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Understanding and Resolving Conflict Between Local Communities and Conservation Authorities in Colombia

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Summary. — Conflicts between indigenous and local communities, on the one hand, and national protected area administrations on the other are pervasive. A better understanding of these park-people conflicts would assist in suitable policy changes to constructively address them while concurrently pursuing conservation and livelihood goals. We interviewed 601 people living inside or along the borders of fifteen Colombian NPAs to identify five main categories of park-people conflicts. Based on interviews with 128 community leaders and 76 institutional-level respondents -mainly park officers- we discuss the five principal factors underlying the identified conflicts and present a conflict framework relating the dominant sources to the most prominent conflict manifestations. Finally, we detail five strategies toward conflict prevention. While simultaneous interventions at multiple levels would be ideal or preferred, our analysis suggests that the incidence of park-people conflicts in Colombia can be substantially lowered through (i) making the environmental legislative body more socially inclusive; and (ii) adequately empowering NPA administrations. We expect our findings to be valuable for managing conflict contexts in protected areas in other tropical countries. Further research is necessary to determine the most effective interventions for both conflict resolution and meeting conservation goals.

Key words — protected areas, conflict, indigenous and local communities, environmental policy, Colombia

1. INTRODUCTION

Global biodiversity loss and degradation of natural habitats are exceedingly linked to increasing demographic pressures, mounting rural poverty, unsustainable extraction and use of natural resources, and (violent) conflicts (Carey, Dudley, & Stolton, 2000; Chape, Harrison, Spalding, & Lysenko, 2005; Chape, Spalding, & Jenkins, 2008; Nolte, 2015; Stolton *et al.*, 2003; Worboys, Winkler, & Lockwood, 2006). The detrimental impact of humans on conservation areas across the world has led to implementation of exclusionary conservation policies. These policies exclude people from conservation areas in order to achieve better environmental protection. As a result, natural resource-related conflicts (NRRCs) between local communities and protected area authorities have surged in numbers (De Pourcq *et al.*, 2015). NRRCs are related to a variety of causal factors, including:

(i) forced displacement (Adams *et al.*, 2004; Agrawal & Redford, 2009; Brockington, Igoe, & Schmidt-Soltau, 2006; Kabra, 2009; Lele, Wilshusen, Brockington, Seidler, & Bawa, 2010; Lustig & Kingsbury, 2006; Peters, 1999; Schmidt-Soltau, 2009);
(ii) social exclusion (Brockington & Schmidt-soltau, 2004; Brondo & Bown, 2011; Kelly, 2011; Lele *et al.*, 2010; Torri, 2011; Vedeld, Jumane, Wapalila, & Songorwa, 2012);
(iii) deficient community participation processes (Brondo & Bown, 2011; Lele *et al.*, 2010);
(iv) denial of ancestral territorial rights (Brondo & Bown, 2011; Cisneros & Mcbreen, 2010; Peters, 1999);
(v) restrictions on community resource use priorities (Cisneros & Mcbreen, 2010; Lele *et al.*, 2010; Peters, 1999; Torri, 2011; Vedeld *et al.*, 2012; West, Igoe, & Brockington, 2006).
(vi) negative impacts of conservation measures on community resources (Brockington & Schmidt-soltau, 2004; Brockington *et al.*, 2006); and
(vii) impoverishment accompanying all of the above (Adams *et al.*, 2004; Brockington *et al.*, 2006; Vedeld *et al.*, 2012; West *et al.*, 2006).

A better understanding of the nature and dynamics of NRRCs is essential for developing appropriate, innovative policies that can address them in constructive ways, while at the same time contribute to achieving both biodiversity and livelihood goals (Campbell *et al.*, 2001; Cisneros & Mcbreen, 2010). Local people are usually regarded as part of the problem and as not contributing to the solution. However, this view is increasingly recognized as ineffective when working toward the prevention and resolution of conflicts. Considering local people simply as culprits is a presupposition that fails to understand conflicts within their respective historical, political, ecological, and economical contexts. Furthermore, it misses

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the opportunity to develop participatory approaches to conflict resolution, which build on local people's perspectives about the genesis and manifestation of conflicts (Le Billon, 2001; Peluso & Watts, 2001).

Drawing on extensive interview data with local people from fifteen national parks in Colombia, this study begins by exhaustively characterizing park-people conflicts and the factors underlying their manifestations. Based on this characterization, together with an analysis of relevant Colombian policy measures, we then develop a conflict impairment framework. We use this framework to formulate a set of recommendations and a step-by-step approach aimed at preventing and mitigating the most salient identified conflicts.

2. CONCEPTUAL FRAMEWORK FOR DEFINING CONFLICT

Leading scholars within conflict studies have long struggled to find an adequate method of conflict analysis, and there is currently no generally accepted school of thought. A conflict is traditionally defined as "a difference in goal, perception or interest" (Coser, 1957; Miller, Bartos, & Wehr, 2002; Pruitt, Rubin, & Kim, 2003). According to this classic view, differences should be addressed appropriately, as part of effective conflict management. This approach has been applied in many different contexts, including natural resource management. However, it is increasingly criticized for its limited usefulness for mitigating NRRCs, partly because it does not distinguish the actual conflict from its causal factors (Bude, Converse, Edmonds, & Fink, 2015; Yasmi, Schanz, & Salim, 2006a, 2006b).

Our research approaches the conflict concept through the more specific concept of "impairment". The impairment model defines conflict as a situation in which an actor perceives impairment from the behavior of another actor (Glasl, 1999). According to this approach, conflict consists of three distinctive features. First, the core of the conflict is attributed to two actor settings: the actions of one actor cause impairment in another actor's eyes, i.e., the "opponents" and the "proponents" (Marfo & Schanz, 2009; Yasmi *et al*., 2006a). Second, the experience of an actor's behavior or action as impairment is the only defining element for conflict manifestation, thereby providing a single criterion to distinguish conflict from non-conflict situations (Glasl, 1999; Marfo & Schanz, 2009; Yasmi *et al*., 2006a). Third, factors or conditions that lead to the impairments, should not be confused with the actual conflicts or actual experience of impairments. They are the sources of conflict or the sources of impairment. As stated above, the separation of conflict sources and conflict manifestations sets the classical and impairment approaches apart. The latter approach facilitates our study of both conflicts and their sources.

Previous research has shown that impairment plays a pivotal role not only in social conflict (Glasl, 1999), but also in NRRCs (Marfo & Schanz, 2009; Yasmi *et al*., 2006a). Furthermore, the impairment approach takes into account the dynamic nature of NRRCs, whereby numbers and degree of impairments within each actor can increase or decrease. This is important and a more realistic approach for the NPA context, as the perception of impairment can change over time in response to the political context, demographic situation and availability of resources (Yasmi *et al*., 2006a).

Other studies that used the impairment approach have analyzed conflict from a community perspective. These studies assume that the state and the local community are homogenous entities composed of stakeholders with the same experience of conflict (Marfo & Schanz, 2009; Yasmi *et al*., 2006b). However, neither the state nor the respective communities are homogenous entities (De Pourcq *et al*., 2015; De Pourcq, Thomas, & Van Damme, 2009; Leach, Mearns, & Scoones, 1999). There is evidence that individual community members have different perceptions of resource management (problems) and experience conflict differently (Leach *et al*., 1999; Soneryd & Uggla, 2000). A better understanding of conflict and its mitigation requires acknowledgment of the different perceptions and experiences within a particular group or community. To address this knowledge gap, we will analyze perceptions of NRRCs, and its causal factors, at the level of individual respondents.

Nolte (2015) undertook an interesting study in Colombia, showing that current enforcement efforts are insufficient to deter priority threats for conservation. Throughout the paper, he gives a concise overview of many problems that the Colombian parks face, including poor management, lack of funding, ambiguous legal frameworks, unsafe working conditions for park staff, weaknesses in the enforcement regime and land tenure conflicts. Nolte's main conclusion is that enforcement strategies are unlikely to yield positive results for reducing priority threats in Colombia's natural parks unless accompanied by resolution of land tenure, clarification of use rights, improving patrolling strategies and protection of park guards. Our study complements Nolte's work by including the perspectives of central players, i.e., local park inhabitants, on those matters.

3. METHODS

(a) *Research area and background*

Colombia is a unique setting for studying NRRCs between local communities and protected area administrations for a number of reasons. First, this South American country is characterized by an exceptionally high level of biodiversity, much of which is located on protected land. In 2015, the country had 58 NPAs covering 11.27% of its continental and 1.48% of the marine territory, corresponding to a total area of 14,254,127 hectares (UAESPNN, 2015). Furthermore, a substantial number of people inhabit Colombia's NPAs. These comprise 93,681 people: 35,695 indigenous, 8,325 Afro-Colombians and 47,376 subsistence farmers of mixed ethnicity, often referred to as settlers or colonists (UAESPNN, 2012a, pers. comm.). Many more live along NPA borders, but exact figures are unavailable. These people's activities, such as agriculture, resource extraction and construction, infract NPA conservation goals (see also Nolte, 2015).

The inhabitation of parks and exploitation of their resources has led to a series of resource management conflicts between NPA administration and local communities. Some authors have discussed the negative effects that NPAs may have on local livelihoods in Colombia, such as displacement, social exclusion and impoverishment (Cuesta, 2008; Duran, 2009; Ojeda, 2012; UAESPNN, 2012c). However, the existing documentation is very case-specific making extrapolation difficult, and analysis on the sources of conflicts is inadequate and incomplete.

Here we focus on fifteen Colombian NPAs (Figure 1 and Table 1) with surface areas ranging from 1,000 to 1,000,000 hectares. These NPAs are home to various indigenous, Afro-Colombian and settler communities. They are situated in the country's main bio-cultural regions of the Amazon, Andes, and the Caribbean and Pacific Coasts. Some

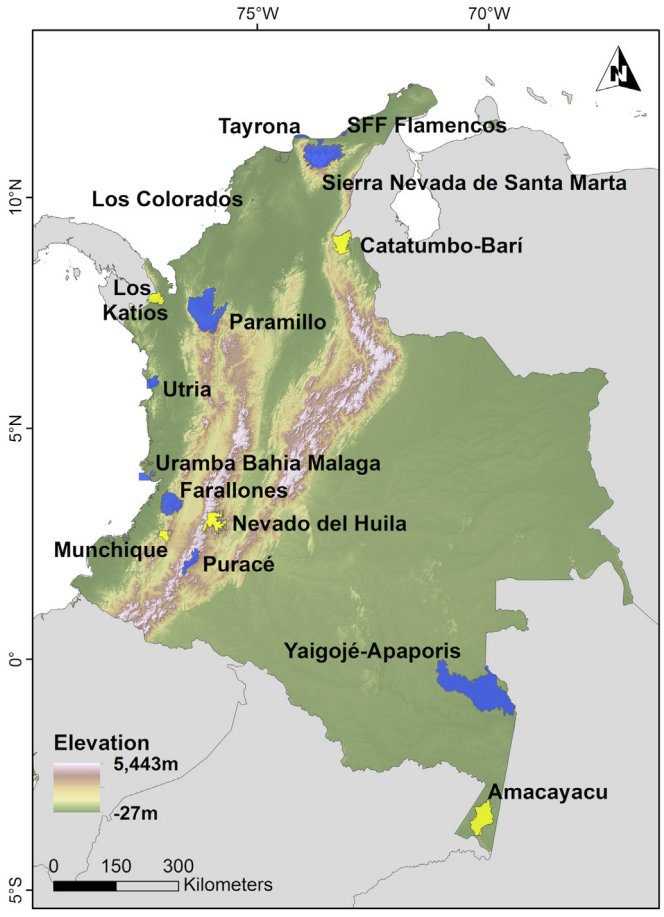

Figure 1. *NPAs under study (NPAs that were and were not personally visited in blue and yellow, respectively). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)*

parks were created decades ago while others more recently came into existence.

(b) *Data collection and analysis*

(i) *Data collection*

We interviewed a total of 677 respondents. At grassroots level, we interviewed 601 persons (i.e., 473 community members and 128 community leaders) living in or along the borders of fifteen NPAs. Most of these interviews were carried out during field visits ($N = 586$; 10 NPAs), at locations where the respondents had their residence (e.g., in their house, or public places). Field visits were complemented with interviews with 15 leader representatives of the five additional NPAs in nearby towns or major Colombian cities (Figure 1 and Table 1).

The majority of the people we interviewed engaged in a range of productive and extractive activities in NPAs for household use or sale. The dominant livelihood activities of participants were farming, hunting for subsistence purposes and fishing. A limited number of local men engaged in mining activities, while some households raised cattle for milk or meat production, both for auto-consumption and (local) commercialization. Many respondents also undertook other income-generating activities, such as daily construction work, running restaurants or driving moto-taxis. People were often involved in several concurrent occupations.

We also interviewed 76 stakeholders at institutional level, including staff from both governmental and non-governmental institutions. Most governmental respondents were employed by the NPA administration, the Colombian Institute for Rural Development (INCODER), the Geographical Institute Agustin Codazzi (IGAC, the governmental instance responsible for issuing and updating land registers in NPAs), and the Superintendencia de Notariado y Registro (SI, the governmental entity responsible for registration of land titles, among other responsibilities). Non-governmental actors included members from law firms and nature conservation institutions, such as the World Wildlife Fund and Conservation International. The majority of the interviews at institutional level were held in Colombian cities, such as Bogota, Cali, Santa Marta and Riohacha. As the first author carried out all interviews, potential interviewer bias should be constant across all cases.

Field interviews were conducted during several trips between 1/10/2011 and 31/08/2014. When arriving at a community, we first requested permission during a community assembly to undertake the research, explaining the goals and limitations of the study. After the community granted informed consent, we first interviewed community leaders. This helped us to get an overall idea of the relationship between community members and NPA administration, and the existence of any conflicts. Afterward, we conducted individual interviews with representatives of all different interest groups in the community. These included men and women; young and old; people of a wide array of occupations such as fishermen, miners and farmers; people living in the center and edges of the villages; etc. We wrote down all conversations during interviews and we did not make any digital recordings. We assured respondents that all information would be treated and analyzed anonymously.

In accordance with the impairment approach, we made a distinction between actors experiencing impairments (local residents) and actors whose actions are perceived as causing those impairments (here generally NPA administrations). We used standardized questionnaires to obtain information on social diversity characteristics, such as sex, age, income level and ethnic background. Semi-structured interviews were carried out to improve our understanding of the categories of conflicts experienced by respondents, and their opinions on the factors underlying these conflicts. Furthermore, we obtained their views on necessary steps for implementing successful conflict resolution strategies.

To identify conflict categories, we explicitly asked community members and leaders to free-list all actions of NPA administrations (and staff) that they perceived as an impairment or conflict. We grouped all these reports in different conflict categories and presented these to NPA officials and other stakeholders at institutional level. Administrative officials mostly confirmed that those reported impairments are representative for the actual conflicts experienced by local communities residing in or near Colombian NPAs.

To identify potential causal factors of conflicts as well as interventions to resolve local conflict situations, we specifically asked for the opinion of officials at the institutional level as well as community leaders. The latter respondents comprised presidents of local community councils, teachers, and traditional leaders. We also sought the opinion of other community members on conflict course and resolution strategies, but most did not feel sufficiently knowledgeable or directed us to ask community leaders.

Following Mason (2002), rivalling field hypotheses were developed and tested in each of the case studies. We gradually

Table 1. *Characteristics of the NPAs and study areas considered in this paper*

NPA	Region	Year of NPA creation	Surface area (ha)	Areas of residence of community respondents ($N = 601$)
SFF Los Flamencos	Caribbean	1977	7,615	Cari Cari and Palaima ($n = 8$) Indigenous Wayuu collective territory "Perratpu") ($n = 43$) Displaced community near Tocoromana ($n = 9$) Afro-Colombian communities Los Cocos and Camarones ($n = 7$)
Tayrona	Caribbean	1964	15,000	Indigenous community Tayrona ($n = 4$) Settler/fisher communities Tayrona ($n = 61$)
Sierra Nevada de Santa Marta	Caribbean	1964	383,000	Settler communities La Lenguëta ($n = 60$) Indigenous collective territory Kogui-Malayo-Arhuaco ($n = 10$) Indigenous community Kankuamo ($n = 1$)
SFF Los Colorados	Caribbean	1977	1,000	Settler communities Los Colorados ($n = 38$)
Utria	Pacific	1987	54,300	Afro-Colombian community councils ($n = 66$) Indigenous collective territory "Jurubida-Chori-Alto Baudo" ($n = 41$) Indigenous collective territory Alto Rio Valle Boro Boro ($n = 1$)
Los Farallones	Pacific	1968	205,266	Afro-Colombian community councils Los Farallones ($n = 8$)
Uramba Bahia Malaga	Pacific	2010	47,094	Afro-Colombian community councils Bahia Malaga ($n = 74$)
Paramillo	Andes	1977	460,000	Indigenous collective territory "Yaberarado" ($n = 20$) Indigenous collective territory "Pollines" ($n = 2$)
Puracé	Andes	1975	83,000	Indigenous collective territory Puracé ($n = 44$) Indigenous collective territory Rio Blanco ($n = 2$) Settler community Puracé ($n = 2$)
Yaigojé-Apaporis	Amazon	2009	1,056,023	Indigenous collective territory "Yaigojé-Apaporis" ($n = 85$)
Catatumbo-Bari	Andes	1989	158,125	Indigenous collective territory ($n = 4$)
Los Katíos	Pacific	1973	80,658	Afro-Colombian community Los Katíos ($n = 3$)
Nevado del Huila	Andes	1977	158,000	Settler community Nevado del huila 2
Munchique	Andes	1977	47,000	Settler community Munchique ($n = 5$)
Amacayacu	Amazon	1975	293,500	Indigenous community Amacayacu ($n = 1$)

rejected false hypotheses based on information obtained from increasing numbers of people. This means that we continued interviewing new respondents until we had sufficient data to answer the research questions. According to Mason (2002), this point is reached when informants do not add new substantial information about the social process under scrutiny.

Besides participant interviews, we obtained information from secondary sources such as previous meeting reports and agreements between communities and NPA offices, emails and written correspondence between park administration staff and community leaders, unpublished NPA documents, and program evaluations. We evaluated data quality using triangulation where this was possible. These additional data sources were of fundamental importance to corroborate, complement or refute interview results (Arts & Verschuren, 1999).

(ii) *Data analysis*

We used a combination of qualitative and quantitative methods for data analysis. Qualitative data analysis allows for examination of "how things are related and interdependent" (Denscombe, 1998, p. 176) and starts from the assumption that "social realities are wholes that cannot be understood in isolation from their contexts" (Lincoln & Guba, 1985, p. 39). We attempted to illustrate the complexity of specific situations and multiple sources of conflicts in the cases using data reduction, data display and conclusion drawings (after Miles & Huberman, 1994).

It is important to note that our analysis of conflict is based on local perceptions of impairment. However, local people's perspectives do not necessarily match reality on the ground. For example, people may experience *access* conflicts in a context where the NPA administration actually does not impose any restriction measures. The perceptions of community members may be fueled by rumor and gossip, and can be based on incorrect information. This may lead to experiences that contradict reality on the ground. However, since impairment involves emotional perceptions, social interests, and their combination (Glasl, 1999), rumors are equally valid conflict sources as say, unfair legislation or lack of park funds. Such perceived impairments based on rumors would equally need interventions to be resolved. To this respect, it is interesting to note that suspicion and distrust underlying rumors are often the earliest sources of impairment as a conflict escalates (Glasl, 1999). De Pourcq *et al.* (2015) already showed in another paper that distrust is among the most decisive factors for park-people conflict genesis in Colombia.

4. RESULTS AND DISCUSSION

Based on interview data, we distinguished five main impairment categories: (i) constrained socio-economic development; (ii) access restriction; (iii) non-compliance; (iv) constrained communication and participation; and (v) imposition of exogenous objectives (see Figure 2 for conflict categories, Table 2 for full meaning, see also De Pourcq *et al.*, 2015).

Local leaders and administrative officials reported five principal factors underlying the conflict manifestations: (i) the legacy of Colombian environmental policy, based on the so-called fortress conservation model (see also Brockington,

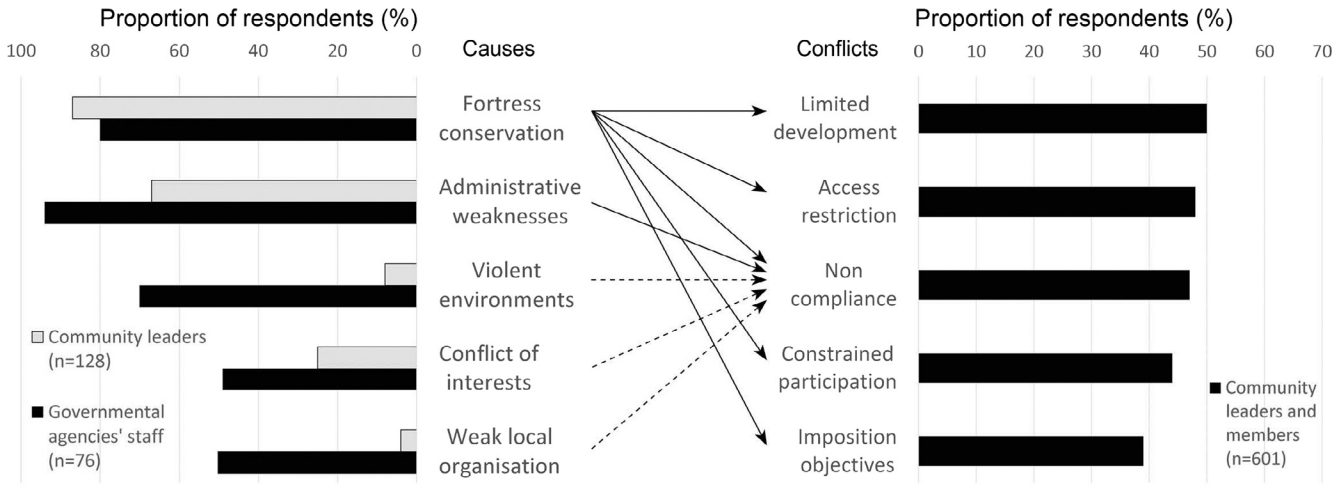

Figure 2. *Impairment framework (based on Yasmi et al., 2006a, 2006b) with proportions of individuals (N = 677) reporting the main impairment categories and their principal sources. Black lines denote the most significant relations between source and impairment.*

Table 2. *Impairments experienced by respondents. The percentages refer to the proportion of individuals (where N = 601) experiencing certain conflict categories*

Category	Meaning	Examples of actions perceived as impairment	%
Limited development	Actions intended to prevent or limit local infrastructure and/or development projects	Limitations to the building of houses, schools, tourism infrastructure, road construction, gas pipelines, electricity networks, etc	50
Access restriction	Actions intended to prevent people from having access to a particular resource	Restriction on extraction and/or use of natural resources (e.g., timber extraction); restriction on access to land and/or entrance to territory; obstruction of the legalization or formalization of land ownership	48
Non-compliance	Non-compliance by NPA administration with previous agreements or existing rules	Non-compliance with prior informed consent procedures (e.g., appointment of park functionaries without consulting local communities); non-compliance with (co-management) agreements and promises to adequately reflect community interests in NPA management; etc	47
Constrained participation	Actions that intentionally or unintentionally limit participation of stakeholders in NPA decision-making	Constrained local leadership in NPA management and administration; no, or limited numbers of, local park employees; constrained coordination and communication between NPA staff and local communities; barriers to community access to information; etc	44
Imposition of objectives	Actions implemented to pursue management objectives or goals of the NPA administration beyond the will or interests of the local community	Enforcement of the imposition of NPAs on ancestral lands; obligation of local residents to undertake certain management operations; forced displacement; etc	39

2002); (ii) weaknesses in NPA management capacity; (iii) conflicts of interests within the Colombian government; (iv) violent environments; and (v) weak organization at community level (Figure 2 for categories, and Table 3 for full definitions). Administration weaknesses and the fortress conservation model were most frequently cited factors by both parties. Respondents at the institutional level were more likely to claim the presence of violent environments, weak community organization and conflicts of interests in comparison to local leaders.

In what follows, we focus on the role of the fortress conservation model and administration weaknesses in conflict genesis. Violent conflicts have been an unfortunate reality in Colombia for over 40 years. We decided to integrate this factor in our discussion for its undeniable influence on park-people relationships.

This discussion is structured, following the "Conflict Impairment Framework" shown in Figure 2, in which we relate the five dominant sources of conflict to five prevalent impairment conditions.

(a) *The fortress conservation model*

The NPA model introduced in Colombia, and other parts of the global South since the 1950s, is based on the US example of Yellowstone national park. This model considers nature

Table 3. *Conflict sources experienced by local leaders and respondents at the institutional level (N = 204). The percentages refer to the proportion of individuals reporting each of the conflict sources*

Category	Meaning	Examples of conflict sources	Relationships with conflict conditions or impairments	%
Fortress conservation model	Inconsistency between the classical approach for nature protection, which separates national parks from people, and socio-economic realities on the ground	Non-compatibility between NPAs and tenure regimes; non-compatibility between NPAs and local resource use and extraction customs; absence of a legal framework supporting participation and/or local leadership in NPA management	Environmental regulations feed conflicts related to limited development, access restriction, constrained participation, and imposition of objective	84
Administration weaknesses	The problem of so-called paper-parks (see e.g., Carey *et al.*, 2000; Lockwood *et al.*, 2006), where areas are declared as protected by a government but never fully implemented	Lack of financial (and human) resources; nonexistent, contradictory and/or unclear environmental regulations; lack of reliable information on NPA contexts, etc	Weaknesses have brought about a tradition of non-compliance with conservation related efforts	78
Violent environments	Ongoing violence and political instability within or near NPAs	Armed conflict; displacement; the production and merchandising of illicit crops; etc.	Ongoing violence makes it difficult to comply with conservation processes	32
Conflict of interests	Conservation and local livelihoods are secondary to the exploitation of nature for financial and political gain	Public money injected in the NPAs that are more marketable and valuable as tourist destinations; the granting of mining permits and initiation of other development projects within certain NPAs, etc	Hidden interests of the government (i.e., tourism and mining) may lead to non-compliance with conservation obligations	34
Weak local organization	Weaknesses, instability and low capacity at the local community level	Fragile local organizations; internal community conflicts; power struggles for local leadership; local corruption; undemocratic decisionmaking processes at the local level; etc	Community weaknesses put at risk the effective and efficient implementation (i.e., compliance) of conservation projects	23

reserves free of humans as the ultimate conservation ideal (Adams *et al.*, 2004; Kalamandeen & Gillson, 2006; Lele *et al.*, 2010; Lockwood, Worboys, & Kothari, 2006; UAESPNN, 2007, 2012a, 2012a, 2012c, pers. comm.; West *et al.*, 2006). This so-called fortress conservation model (term used first by Brockington, 2002), has been identified by researchers around the world as the basic reason for the escalation of a range of park-people conflicts (Adams *et al.*, 2004; De Pourcq *et al.*, 2015; Kalamandeen & Gillson, 2006; Lele *et al.*, 2010). Implementation of this model in Colombia implicitly assumed that most NPAs were not already inhabited. However, in reality nearly all NPAs had been inhabited and/or used by a wide range of local communities long before their creation. Three distinctive dimensions of Colombia's environmental legislation implementing the fortress conservation model are particularly problematic.

First, according to Colombian environmental legislation (Ministerio de Ambiente Vivienda y Desarollo Territorial, Decree 622 of 1977, Art. 7), NPAs are incompatible with all types of land tenure except in the specific case of legally established indigenous territories. As a consequence, people not formally recognized as indigenous are not allowed to formalize individual or communal land ownership rights in NPAs.

If an individual or a group of people obtained legal property rights before the creation of a particular NPA, the Colombian State (through INCODER) is legally entitled to reclaim these rights through financial compensation (either by negotiation or direct appropriation; Ocampo Duque & Chilamack, 2012). Once the property rights are obtained, the original landowners may be evicted or relocated to other areas (Ocampo Duque & Chilamack, 2012). If the individual or group lacks legal property rights but has inhabited the specific NPA since before its creation, the Colombian government (through INCODER) is empowered to confiscate their lands. Existing inhabitants are financially compensated for any land improvements (e.g., investments in agriculture, infrastructure, etc.) that they carried out, after which they could be relocated outside the NPA (Ocampo Duque & Chilamack, 2012; UAESPNN, pers. comm.). Property purchase and land improvements that occurred after NPA creation are not recognized as legally established property (El Congreso de Colombia, Law 2 of 1959, Art. 13; El Congreso de Colombia, Law 99 of 1993). Hence, under such conditions persons or communities can be removed from NPAs without any compensation.

There are multiple cases of forceful evictions of people from NPAs in Colombia. To our knowledge, the most recent example occurred in Tayrona NPA, which is located along the Caribbean Coast and is one of the most famous touristic areas in the country. In March 2010, a fishing community in Gairaca

beach, lacking rightful property titles, was evicted and their homes destroyed (Republica de Colombia Consejo de Estado, 2011 community members and UAESPNN, pers. comm.). Although these fisher families had inhabited and used the area since before its transformation into a NPA, they received no compensation, based on the contention that their activities were in contradiction with the NPA's conservation objectives.

Despite the public status of NPAs, under which it is illegal to sell or buy land within their limits, Colombian notary agencies and the relevant State authority (i.e., INCODER) have frequently adjudicated land ownership acts inside NPAs after their creation (Table 4; Superintendencia de Notariado y Registro, 2012, 2013a, 2013b, 2013c, 2013d, 2013e, 2013f). For example, during 2002–03 the number of private properties within the boundaries of Tayrona NPA increased from 108 to 160 (Ojeda, 2012). Inconsistencies in public policy related to the adjudication of land ownership deeds within NPAs have fostered park-people conflicts all over the country. These conflicts are caused by the government's inability or unwillingness to validate or value ownership deeds that were legalized by the State in earlier times. For example, in the lowlands of the Sierra Nevada de Santa Marta NPA several landowners and high-level government officials obtained land ownership certificates. Anecdotal reports from IGAC staff indicate that these certificates may lose legitimacy within the next decade (IGAC staff, pers. comm.) as private land ownership within NPAs is illegal. Local elites have indicated they strongly oppose the notion of land expropriations and that, if necessary, they would use violence to safeguard their territories (community members, pers. comm.).

A second problematic dimension of Colombia's environmental legislation is the non-compatibility between NPAs and resource use and extraction activities. Conservation law prohibits all activities that the NPA administration deems to cause significant modifications to the natural environment or as a threat to the NPA' natural capital. This includes activities such as wood extraction, fishing, agriculture, cattle ranching, industrial development projects, oil production and mining (Ministerio de Ambiente Vivienda y Desarollo Territorial, Decree 622 of 1977, Art. 30). Access restrictions resulting from this legal framework are a significant source of conflict in all visited NPAs. Furthermore, the legislation precipitates conflicts related to restrictions to local development such as building projects in Colorados, the denial of tourist infrastructure development projects in Tayrona, and the obstruction of local gas and electricity lines in the lowlands of the Sierra Nevada de Santa Marta.

By law, both indigenous territories that co-exist with NPAs, and Afro-Colombian communities predating the establishment of the NPAs in which they are located, have the right to continue traditional production practices and income-generating use of renewable natural resources. However, NPA administration often restricts these rights, argumenting that certain activities are incompatible with the conservation objectives as established by the NPA administration of a particular area (El Congreso de Colombia, Law 70 of 1993, Art. 22; Ministerio de Ambiente Vivienda y Desarollo Territorial, Decree 622 of 1977, Art. 7). An example of constraints on traditional practices is where Afro-Colombian families are forbidden to undertake their customary fishing activities in some of the NPAs of the Pacific region, such as in Utria and Sanquianga. Restrictions on indigenous and Afro-Colombian traditional productive practices are a clear human rights violation, according to the International Labour Organisation convention of 1989. This was ratified by Colombia in Law 21 of 1991.

Respondents reported a third major problem within environmental legislation and subsequent legal frameworks. This was the regulation of community participation and local leadership rights in NPA creation and management. These legal regulations were a major source of constrained participation conflicts.

In response to international commitments, the Colombian NPA administration adopted the Policy of Social Participation in Conservation (PSPC) in 2002. The PSPC prescribes the need for dialog with, and the participation of, indigenous, afro-descendant and subsistence farmer communities in NPA administration. It also declares that NPA management has the objective of addressing historical conflict situations in NPAs and foster sustainable development solutions (Unidad Administrativa Especial del Sistema de Parques Nacionales Naturales, 2007). However, Colombian environmental regulations (El Congreso de Colombia, Law 2 of 1959; El presidente de la Rebublica de Colombia, Decree 2811 of 1974; Ministerio de Ambiente Vivienda y Desarollo Territorial, Decree 622 of 1977) have not been aligned with the PSPC, and this discrepancy creates legal loopholes. In reality, these legal regulations hold more weight in comparison to the PSPC when it comes to legal decision-making. Thus, the legal statuses maintain strong limitations on community participation in NPA management practices.

(b) *Weaknesses in management capacity*

Colombia experiences similar difficulties as other developing nations in the realization of its national conservation commitments. It shows a lack of institutional capacity and resources, unclear and contradictory legislation, weak national planning strategies and nonexistent co-ordination between governmental agencies (see also Carey *et al*., 2000; García-Frapolli, Ramos-Fernández, Galicia, & Serrano, 2009; Lockwood *et al*., 2006; Nolte, 2015; Stolton *et al*., 2003).

Respondents at community and institutional levels frequently reported weaknesses in management capacity as a

Table 4. *Number of properties adjudicated after NPA creation (Superintendencia de Notariado y Registro, 2012, 2013a, 2013b, 2013c, 2013d, 2013e, 2013f)*

NPA	Total ha (approx.)	Number of ha studied and percentage of total area	Number of properties acquired after NPA creation (surface in ha)
La Lenguëta*	15,356	8,424 (55%)	103 (5,076)
Tayrona	15,000	15,117 (100%)	172 (9,636)
Nevado Del Huila	158,000	3,459 (2%)	102 (1,844)
Los Hermosas	125,000	19,393 (16%)	233 (12,778)
Pisba	45,000	3,848 (8%)	111 (1,105)
Los Nevados	38,000	16,083 (42%)	68 (3,429)
Farallones	206,770	5,754 (3%)	718 (3,943)

* A defined subregion of the NPA Sierra Nevada de Santa Marta.

source of the experienced conflicts (67% and 94%, respectively). It is remarkable that nearly all NPA staff interviewed identified the administrative weaknesses of their own institution as the most important factor contributing toward park-people conflicts. This is in line with Nolte's research (2015), which pointed out that many Colombian park officials are frustrated about the weaknesses in management and prevailing enforcement regimes. Below, we examine the weaknesses listed most frequently by both parties in our study.

A first weakness is the lack of financial resources, which is a problem of many, if not most, NPAs around the world. Very few protected areas turn profits, with the vast majority depending on external funding (Cundill, Thondhlana, Sisitka, Shackleton, & Blore, 2013). In Colombia, the budget assigned to each NPA is about USD 100,000 per year on average or less than USD 0.5 per hectare (UAESPNN, 2012a). This is very low, even considering that every dollar assigned by the Colombian Government is matched by external funding (UAESPNN, pers. comm.). According to NPA staff, the budget assigned is insufficient to undertake even the most basic management activities such as ecological restoration, supporting community-based organizations, and enacting conflict resolution initiatives (see also UAESPNN, 2011, UAESPNN, pers. comm.).

Secondly, as in numerous other countries of the Global South (see e.g., García-Frapolli *et al.*, 2009), the Colombian federal government lacks a systematic overarching national planning strategy for nature conservation. Furthermore, several regulations are contradictory, and there is confusion about the legal mandates and competencies of relevant conservation agencies (see also Nolte, 2015).

Respondents also frequently listed the lack of a national conservation strategy. This is most apparent in the absence of a coherent regulative framework that regulates the use, occupation and tenure regimes of settlers in NPAs. Several NPA employees confirmed that there are no concrete strategies or proposals, let alone solutions, for resolving problems resulting from the presence of thousands of settlers in Colombian NPAs. These problems include illegal land occupation, environmental degradation, and/or rural poverty. Settlers are legally not allowed to exploit land within NPAs and do not have access to public services, such as gas and sanitary infrastructure, and/or cheap governmental loans. However, the Colombian government has not undertaken any serious initiative to arrange their relocation. In the SFF Los Colorados and Sierra Nevada de Santa Marta NPAs, settlers showed willingness to leave the area if they were relocated to other areas and/or paid for their lost territories. They blamed local NPA administration for not undertaking the necessary legal steps to make this happen.

Another constraint in enacting conservation programs in Colombia relates to weak or non-existent coordination both within and among governmental agencies at different levels (i.e., federal, regional and local governments). This problem has been reported in a number of other countries of the Global South, such as Mexico (see e.g., García-Frapolli *et al.*, 2009). Consequently, many challenges requiring effective inter-agency cooperation are mismanaged or ignored. These include compliance with complex regulatory frameworks and issues related to resource use, land occupation, and tenure regimes of settlers (see also Nolte, 2015).

A further point is that conservation policies have been implemented without clear integration and understanding of local contexts. Most NPA administrations lack accurate information on the number of inhabitants, their origins and their current activities, the exact NPA boundaries, the number and extension of private properties, the actual threats of armed groups, and/or precise biodiversity data. Many respondents argued that this absence of updated information certainly leads to misunderstandings between different parties, inappropriate budgetary, logistical and priority planning, and general mismanagement. Eventually, the lack of information can lead to conflict.

Weaknesses within the NPA administration management capacity have brought about a tradition of non-compliance (an important impairment condition). Stakeholders do not comply with a range of issues, including implementing co-management arrangements and conservation laws, and supporting local development projects (see also Figure 2).

(c) *Violent environments and unstable political context*

The potential detrimental impacts of armed conflict on (forest) conservation in protected areas is well known (Dudley, Ginsberg, Plumptre, Hart, & Campos, 2002; Ordway, 2015). Yet, few examples exist of the implications of armed conflict on park-people relationships.

Violent environments in Colombia continue to place relationships between park managers and local people under strain. Such environments include armed conflicts and their associated processes of displacement, as well as the production and merchandizing of illicit crops (mainly coca and marijuana). According to Nolte (2015) park staff officials in Colombia often experience risk to their well-being resulting from enforcement practices in the recent past. Several park employees were killed in the previous decades and the presence of armed groups within parks is quite common. Furthermore, park employees said they would avoid high-conflict tasks, such as the identification and sanctioning of violaters, to reduce the risk of retaliatory actions (Nolte, 2015).

We also experienced that violence complicates governmental agency access to NPAs, and thus hampers communication between park authorities and local communities. For example, in the Munchique NPA, park officers could not enter areas of the park in 2012 due to the presence of guerrilla and paramilitary groups. This was also the case in many other NPAs, such as Macarena, Paramillo, Catatumbo-Bari, and Farallones. Under such conditions, a healthy dialog and negotiation between NPA administrations and local communities can be complex. On several occasions, NPA staff referred to the "violent environment" as a reason for being unable to comply with co-management agreements, environmental regulations and land purchasing processes. In 2012, IGAC employees needed to obtain permission from armed groups to enter the Sierra Nevada de Santa Marta NPA to revise property titles and make inventories. Several of the IGAC staff members interviewed stated that when they were refused entrance, they were forced to base their judicial assessments of tenure and occupation regimes for this NPA mainly on second-hand information (i.e., interviews). This resulted in erroneous interpretations, which were then used to implement conservation programs, and to possibly initiate eviction measures in this UNESCO Biosphere Reserve. NPA officers complained that landowners are often associated with armed groups and are reluctant to return their lands to the government. They stated that landowners undertake everything in their power to prevent governmental agencies from entering their areas. Several residents from the Sierra Nevada de Santa Marta NPA explicitly declared that community members were considering the use of violence against park officers to safeguard their territories.

There was a large divergence in the perception of community level and institutional-level respondents about violent

environments as a factor for park-people conflicts (identified by 8% and 70%, respectively; see also Figure 2). Many NPAs in Colombia are governed from a distance through uniform, centralized, and technocratic management, which often leads to a lack of understanding and knowledge of the situation on the ground, including security conditions (see also García-Frapolli *et al.*, 2009 for the case of Mexico). Colombia's history of violence, political instability, and State oppression makes it difficult, and often dangerous, for government employees to enter contested areas (here NPAs). For local people, instability and oppression is part of their daily lives and they may not necessarily regard it as a factor that complicates park-people relationships, or simply prefer not to mention it, to avoid the risk of worsening relations with local armed groups.

5. THE WAY FORWARD: SOME SUGGESTIONS

This paper is premised on the idea that when particular conflict sources are present, associated conflicts (now also known as impairments) are also present. The conflict impairment framework was employed to describe the exact associations between conflict sources and resultant impairments. The model suggests unidirectional links between particular sources and impairments (see Figure 2). The conflict examples featured throughout the paper provide strong qualitative evidence for these links. As such, the impairment framework was revealing as for the first time it proved to be helpful to understand actual park-people conflict situations, and thus be valuable for the resolution of these conflicts. We recommend further research that uses the impairment approach for studying and resolving conflicts in other common pool resource contexts, such as fisheries, agriculture, forestry, and water management.

Our findings suggest that interventions at multiple levels are needed to work toward the effective resolution of the identified park-people conflicts. We propose five priority areas of action for the Colombian government.

First of all, the environmental legislative body needs to be reformed. It is paramount to improve local participation rights in NPA management and effectively move from autocratic approaches of governance to the concept of co-governance. The establishment and management of NPAs as a mechanism to divide and control people, spaces and resources may strengthen legitimacy and state governance (Peluso & Vandergeest, 2011; Roth, 2008). However, it often also leads to the exacerbation of a range of park-people conflicts. Previous research has shown that co-management of NPAs, whereby the management of its resources is shared by public and/or private sector stakeholders, can be successful in reducing conflict at grassroots level. This is true as long as some critical enabling conditions, such as information-sharing, effective participation and benefit-sharing, are realized in practice (De Pourcq *et al.*, 2015).

Inclusionary conservation might not be the silver bullet solution for all the problems faced by NPAs. However, it is all too easy to criticize and deny the need for involving local groups in protected area management, when no concrete alternatives are readily available. Today, inhabitation of Colombian NPAs and/or use of its resources are strongly limited or completely forbidden, yet fair relocation, subsistence and income-generating alternatives are usually not provided. Numerous members of the Colombian conservation society that were interviewed, including park directors, believed the relocation of farmer inhabitants is inevitable to allow for effective biodiversity conservation in NPAs. However, this goal is unrealistic, at least in the short to mid-term future. It is highly doubtful that Colombia will have the necessary funds to relocate all farmers (>47,000 people, and growing) to other areas. Current budgets assigned to NPAs are insufficient to undertake even the most basic management activities such as ecological restoration and developing alternative livelihood strategies.

A second priority area of action for the Colombian government is to empower the NPA administration. Moving beyond the so-called paper-parks, i.e., areas that are declared as government protected yet never fully implemented, requires that environmental regulations be followed on the ground. To accomplish this, the NPA administration needs more financial and human resources, training opportunities, and increased accessibility to information necessary for adequate NPA management. Furthermore, functional mechanisms need to be put in place to facilitate effective coordination within and among governmental agencies at different levels. The NPA administration also needs more legal decision-making power to confront the complex challenges found within NPAs.

Thirdly, peaceful and safe living conditions in NPAs are essential for avoiding and mitigating park-people conflicts. Colombia has recently entered a peace-building process at numerous levels. This progression hopefully represents a major step in ensuring that the competition between resource extraction and conservation stays within constructive borders and does not escalate.

The Colombian government also needs to re-align its conservation goals with other interests (e.g., the exploitation of nature for financial and political benefit), and to ensure that regulations, interventions and investments are not in contradiction with one another.

Finally, more efforts are needed to overcome weaknesses in local organizations' institutions and capacities. Without strengthening the capacities of these organizations, the implementation of both local development goals and environmental regulations on the ground, will not succeed. It should be clear that the responsibility for park-people conflicts not only lies with park officials. Multiple intra- and inter-community problems, such as power struggles for local leadership or illegal logging and mining in NPAs, may remain and put undue pressure on park-people relationships.

We expect the findings of this study to be valuable for managing conflict in protected areas in other tropical countries. Literature examples on park-people conflicts in the South, including those on displacement (e.g., Brockington *et al.*, 2006), social exclusion (e.g., Lele *et al.*, 2010) and impoverishment (e.g., Adams *et al.*, 2004), are comparable to the Colombian experiences. Similarly, protected area designation and management elsewhere in the tropics is affected by comparable complex realities and historical trajectories, as the ones detailed in this paper, including fortress conservation (see e.g., Adams *et al.*, 2004; De Pourcq *et al.*, 2015; Lele *et al.*, 2010) and the paper-parks phenomenon (Carey *et al.*, 2000; Lockwood *et al.*, 2006; Stolton *et al.*, 2003).

Looking ahead, a major challenge for protected areas in Colombia and elsewhere will be to overcome the dichotomy between biocentric and anthropocentric approaches to biodiversity conservation. Finding a balanced approach to conservation that is actionable in practice calls for a clear definition of acceptable trade-offs between human development and nature protection goals in NPAs. There is some evidence that the conservation state of protected areas tends to be higher when they are inhabited and/or managed by traditional societies (Ellis & Porter-Bolland, 2008; Vergara-Asenjo & Potvin,

2014). However, this does not automatically imply that all activities carried out by residents in NPAs should be tolerated. It is clear that some activities such as illegal gold mining activities simply need to be banned from NPAs, full stop. Further research is needed to determine which interventions lead most efficiently to conflict resolution and mitigation but also conservation gains. For example, is it possible that conservation goals are achieved regardless of the fact that NPA residents are exposed to multiple conflict situations? Or can conservation fail even at low levels of conflict? In any case, a better understanding of the potential linkages between conflict and conservation would benefit the conservation society.

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