power, responsibility, accountability, and rights as part of a dynamic process [14]. Natural resource governance is defined as the norms, institutions, and processes that determine how power and responsibilities over natural resources are exercised, how decisions are taken, and how rights-holders and stakeholders (including women, men, youth, Indigenous peoples, and local communities) secure access to, participate in, and are impacted by the use and management of natural resources [15]. At the landscape level, governance is further complicated by the values of stakeholders pursuing their interests, such as food production or biodiversity conservation [16]. Increased attention to LAs and the associated place of governance at the landscape scale allows for greater attention be given to issues around inclusive decision-making [2] and can enable a decision-making space across institutions, processes, and stakeholders (Figure 1).

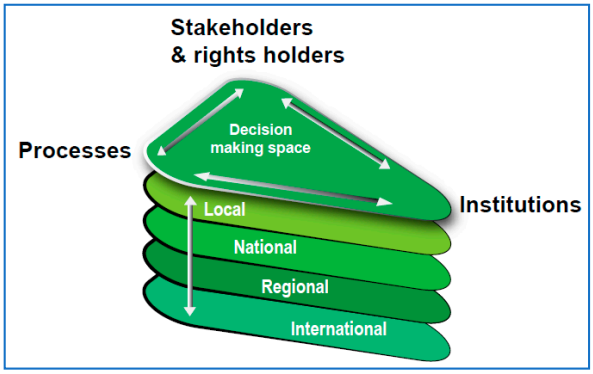

Figure 1. The structure of landscape governance, adapted from [17].

Decision-making processes and institutions are the vehicles through which stakeholders come together to discuss and resolve natural resource issues. Inclusive decision-making in these processes is central to landscape governance and yet remains one of its challenges [18]. Inclusive decision-making is "based on the full and effective participation of all relevant actors, with particular attention to the voice and inclusion of rights-holders and groups at risk of marginalisation" [15:3]. Inclusive decision-making often focuses on participation, which attempts to ensure that rights-holders and stakeholders are represented and can have a say in making decisions [19]. In summarising research on the topic, Oyono and Mandondo [20] indicate that inclusive decision-making is meant to guarantee recognition and protect against marginalisation. Although it is but one aspect of governance [21], it is central to landscape governance and so the focus of this paper. In many landscapes, decisions are not made on a level playing field, with significant differences in the ability of stakeholders to participate and have their voice heard [22].

Landscape governance also must be understood within a landscape's historical and cultural contexts and analysed in reference to the relationships amongst stakeholders in decision-making processes. Landscapes are shaped by inter-relationships of societies; protected area landscapes can be seen as cultural landscapes where societies and nature have evolved together over time [8]. Landscapes within which conservation projects take place are part of broader social-ecological systems where governance influences conservation [23]. Treating landscapes as ahistorical entities erases the ability of people to assert their power to govern them today [24]. Landscape approaches and their governance may reinforce colonial legacies that distorted cultural management arrangements [25]. Historical legacies of particular institutions can leave marks on people and their memories within a landscape where past relations between stakeholders continue to influence present-day power dynamics [26]. Therefore, how stakeholders perceive institutions and their management decisions is key to landscape governance; it may also be decisive on if and how they engage [27].

Although landscape approaches and governance are promoted internationally including by agreements such as the Convention on Biological Diversity [28], landscapes may have several institutions managing portions of them from customary and elected authorities to park managers and private stakeholders, with potentially no landscape-level authority to bring decision-making together. Given the diversity of institutions and stakeholders in a landscape, and the difficulties in ensuring inclusive decision-making, evaluating landscape governance can help surface and address underlying issues such as problems with inclusive decision-making. However, resolving governance issues remains a challenge for many landscape practitioners [29]. In places where LAs are being used, how can governance be improved? One way is through understanding stakeholder perceptions and applying them to learn with stakeholders on how to effectuate change in landscape governance [30].

PA management and governance should include the opinion and perception of the different stakeholders [31], with perceptions forming an important basis of understanding how people view conservation [30]. Stakeholders hold different perceptions, given their socioeconomic and cultural differences [32], and the actions pursued by these stakeholders are often based on their experiences,

culture, knowledge, and perceptions [33]. These perceptions can be used to support inclusive decision-making and promote action [32]. When perceptions are presented back to landscape stakeholders, a space for dialogue can be created where stakeholders can share experiences, learn about issues, identify problems and solutions, and potentially enact change.

In the context of two PA landscapes in Uganda where LAs are being implemented through a wider project on landscape governance, we sought to analyse stakeholder perceptions of inclusive decision-making and then use this to stimulate dialogue amongst stakeholder groups in each landscape. We ask, how can capturing, analysing and collaboratively applying people's perceptions foster inclusive decision-making at the landscape level?

Due to the confluence of diverse climates and altitudinal ranges in its territory, creating a variety of habitats, relative to its area, Uganda is a biodiverse country, with 1742 terrestrial vertebrate species [34] 4816 plant species [35,36], 1300 species of butterflies, and 260 dragonfly species [34]. However, the country lost half of its overall biodiversity value from 1975 to 1995 [37] due to habitat loss, agricultural encroachment, and expansion, climate change effects, and over-harvesting of resources, among others.

Protected areas (PAs) in the country, which shelter an estimated 95 per cent of the animal and plant species [38], fall under two main types in Uganda: forest reserves (24 per cent) and wildlife conservation areas (10 per cent) [39]. Most game and forest reserves were established for colonial interests (hunting, timber, and forest products) during the early 1900s, under the British colonial rule [40]. Nature conservation was not the original objective of PAs [41], and communities were excluded from the resource use and decision-making [42]. Approaches to nature conservation [43] and community inclusion in the conservation policy process [44,45] appeared only later in the 1980s and '90s; this is mirrored in Uganda's policy history (Figure 2). Forest policy in Uganda has followed a similar trend, with a participatory approach occurring in the last two decades [46]. Despite Uganda's PAs not being designed for conservation in the past, they still provide a basis for conservation, if the power relations embedded in their management can be balanced to avoid their use by political elites at the expense of conservation [47].

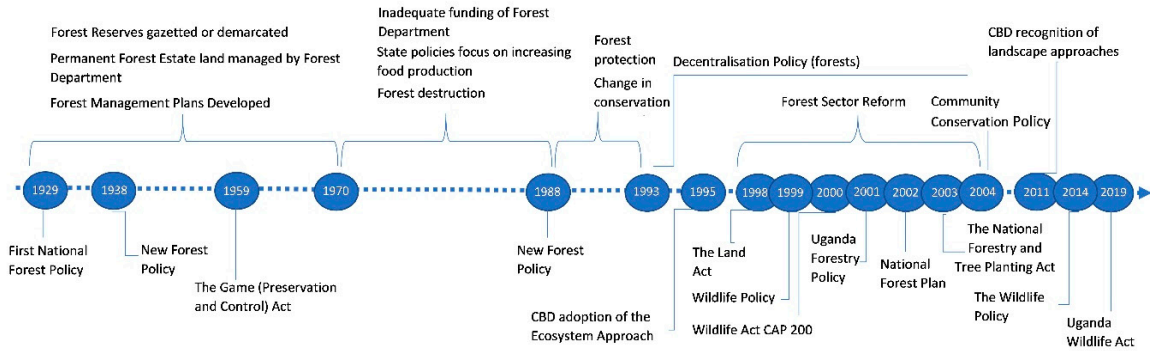

Figure 2. Timeline showing Wildlife and Forest Reserves' main events and policy.

In Uganda, two main categories of forests exist—those within PAs and those on private and communal land. Within PAs, protected forests fall under Central Forest Reserves (CFRs), managed, under the Public Trust Doctrine, for and on behalf of the people, by the National Forestry Authority (NFA), Local Forest Reserves (LFRs), managed by the District Local Governments (DLG) [48], and Private and Community Forests, managed by communities and individuals on the basis of owning the land on which the forests are located (as per the Land Act). In 1996, the Uganda Wildlife Authority (UWA) was established from the Uganda National Parks and Game Department. A semi-autonomous government agency, UWA is mandated to ensure sustainable management of wildlife resources and supervise wildlife activities in Uganda both within and outside the PAs. Currently, UWA manages 10 national parks, 12 wildlife reserves, five Community Wildlife Management Areas, and 13 Wildlife Sanctuaries, in addition to all wildlife outside wildlife protected areas [49].

2. Materials and Methods

The study sites: This study was implemented at two Sites: the Agoro-Agu Landscape (AAL) (also known as East Acholi Landscape) (encompassing the districts of Lamwo, Pader, Kitgum, and Agago and 16 Central Forest Reserves covering 65,548 ha under one Forest Management Planning Area) and the Mount Elgon Landscape (MEL) (the Bududa and Namisindwa Districts and Mount Elgon National Park) (Figure 3). These two sites were selected because both participated in a landscape governance project and are places where the International Union for Conservation of Nature had been engaging with communities for several years. It was realised that both landscapes did not address governance in the whole landscape. In addition, the two landscapes are trans-boundary biodiversity hotspots in Uganda (Mount Elgon being a UNSECO Man and Biosphere Transboundary Reserve between Uganda and Kenya and Agoro-Agu, a Transboundary Forest Reserve between Uganda and South Sudan).

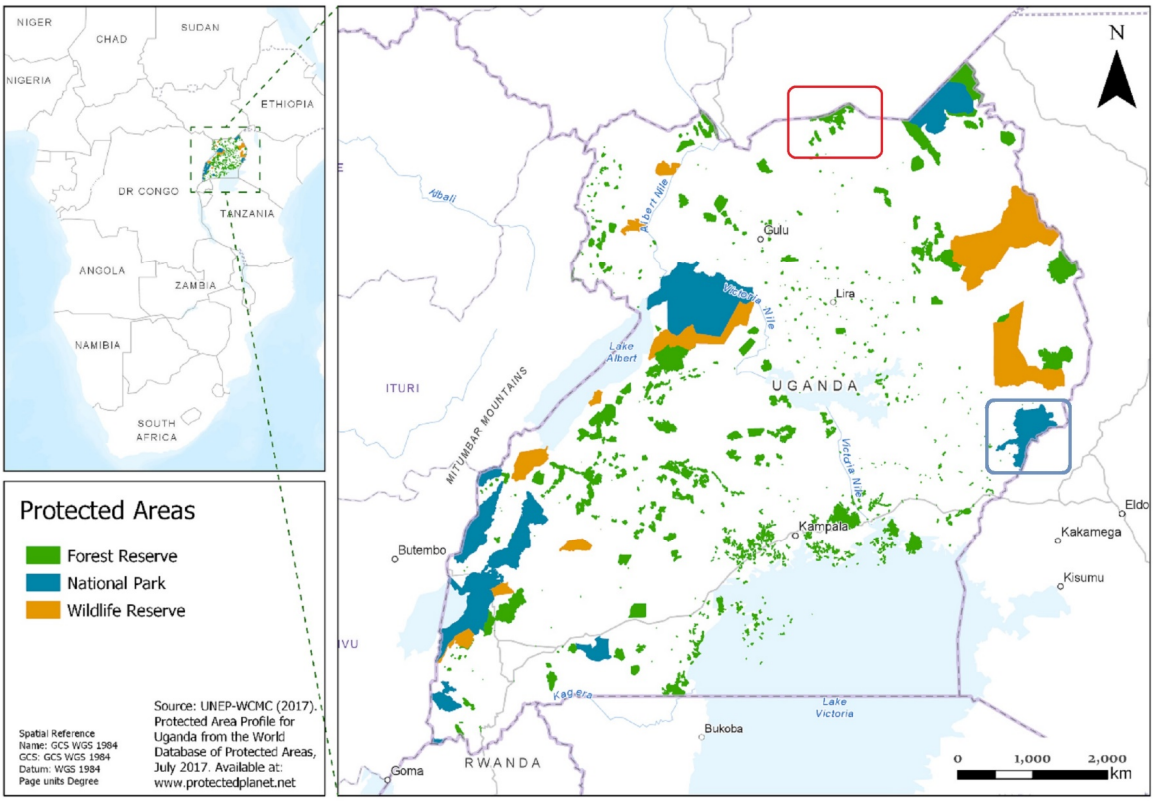

Figure 3. The Agoro-Agu and Mount Elgon Landscapes/study sites. The red square identifies Agoro-Agu, and the blue Mount Elgon.

The work reported here was intended to foster improved landscape governance in each landscape as part of a wider conservation project. It was not meant to compare the landscapes to each other. Notably, these landscapes are managed by different conservation authorities, with different styles of engagement with local communities. Furthermore, the northern Agoro-Agu landscape endured a civil war, while the Mount Elgon landscape did not. Finally, the colonial history with the north focused on combining customary authorities under a single, invented ethnicity and then marginalised these populations vis-à-vis their engagement with southern Ugandan populations, such as those in the Mount Elgon area. These differences are further detailed in the following section.

The Agoro-Agu Landscape (AAL): AAL is part of the Acholi subregion, in northern Uganda. The study site includes the Agoro-Agu CFR, Lalak CFR and vicinities. The Agoro-Agu Forest Reserve (264 sq. kms), was established in 1937, and gazetted as a CFR in 1948, and is part of a transboundary PA complex with South Sudan's Imatong Forest Reserve [50,51]. This area is found in the Lamwo district,

which has a population density of 25.43 people per sq. km (2019 projected). The region's population doubled between 1991 and 2019 [52]. The AAL's main ethnic group is the Acholi. The Acholi are a Luo people, who migrated into northern Uganda from South Sudan. Prior to colonisation by the British, there were approximately 60 chiefdoms, each governed by a *Rwot*, the hereditary leader. In pre-colonial times, important decisions that would impact a community could only be dealt with through consensus of clan representatives. The British grouped these chiefdoms together under a single ethnicity and administrative area, and systematically marginalised the Acholi from schooling to labour [53]. Despite this, the Acholi nationality has been adopted and used to challenge state authority [54]. Customary authority continues today, but the legitimacy of the *Rwot* is sometimes challenged by community members, including youth [55].

The AAL suffered from persistent conflict in the mid-1980s, including the Lord's Resistance Army civil war against Uganda's Government and conflicts in neighbouring South Sudan. Northern Uganda features hybrid governance, where formal state authority simultaneously competes and cooperates with traditional forms of customary authority [56].

The prevalent form of land tenure in the region is customary tenure (93 per cent of lands in Acholiland) [57,58]. The Agoro-Agu CFR is the geographical extension of the Imatong Mountains into the Northern region of Uganda from South Sudan [59]. This mountain region is rich in biodiversity and holds many endemic and endangered species [60]. The vegetation includes Afromontane forests, shrublands, woody grasslands, and bamboos [59]. The Lalak CFR was gazetted in 1948 and covers 2,212 hectares, comprising mainly woodlands and to a lesser extent, grasslands and small-scale cultivation [51]. Although there is no documented evidence that displacement happened when the CFRs were created, they did result in changes in ownership, access and use, a type of displacement [47].

Mount Elgon Landscape (MEL): The MEL is located in southern eastern Uganda along the Kenya border. The national park is 1110 sq. km., and is part of a transboundary PA complex with neighbouring Kenya [50]. The Mount Elgon PA is in the area of two ethnic groups—the Sabiny ethnic group to the north and the Bagisu ethnic group to the south. The Sabiny people were originally pastoral but shifted towards agriculture in the 1980s in light of the introduction of hybrid corn, new ploughing techniques, market expansion, and attacks by the neighbouring Karamojong people [61]. The Bagisu people have lived in Mount Elgon for centuries [62]. Due to colonial pressure on land availability, they migrated northward and are closely related to the Luhya people in Kenya [63].

Areas surrounding the park are densely populated, and the population density on the slopes in surrounding districts is high. In 2002, human population densities in the surrounding parishes ranged from 150 people per sq. km in the north and northeast to more than 1000 people per sq. km in the west [64].

Mount Elgon is an extinct volcano known for its diversity of endemic species and considered by conservation scientists to be irreplaceable [34]. The vegetation consists of four major vegetation types: (a) mixed montane forest (up to 2500 m), (b) bamboo and low canopy montane forest (2400–3000 m), (c) high montane heath (3000–3500 m), and (d) moorland (>3500 m). The high-altitude moorland and heath zones are rich in species endemic to Mount Elgon or shared with other east African mountains [65]. Despite frequent landslides, these occur independently of anthropogenic influence [66].

Mount Elgon was first gazetted in 1929 as a forest reserve, for its role as a watershed and for timber [67]. It was modified in 1993 to a national park status [47] and designated as a UNESCO Man and Biosphere Reserve in 2005. This change in legal status to a national park resulted in increased restrictions of access by local people for their livelihoods, and also access to cultural sites [68]. The MEL has a history of displacement [69]. Endemic species and degraded land justified the evictions of the society [47,70–72]. Parts of the park were encroached due to persistent raiding by the Karimojong who forced the Sabiny people up the mountain, forcing UWA to excise an area of about 75 sq. km from the park for settlement [73]. Estimations of evictions were as many as 300,000 people [74]. Conflicts with managing authorities remain [67], due to high population density, scarce natural resources, and a largely poor population highly dependent on agriculture.

Material: We collected and analysed local stakeholder perceptions using SenseMaker®, a software tool that enables quantitative analysis of micronarratives (stories) from the field [75]. Sensemaking is part of a research tradition which aims to "make sense" of complex situations, including those where power differences are likely in participating groups, allowing for diverse perspectives including strong points of agreement and disagreement [76]. People are storytellers, with narratives forming an important part of their communication [77]. SenseMaker® uses these narratives to access multiple perspectives of complex situations through the identification of patterns around topics of interest and allows for meta-analysis of qualitative data that bridges a gap between case studies and large-sample survey data. This approach has been used by others as a monitoring tool [78] for evaluating farmer's perceptions [79], and in climate change policy [80]. One of the reasons for using SenseMaker® was to gain rapid access to multiple perspectives of complex situations through the identification of patterns around topics of interest. It also allows the respondents to self-signify their story, and thus reduce the risk of imposing external biases during the analysis. In our study, the dataset obtained serves as a benchmark for determining current target stakeholder perceptions about how existing landscape governance approaches meet their expectations with regard to inclusive decision-making, amongst other issues.

Method: The SenseMaker® process comprises multiple steps from designing the framework to collecting and analysing data and then presenting this back to communities (Figure 4). The project team introduced SenseMaker® to all the partners during a two-day workshop in Entebbe, Uganda in February 2018 and presented a draft questionnaire. Participants provided inputs to develop the SenseMaker® Signification Framework, which includes a prompting question that encourages informants to share a compelling story about a topic of interest; after this, sub-questions were asked to enable respondents to add meaning to their story, helping to signify the importance of their story and classify it. Workshop participants decided on the following prompting question: "Reflecting on (Mount Elgon National Park OR Agoro-Agu Central Forest Reserve) can you share a positive or negative experience that you (your family or your community) had in/with this area? Please describe what happened." After the micronarrative was provided in response to the prompting question, participants were asked to "signify" the context of their own story through a series of triad questions which place the micronarrative in the relative context of three concepts, especially those that give insight to trade-offs (Figure A2, Appendix A). Dyads were then used to indicate the relative strength of a particular idea, between two opposing options (Figure A3, Appendix A). Stones were used to make comparisons of three or more elements along two axes to differentiate how groups may perceive the same issue differently (Figure A3, Appendix A) [81]. Multiple-choice demographic questions allowed for secondary analysis of the data. In this analysis, we only focus on a subset of the data collected to answer the research question (Figure A4, Appendix A).

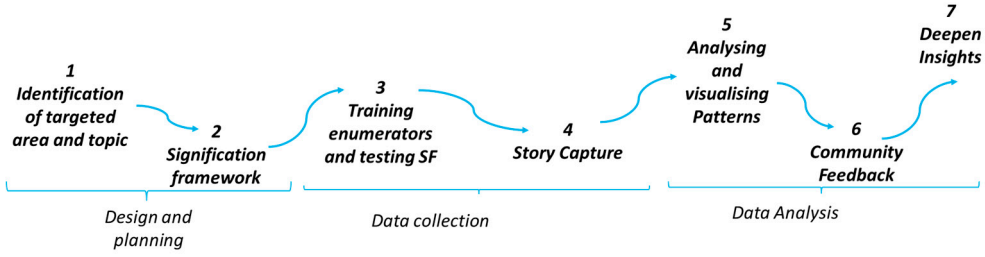

Figure 4. The SenseMaker® Process.

In June 2018, the project team conducted a SenseMaker® training and data collection exercise involving 20 students from Busitema University and six DLG staff from Lamwo, Bududa, and Namisindwa. The criteria applied for the selection of enumerators included interest in the tool, local language skills, and knowledge of the study area. Selected candidates followed a two-day training on the tool and adapted and translated the questionnaire from English to the two local languages

(Luo for Lamwo District and Lumasaba for Mount Elgon). The enumerator teams then travelled to MEL and AAL to test, adapt, and finalise the questionnaire.

Over four days in each study area, the 20 enumerators collected 235 stories in MEL (67 in Bududa district and 168 in Namisindwa district), and 229 in AAL (158 in Lamwo district/Central Forest Reserve (CFR) Agoro-Agu and 71 in Lamwo district/Lalak CFR). Local Council Chairpersons and Chiefs personally mobilised the participants from home to home and through telephone calls to participate at a central location commonly used for meetings. Participants were then surveyed at these locations.

The stories collected were translated from the local language to English and entered into the Sensemaker® system. Respondents were 57.5 per cent male and 42.5 per cent female, and the majority were aged between 36 and 55 years old. Fifty-two per cent had primary education. The majority of respondents sourced their income from agriculture, used their land for forestry, had lived in the area for 20 years or more, and lived close to one of the PAs.

An analysis workshop was organised in October 2018 in Gland, Switzerland. Quantitative analyses were used to identify trends in the stories. Signifier and modifier questions were also applied to the prompting question to identify characteristics of the stories and to explore governance issues related to inclusive decision-making. In November 2018, the project team conducted a three-day community participatory feedback session in each landscape to enabled respondents and stakeholders to validate and "make sense" of the patterns that emerged from the data analysis and to develop propositions on how to improve the relations between communities and PA management in the two landscapes. During these workshops, participants also read some of the stories collected. After reading the stories, they were asked to interpret the stories, providing feedback based on their daily activities, and bring insights to the stories. One of the main challenges encountered during the data analysis was the possible time lag between when the stories were told and when they actually happened. As it was not possible to make that distinction during the initial data analysis process, it was, thus fundamental to have a second-level analysis planned through a human sense-making process to validate the findings. The main objectives of the participatory feedback exercise were to (a) Give the participants (all communities interviewed in June 2018, political leaders, and technical staff) an opportunity to discuss the patterns of practice and create a common understanding of the changes, challenges, and opportunities in the landscapes; and (b) Deliberate on the key outcomes of the survey and develop action strategies. Participants were trained to read and interpret the stories and to bring new insights to the stories and analysis. These feedback sessions provided participants with an opportunity to make proposals on how to improve working relations between the local communities and the statutory PA management authorities and governance in the two landscapes. Once these discussions were concluded, presentations were made on the responses and perspectives from the NFA, UWA, and DLG representatives on participants' expectations and experiences followed by questions and answers sessions.

3. Results

3.1. Main Perceptions Found With SenseMaker®

The findings of the SenseMaker® analysis created an integrated view of the stakeholder's perceptions about inclusive decision-making in landscape governance. This section will explore key dimensions of inclusive decision-making and establish how people perceived the governance of their landscape, with a focus on the roles of key institutions, participation in decision-making, and the fairness of decisions. Although the results of both landscapes are presented together, we are not comparing the landscapes to each other, but reporting on the perspectives found in each.

3.1.1. Inclusivity of the Governance at a Landscape Level

In both landscapes, the government was recognised as the most influential actor across land types (e.g., communal lands, CFRs, LFRs, National Parks, or Wildlife Reserve). Respondents from

AAL; however, felt that the communities played a relatively important role in managing the forest reserves (both CFRs and LFRs). The importance of roles of the traditional and cultural institutions was also recognised in both landscapes. This type of governance continued to play an important role in many communities, particularly in defining and regulating the access and management of natural resources. In this regard, 40 per cent of the respondents from MEL and 45 per cent from AAL considered that traditional and cultural practices were very influential in the situation described in their story, while 30 per cent in MEL and 34 per cent in AAL thought that traditions had no influence at all (with 30 per cent of MEL and 21 per cent of AAL respondents falling between these two categories).

3.1.2. Community Participation in Decision-Making

In AAL, a slight majority (54 per cent) of the respondents perceived that the necessary mechanisms to support the participation of their communities in the decision-making processes were developed while only 39 per cent of the respondents from MEL felt the same. This difference of opinion between the respondents of the two landscapes was even greater regarding the extent to which they felt the voice of their communities was taken into account in decision-making. In this regard, 44 per cent of the respondents from AAL judged that their voice was heard while only 28 per cent in MEL felt the same (Figure 5).

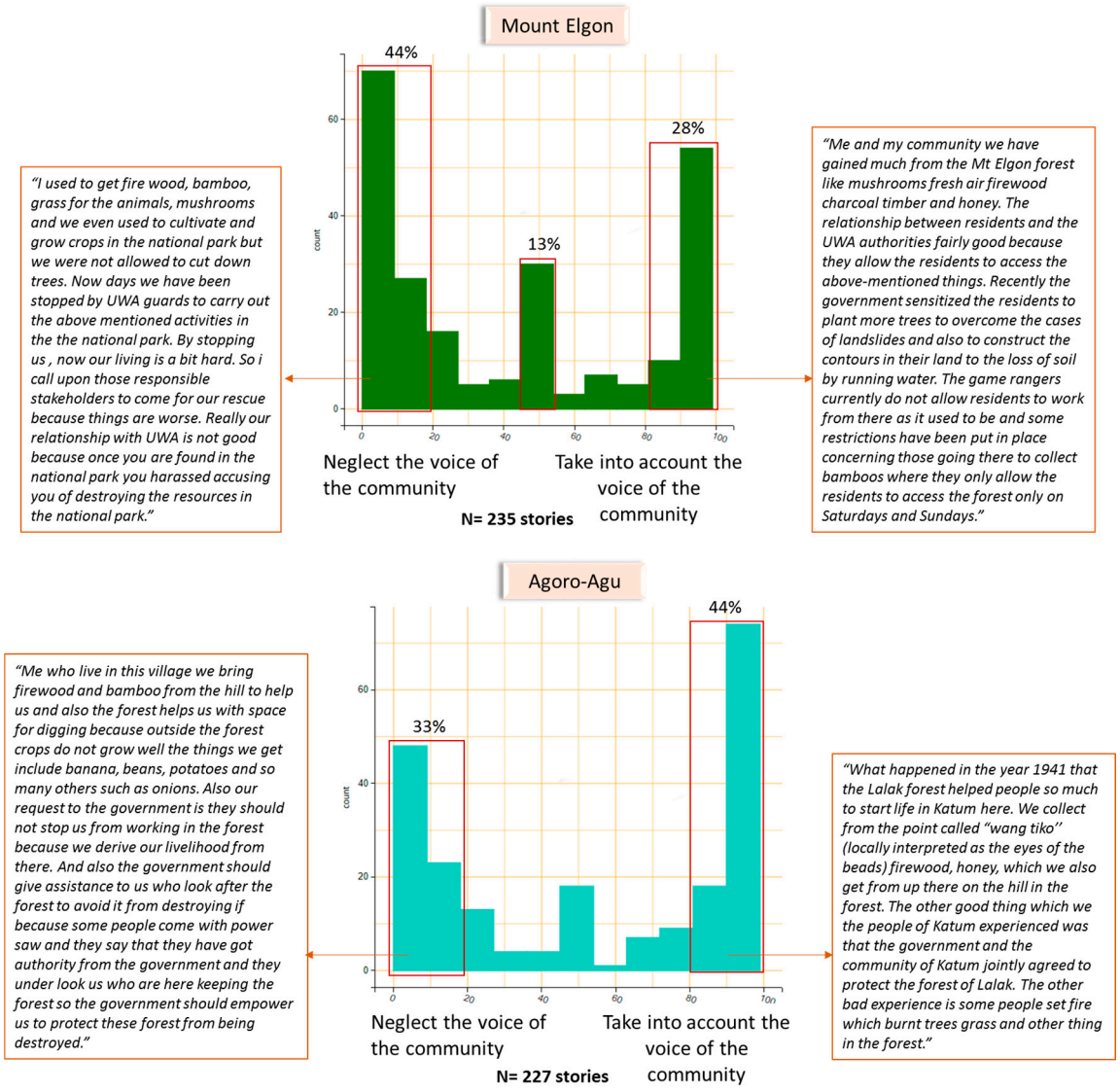

Figure 5. How the voice of the communities is taken into account in both landscapes.

These differences in perception could be important as they may have an impact on how local users and communities evaluate existing conservation initiatives and management practices, and thus ultimately influence their willingness to contribute to conservation efforts. There was a clear difference in how people perceived the effectiveness of the management systems in place in the two landscapes, as 48 per cent of the respondents from AAL considered that the CFRs were well managed while only 21 per cent of the respondents from MEL believed this was the case about the National Park (Figure 6).

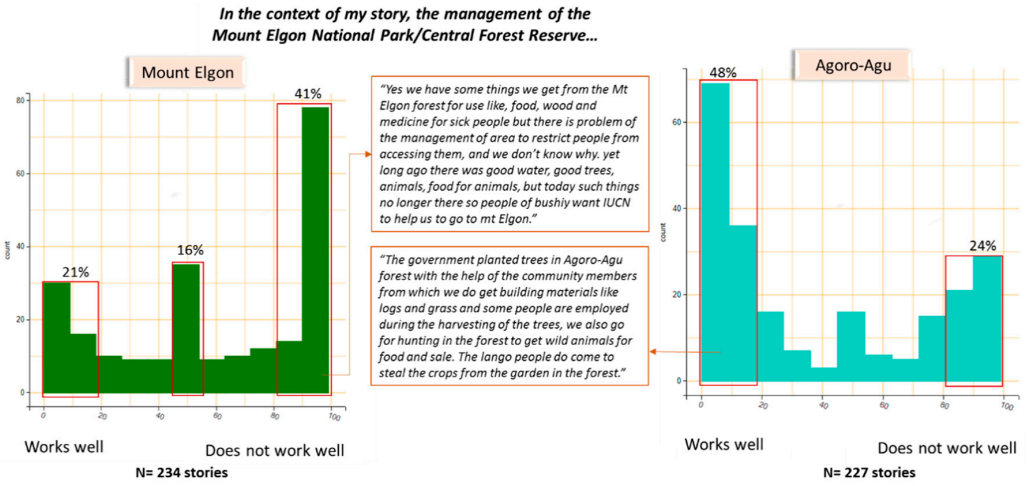

Figure 6. People's perceptions about the way the protected area is managed.

There also seemed to be a relation between the perceived effectiveness of the current management practices and the inclusivity of the communities in the decision-making process (Figure 7). Figure 7 overlays the clustering of stories across the axes of "management working well" or not well versus if "decisions took into account the voice of the community" or not, to find correlations. There was an important concentration of stories in AAL, where the voice of the communities was heard and the management practice was perceived as effective. In contrast, there was a similar concentration of stories where the voice of the communities was neglected and the management was perceived as ineffective in MEL.

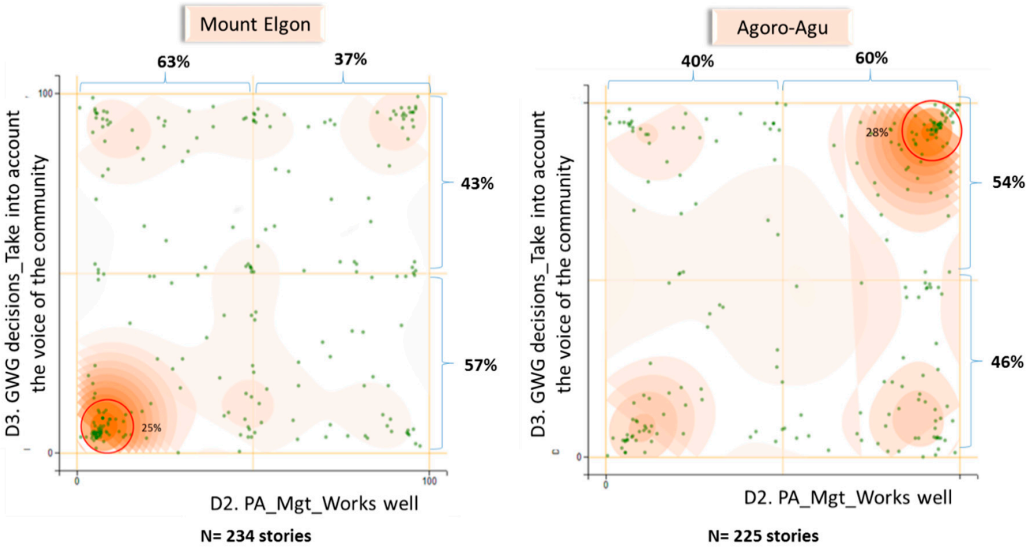

Figure 7. Relationship between landscape management and taking into account the communities' voice. Green points locate micronarratives across the two axes and dark red shading identifies clusters of stories.

Finally, these observations were also reinforced by the perception that more people felt hopeful in AAL (49 per cent) than in MEL (24 per cent) with regard to the future of the PAs present in their landscape.

3.1.3. Fairness in Decision-Making Processes

To illustrate how the respondents from MEL and AAL felt about the fairness in decision-making processes, we considered the extent that decisions made by the management authorities were perceived as fair or unfair. As already observed in some of the previous sections, it appears that more people in AAL considered the decisions made as fair (62 per cent) than in MEL (24 per cent).

3.2. Presenting Perceptions Back to the Communities

The participatory community feedback led to the identification of several actions to address governance issues. Here, we specifically focus on those actions related to inclusive decision-making.

In MEL: The key positive aspects that informed the stories included (a) the presence of the revenue sharing program that strengthens collaboration between the communities and management, (b) the forest restoration projects that support park boundary management and improve the relationship between park adjacent communities and UWA, (c) the resource-use program that promotes a good working relationship between UWA, district leadership, local leadership, and park adjacent communities; (d) promotion of alternative income-generating activities that leads to improved livelihoods among park adjacent communities; (e) the park offering employment opportunities to neighbouring communities through ecotourism. The key negative aspects on PA governance included (a) park boundary and park-land conflicts; (b) human-wildlife conflict; (c) lack of alternative sources of income; (d) corruption; (e) poor Governance of the Revenue Sharing Program (RSP); (f) poor governance of the Multiple-Use Program; (g) misinformation and politicking on PA and natural resources governance issues.

In AAL: The key positive aspects in AAL included the following: (a) Agoro-Agu CFR's perceived potential for tourism as a trans-boundary CFR between South Sudan and Uganda; (b) Perception of CFR benefits associated with instrumental values of the forest; (c) the large number of cultural sites, where sacred trees are respected and help conserve the environment; (d) markets and demand for various wood (*Afzelia africana* and bamboo), and non-wood products existing within and outside the districts; (e) increase in growth and establishment of nearby refugee settlement points towards high demand for forest resources, which in turn, communities see as an opportunity to improve their livelihoods through sustainable forest management; (f) the population has emerged from more than 20 years of armed conflict and is eager to catch up with the rest of Uganda; therefore it embraces any positive conservation and development initiative; (g) awareness raised in the communities and local leadership on the values and potential of the relatively undisturbed natural forests in the AAL during past and current NGO initiatives as well as NFA's CFM approaches; (h) given the scenic Kidepo Valley National Park close to AAL, the communities perceive a potential for tourism linked to the opening of the Great Northern Highway, which will connect touristic areas. The key negative aspects included (a) unclear forest boundaries; (b) cultivation and settlement in CFRs; (c) unregulated forest resource exploitation for timber, bamboo and charcoal; (d) confusing government policies/plans relating to land and forestry; (e) poor forest management approaches; (f) inadequate funding of the forestry sector; (g) past conflict and insecurity due to war in the sub-region; (h) human-wildlife conflict.

3.3. Identified Actions Emerging From Workshop and Current State of Implementation

Workshop participants recommended several actions to improve landscape governance.

3.3.1. Improving Governance at the Landscape Level

As a result of the inadequate participation and involvement of the communities and local leaders in PA management planning and implementation of programs, it is essential to apply the key principles of good natural resource governance and especially inclusive decision-making (i.e., the recognition and respect for legitimate tenure rights, empowerment, coordination and coherence, sustainability of resources and livelihoods, social and environmental accountability).

3.3.2. Improving Governance at the Protected Area Level

Communities are not entirely empowered to manage the Collaborative Forest Management (CFM) arrangements; therefore, a common understanding of what defines CFM is needed. This involves communities almost entirely managing the resource use program from its initiation, including implementation and monitoring. Equally, it is important to apply the key principles of good natural resource governance.

3.3.3. Improving Governance of CFM Groups

The most effective and efficient CFM groups appear to be those that are organised at small scales (e.g., at village level). Therefore, for CFM to be efficient and effective, CFM groups should be organised and based at the village level. Further, improving CFM agreements requires clearly identifying the different roles, rights, responsibilities, and returns of stakeholders involved. Particularly important is the need for institutional strengthening among the CFM groups.

3.3.4. Improving Community Livelihoods and Reducing Pressure on the PAs Resources

To reduce the pressure on PA resources and diminish conflicts, it is critical to develop in a participatory manner income-generating projects and a flow of resources or revenues for the financial sustainability of the actions required. This would foster the improvement of the communities' livelihoods as well as management and conservation of natural resources. These projects should consider results and lessons of previous studies. They should also consider socio-economic and cultural aspects.

4. Discussion

4.1. Influence of History of Protected Area Establishment on Perceptions

In our results, and particularly in the community feedback process, we saw that in both areas, but notably MEL, there were negative aspects of governance associated with conflict over land and boundaries. In some stories, respondents noted a change in their ability to collect natural resources, reducing their livelihoods in many cases. Some of these issues could be explained by the history of the establishment of each area, and changes in its status and management over time.

A forest reserve at first, Mount Elgon was gazetted as a national park in 1993. Management shifted from the authority of the Forest Department to a much stricter UWA [67,68]. The evictions, displacements and resettlements that followed the conversion from forest reserve to national park status were involuntary, poorly planned, uncompensated, and violent. In gazetting the national park, local people were barred from accessing the park, generating conflict with the park authorities. Sentiments around these issues remain strong [82]. In one example, 65 per cent of the respondents in one study noted that the change in management status from a forest reserve to a national park affected their cultural life negatively [68], perhaps explaining why only 24% of the MEL respondents felt that decision-making was fair.

In order to address these conflicts and to improve people-park relations in MEL in 2003, UWA introduced a Multiple Use Program to communities bordering the park. As noted in the community feedback process, a key positive aspect in MEL was the presence of this program. The Ugandan conservation legislation for collaborative use of resources within national parks guided the process. Although UWA handed over some rights to the use of some forest resources to the Resource Use Committees (RUCs), and allocated responsibility to the RUCs to monitor and control the level of resource use by community members, it did not grant power to the resource users to decide on products they could obtain from the forest [83]. In the perceptions of many MEL community members, although the Multiple Use Program was viewed positively, in the community feedback process, the poor governance of the program led to negative perceptions. In many cases, despite the existence of a process to guide negotiations to access resources, in some cases, resource users did not understand which resources were regulated by permits [83]. Management decision-making power lies with the park managers and extraction of resources from the park is based on mutual understanding between UWA and the park-adjacent groups. This explains why only 24% of respondents in MEL respondents felt that decision-making was fair. Most Resource User Groups lacked valid agreements since the UWA stopped issuing new agreements and renewed old ones [83].

In MEL, confusion over park boundaries was reported in the community feedback process. UWA has also made several attempts to stop encroachment on the park. After extensive consultation with the Ministry of Tourism, Trade and Industry, as well as the communities and the district leadership, UWA proposed to provide ownership rights. These rights were allocated to the local people who were currently residing in sections of the national park through boundary re-alignment to leave out the agreed-upon areas in the hope to reduce community-park conflicts in the area. The total area covered by these families is estimated at 29.6 sq. km (out of the total area of 1,121 sq. km of park) [84]. However, the recently demarcated park boundary from 2017 appeared to have created further confusion by entering community land in some places. In 2017, the Ministry of Lands, Housing and Urban Planning re-surveyed and re-opened boundaries of Mount Elgon National Park, which the communities viewed suspiciously as an exercise meant to evict them from their lands [83].

The Uganda Wildlife Act [85] (Section 2.1 parts a, b, e, and h) states the contribution of wildlife to the welfare of the people of Uganda and emphasises the need to enhance socioeconomic and social benefits from wildlife conservation and management. In this regard, the UWA, is obliged to share 20 per cent of its park entry fees with the local governments surrounding the PA from which the fees were collected. Under the Multiple-Use Resource Access Program/User Right, communities have regulated access to some key resources that may not be found outside the PAs, such as medicinal herbs, papyrus, etc. The implementation of these legal provisions implies benefit sharing of conservation efforts between the governments, the communities and their families neighbouring Mount Elgon National Park. However, as perceptions from Sensemaker® demonstrate, there is a perceived lack of transparency in the revenue sharing program in terms of procedures and funds disbursed to the districts, causing mistrust. Communities also felt that there was a lack of information on the benefit-sharing mechanism, including who is involved, how much revenue is generated, and a lack of clarity on procedures to access revenue or forming groups to access funds. Communities felt strongly that the funds should be disbursed directly to the sub-counties for service delivery and not to the districts, as it is currently the case. Moreover, the communities felt that the revenue shared should be a fraction of the total revenue generated by the PA and not only the park entry fees [83].

In AAL, perceptions were very different. Overall, perceptions were very positive. Negative perceptions, particularly from the community feedback, revealed conflict around unclear boundaries and cultivation and settlement in the forest reserves. These perceptions could be explained in part through the fact that communities are just rebuilding themselves after an extended period of displacement due to armed conflict that lasted for about two decades. Many communities are still settled in camp-like situations with limited infrastructure and encroaching households. Due to the civil war, AAL's population, eager to align with the rest of Uganda in terms of development, is willing to embrace conservation and development initiatives. Therefore, the population has been more forthcoming in respecting and implementing conservation policies, laws and regulations, making the working relationships between the local communities and PA management authorities more cordial. This conducive and positive environment between the management authorities and the communities, with a willingness to collaborate in promoting conservation and development opportunities, could be used as a catalyst to introduce short-term initiatives and projects.

In AAL, the main and key conflict area between the NFA and the communities has been unclear, and un-demarcated forest boundaries caused by many years of lack of proper management due to insecurity, resulting in uncertainty of tenure rights. Forest boundaries had not been maintained since their initial placement in the 1930s and 1960s. Later, some of the Internally Displaced People's Camps were located within the forest reserves. Local politicians do not want remaining people in the former camps (even after their demobilisation) to vacate the forest reserves. As such, the eviction of these people has been polarised by local politics. The blame has been placed on the NFA. For example, in Lamwo district, the actual location of Lokung CFR is contested. One community thinks that the CFR is in the area of Ocula, Nora and Wigot villages in Lokung Sub County, while the other community thinks that the CFR is around Loticodokogwok and Storebor in Padibe West Sub County. The actual location of this CFR is now being clarified; resolution of associated issues will take time, and it will require in addition to current local government activities, intervention at the highest level of government, as the confusion on the demarcation is becoming politicised. Overall, no concrete engagement processes have started to resolve this issue despite its identification.

Since the 1990s, the Government of Uganda (GoU) has been promoting a development agenda that has led to a reduction in poverty nationally, with a visible improvement in many of the welfare indices. However, the welfare indices for Northern Uganda have not improved at the same pace as the rest of the country. Income poverty remains significantly high, literacy rates are low, and access to basic services is poor. In AAL, just like the rest of northern Uganda, the communities perceive the resolution of natural resource access and use related conflicts, as well as the rebuilding of lives and livelihoods after years of armed conflict, insecurity and neglect, as the government's responsibility.

4.2. Influence of Current and Past Relationship With Governmental Authorities on Perceptions

A returning theme in the analysis in both areas was whether communities were positive or negative towards management effectiveness and whether their voices were heard in decision-making. In AAL, there is a more positive view of management practices, which differs from a negative perception in MEL. Over the last year, two major efforts lend support to optimism in both landscapes (1) the consultation of communities (and documenting their views) on how the PAs are managed during the management planning processes; (2) the benefit-sharing of conservation with neighbouring communities.

Overall, as highlighted in Figure 5, the management of Mount Elgon National Park is still characterised by high levels of mistrust and conflict between the UWA and local communities, as noted in the stories collected. The key factors appear to be the high dependence of the local communities on the park resources for their livelihoods and the way in which the park was created through the dispossession of land [47]. The park retains important values to society at all levels beyond local resource dependence and tourism. These relate to the park's ecological and cultural values, and are important to its provision of the wider ecosystem services such as the functions of the mountain water catchment area for the region, as a carbon sink to mitigate climate change, soil conservation and global aspects of biodiversity conservation. The management authority has to influence a sustainable arrangement to protect these values, and so work in a more inclusive way with society.

In AAL, CFM agreements have been recently developed and implemented between NFA and the communities. In these CFM agreements, the community benefits include income from forest-related activities such as modern beekeeping and a commercial tree nursery, improved legally recognised access to resources for livelihoods and employment opportunities. On the other hand, benefits to NFA include future global benefits such as better managed and conserved forest and revenue from licensed activities and reduced management costs saved for improved public relations. This appears to have influenced communities' attitudes and perceptions more than anything else as they had not seen such initiatives before.

In the AAL, communities heavily rely on natural resources. Conflicts have been experienced mainly between the NFA staff and forest resource users when the latter did not comply with the terms and conditions governing their activities in CFRs. In other cases, there are people who enter and operate in CFRs without a license or any other authority from the NFA, yet such activities are contrary to the National Forestry and Tree Planting Act 2003. All the above conflicts resulted from the long insurgency in northern Uganda and a lack of close supervision on the part of NFA. Most Internally Displaced Persons Camps are situated either within the CFRs or very close, and the NFA did not make enough effort to deploy adequate and skilled staff to effectively handle the challenges in the region.

The above-mentioned good relations between the NFA and the AAL communities and the efforts of the NFA to provide further development opportunities to the AAL could explain the NFA and communities' openness to use the landscape approach in the Agoro-Agu management plan revision process, which fostered inclusive decision-making [86], and why the majority of respondents from AAL feel that the current management of the Forest Reserve works well.

In the preceding discussion, we see that for MEL, the communities' dependence on natural resources in the park is perceived negatively, while in AAL, this dependence is seen positively. This difference is due to the collaborative nature of CFM with high levels of decision-making authority for communities, as noted in the community feedback process.

The feedback from the workshop was critical to enable stakeholders to have their perspectives heard by the relevant management authorities. These meetings also created a forum for dialogue amongst the stakeholders to identify solutions to some of the landscape governance issues that emerged from the study. Without the collection of stakeholder perceptions in the landscape, and the following presentation of these perceptions back to mixed stakeholder groups, a space for dialogue would not have been opened. In some cases, it may be the only way for issues, such as rights or justice, to emerge at a landscape scale and to enable action [87,88]. Although it is only the initial step for identifying actions, beginning dialogue is a crucial first step.

4.3. Critique of the Method

The ability of the respondents to interpret their narratives clearly stands out as one of the most interesting and useful features of Sensemaker®. By limiting the introduction of outside bias, the tool provided direct access to robust evidence-based data that could then be actionable and shared with stakeholders. The ability to move between the quantitative and qualitative elements of the data and easily visualise and examine patterns enabled deeper data exploration and allowed for a better understanding of the respondents' sentiments about the governance mechanisms in place in the two landscapes. It allowed access to perspectives in a complex system by bringing together and making sense of information that is normally fragmented. By contrast, the process of translation back and forth between the various languages, as well as the selection of participants could create some biases in the dataset. SenseMaker® does not provide the capability to analyse the narratives themselves; however, the stories may be searched and examined independently, as noted in another study using Sensemaker [80]. In order to fully understand the stories, one normally needs to confront the findings with other studies in the same sites and on the same topics, which currently, to the author's knowledge, do not exist [89]. However, rather than do that, we conducted an in-person sense-making process that provided an opportunity for further discussions and analysis of the stories with the community themselves. This is innovative and is rarely done in studies. It provides a richness to contextualise the stories while identifying actions to improve, in this case, landscape governance. Furthermore, this method allowed us to gain insights into the perspectives, attitudes, values, needs and concerns of communities that influence governance issues in the two landscapes. To more precisely answer our research question, one could have extended stays in the communities studied in these landscapes, using ethnographic methods, including interviews and participant observation.

Using SenseMaker however comes with a cost (approximately USD 50,000 in this case), and its unique structure and approach imply to have sufficient understanding of the tool to make the most of it [89]. It is, thus important to ensure that adequate funding is available to source the many steps of the process and to allow the participation of the necessary stakeholders in each of them. Not having a good understanding of these different steps and their implication may result in falling short in delivering the expected outcomes.

5. Conclusions

5.1. Divergences Between Policy and Practice

As seen in many cases in our discussion, good policies do not always translate into good practice or perceptions of those practices on the ground. For example, although there are established guidelines and procedures on the Revenue Sharing Program and Resource Access Program by the UWA, many community members do not believe the processes carried out in the field are transparent, including how they are communicated to community representatives. A process investigating perceptions of policy implementation can reveal weaknesses and strengths and, possibly help improve the governance of these processes and the conservation landscapes themselves.

5.2. The Value of Capturing Perceptions for Decision-Making and Adaptive Management

Understanding people's perceptions is a significant contribution to inform and improve management decisions as it provides insights into perspectives, attitudes, and values of the communities, and more knowledge about the context helps to address more needs and concerns. It is also an opportunity to resolve conflicts and a way to improve how communities are included by facilitating dialogue between different stakeholders in the landscape and by enhancing the relationship and strengthening partnerships between communities and management institutions.

Conflicts over resources in landscapes are commonly exacerbated by ignorance or misunderstanding of the perspectives and motivations of other stakeholders. Therefore, the SenseMaker® approach is a valuable addition allowing voices from the field to spark multi-stakeholder discussions on key elements of programmatic interventions, leading, in theory, to shared analyses that feed joint action plans that engage all stakeholders. Furthermore, the approach enabled people to self-signify the importance and meaning of their stories, and so enable a deeper analysis of the emerging perceptions.

5.3. The Communities Feedback Process and Why It Matters for Improving Protected Area Landscape Governance

Participatory feedback and sense-making workshops with stakeholders facilitate collaborative analysis and stimulate debate among landscape stakeholders towards actionable insights. Additional perspectives expand options and enhance the value of the ultimate decisions. The more views gathered in the process of making a decision, the more likely the final product will meet the most needs and address the most concerns possible. Public involvement brings more information to the decision, including knowledge about the context where decisions are implemented, and historical and cultural issues.

For the governmental representatives, it enabled communication, through visual aids, such as those presented in this article of stakeholder perceptions, and gave access to many perceptions which had not been heard or documented prior.

The information generated and interpreted by the stakeholders themselves touches upon different aspects of stakeholder inclusion in PA management in the landscape. Most importantly, participatory analysis and feedback sessions of perceptions lead to the strengthening of partnerships between local communities and PA management institutions. In these processes, community members have an opportunity to put forward proposals from which long-term engagement strategies of all parties can be built on, so as to overcome hurdles in effective partnerships and in efficient PA management, and to build trust.

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Appendix A

Figure A1. Presentation of "The Story" Section.

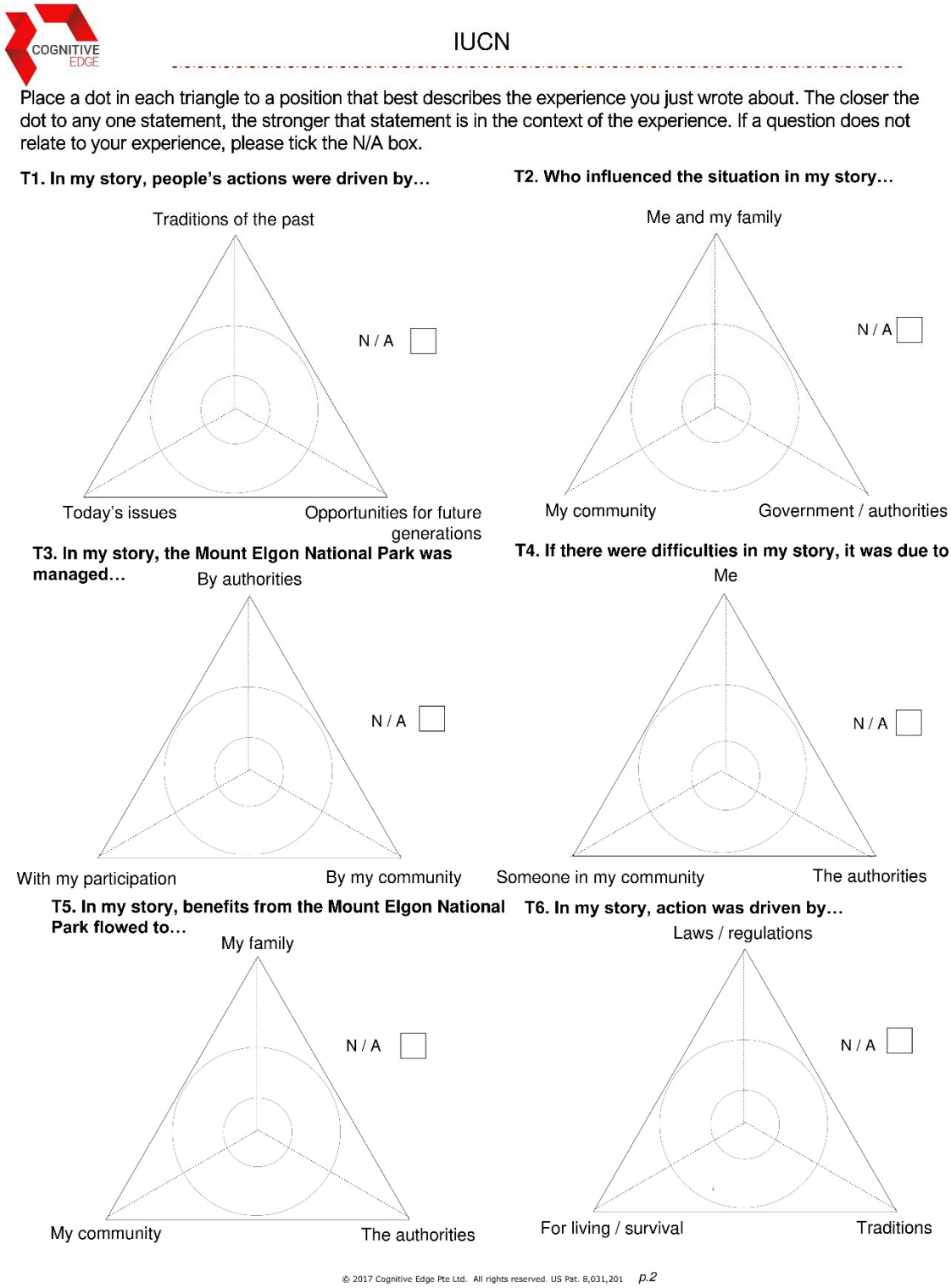

Figure A2. Details about Story Triads Section.

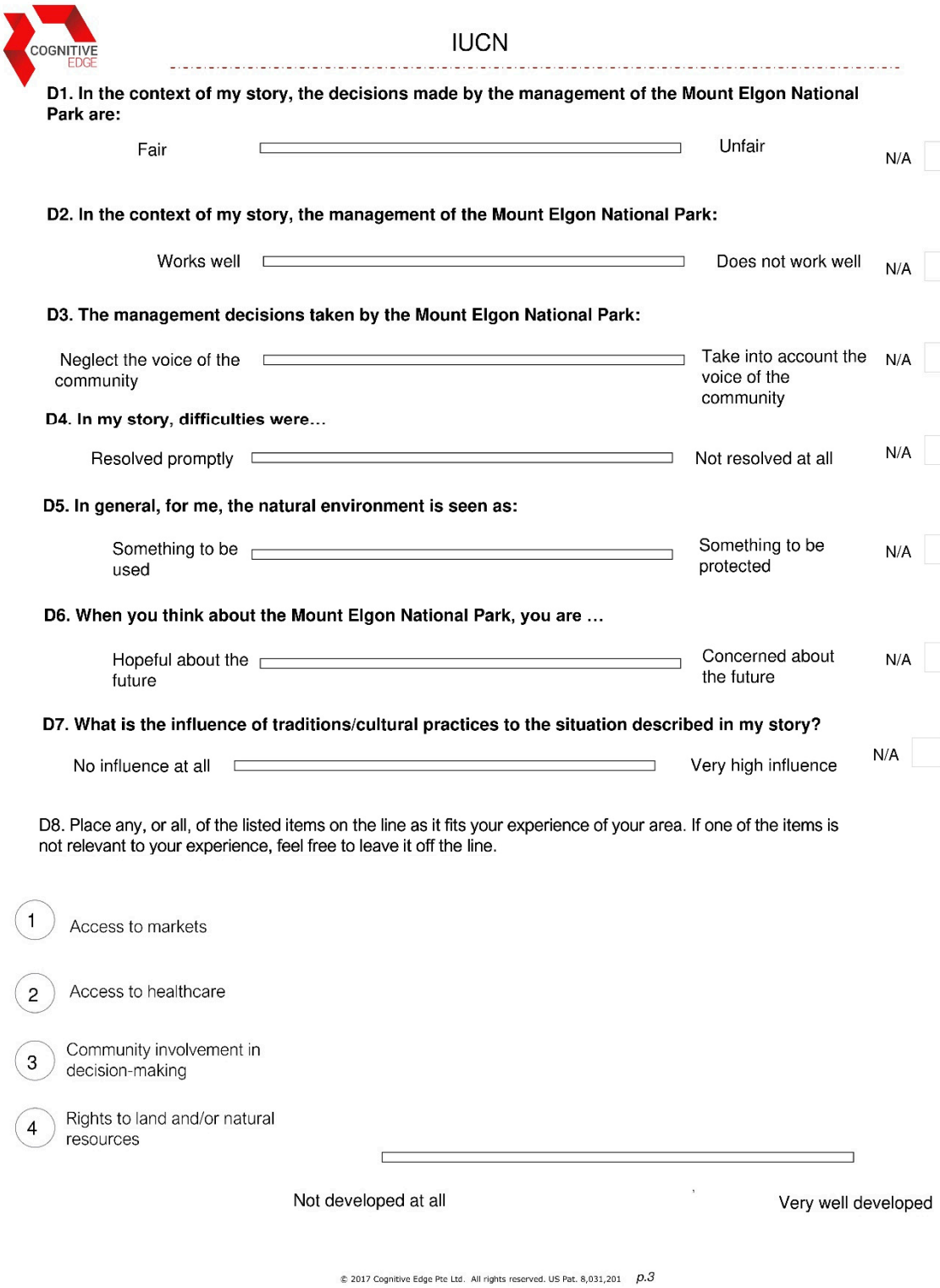

Figure A3. Details about Story Diads Section.

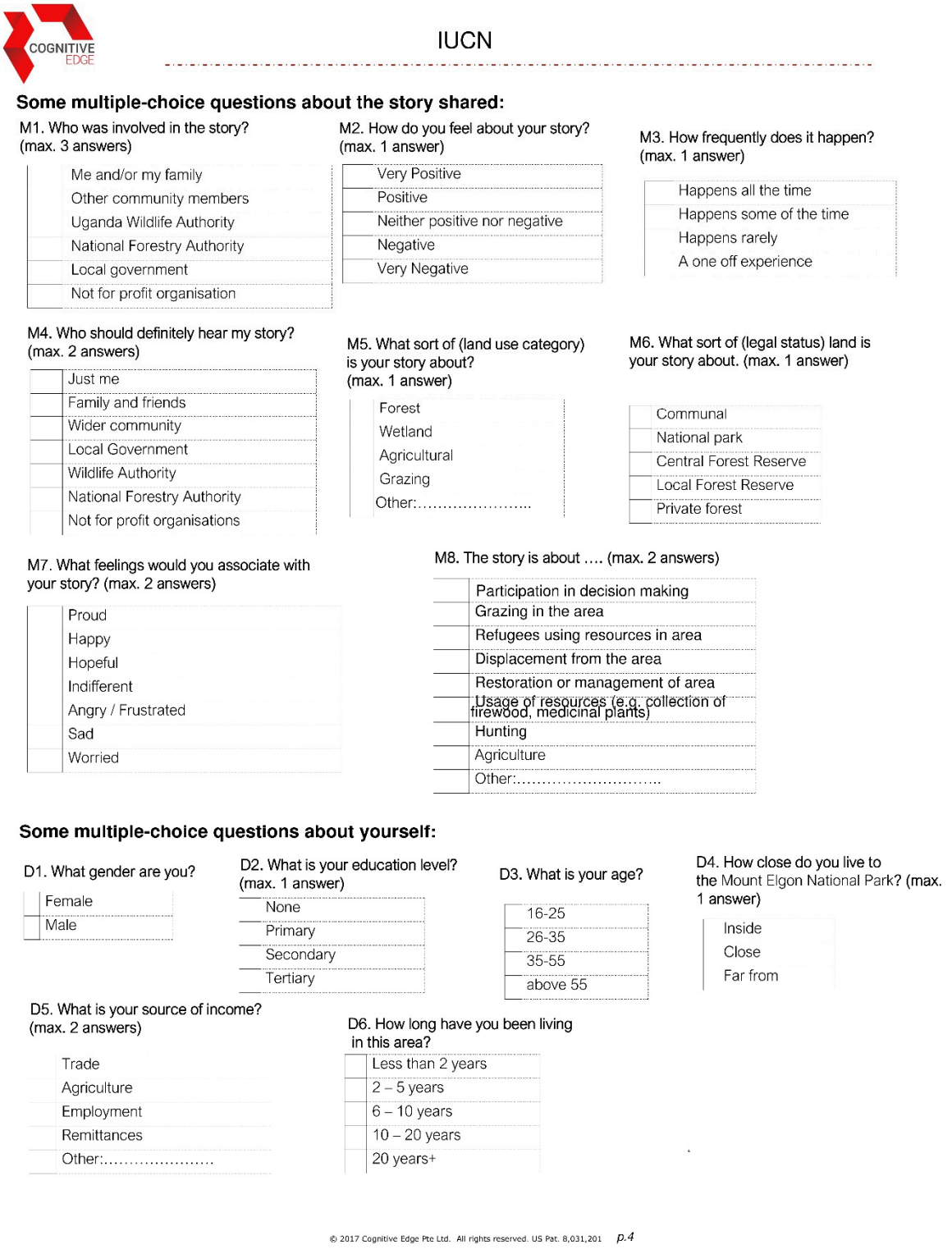

Figure A4. Information about Respondent Section, using multiple choice questions.

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