Corridors for conservation, communities, and development: A critical analysis of the discourses and practices of the Alexander Skutch Biological Corridor, Costa Rica.

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Abbreviations

Acronym	English	Español
ACLA-P	La Amistad-Pacifico Conservation Area	Área de Conservación La Amistad Pacífico
ADI	Association for Integral Development in Santa Elena	Asociación de Desarrollo Integral Santa Elena
AMACOBAS	Association of Active Women in the Alexander Skutch Biological Corridor	Asociación de Mujeres del COBAS
AMUQ	Association for Women of Quizarrá	Asociación de Mujeres Unidas de Quizarrá
ASADA	Community Aqueduct and Sewage System	Sistemas de Acueductos y Alcantarillados comunales
ASBC/COBAS	Alexander Skutch Biological Corridor	Corredor Biológico Alexander Skutch
ASOCUENCA	Producer Association for the Development of the Peñas Blancas Microbasin	Asociación de Productores para del Desarrollo Integral de la Microcuenca del rio Peñas Bancas
CBD	Convention on Biological Diversity	Convenio sobre la Diversidad Biológica
GIZ	German Corporation for International Cooperation GmbH	Corporación Alemana para la Cooperación Internacional
MAG	Regional Ministry of Agriculture and Cattle Ranching	Ministerio de Agricultura y Ganadería (MAG) Regional
MBC	Mesoamerican Biological Corridor	
MINAE	Ministry of Environment and Energy	Ministerio de Ambiente y Energía
PES	Payment for Ecosystem Services	
PNCB	National Biological Corridor Programme	Programa Nacional de Corredores Biológicos
PNUD	United Nations Productive Landscapes Project	Programa de las Naciones Unidas para el Desarrollo
SDG	Sustainable Development Goals	
SINAC	National Conservation Areas System	Sistema Nacional de Areas de Conservación
TSC/CCT	Tropical Science Centre	Centro Científico Tropical
UCR	University of Costa Rica	Universidad de Costa Rica
UN	United Nations	Naciones Unidas
YU	York University	Universidad de York

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ABSTRACT

The mixed-use biological corridor model in Costa Rica seeks to tackle inter-connected social-ecological challenges under a common vision in which livelihood and production activities for development can enhance ecological connectivity and preserve ecosystem services for the benefits of humans and nature. Yet, there is a paucity of grounded empirical data on the implementation of corridor policy in Costa Rica, for which there is still no formal monitoring system in place. Using a combined discourse and practice theoretical approach, this research sought to examine the vision and execution mixed-use corridors through a case study of the Alexander Skutch Biological corridor (ASBC) in Costa Rica. Through a thematic analysis of interviews and documents from state, NGO, academic and community stakeholders, the thesis sought to uncover and understand how the purpose of the policy was articulated, how the practice of the policy was performed, and what connections and disconnections emerged between the articulations and performances of the corridor policy. The findings revealed the development objectives outlined in the management plan (livelihood and production activities) were performed under a dominant rationality where conservation requires development. Yet, the performance of objectives for community inclusion and biodiversity conservation varied, with local reports of continued ecological degradation and of community disengagement. Different situated agencies showed unequal opportunities to benefit from and participate in the corridor based on existing wealth and positions in relation to influential organisations in the corridor. Bottom-up performances of conservation beyond the management plan, such as community recycling initiatives, were rooted in sensory emotional logics of practice highlighting a blind spot in corridor management which did not exhibit this logic. The results suggest the ASBC and corridors like it must consider the extent of benefit sharing among corridor communities, social and environmental risks of activities which are promoted as part of the policy, and financial limitations faced by locals to implement the policy on the ground. In line with other studies, this thesis advocates for an integration of local situatedness into corridor policy to bridge gaps between corridor vision and execution and improve implementation outcomes for communities and conservation.

Keywords: mixed-use corridor, vision-execution, multi-stakeholder governance, local communities, situatedness, conservation and development, Costa Rica, discourse, practice.

CHAPTER I - INTRODUCTION

1.1 Mixed-use biological corridor policies: Costa Rica and beyond

1.1.1 The promise of mixed-use biological corridor model

Mixed-use biological corridors are a central model used in Costa Rican conservation policy, having gained traction in Mesoamerica and beyond as they promise to provide solutions to the biodiversity crisis whilst contributing to local livelihoods and sustainable development (MINAE, 2016; Patel, 2021). The threat of habitat fragmentation and degradation is high in Mesoamerica and other biodiverse tropical regions across the globe, given the cost conservation can impose on rural and developing societies (Adams et al., 2004; Gardner et al., 2009; Patel, 2021). Conservation, human well-being and development, some of societies key challenges for the future, are often presented in conflict with each other (Rands et al., 2010), but are integrated in mixed-use corridors which promise to connect social, ecological, and economic challenges under a common vision (Goldman, 2009). Corridors are broadly supported in conservation ecology literature as a strategy to ensure the maintenance of habitat connectivity and protect biodiversity from the accelerating threat of habitat degradation and fragmentation (Anderson & Jenkins, 2006). While the ecological logic of the original corridor model remains (Ankersen et al., 2006; Bennet, 2003), the emerging mixed-use model recognizes the need for an integrated approach which goes beyond solely focusing on biodiversity. Therefore, instead of imposing a 'fortress conservation' model, which can exclude locals from resources they depend on and alienate non-conservation stakeholder groups (Brockington, 2002), community participation and development are central components of mixed-use corridor policy in Costa Rica (MINAE, 2016) and other integrated landscape approaches across the tropics (Reed et al., 2016).

In Costa Rica, 33% of the territory is protected under its state-managed National Protected Area Network and connected through 44 corridors comprising its National Biological Corridor Program (Spanish acronym PNBC) (SINAC, 2017). It is considered the most successful protected area network in Latin America (Elbers, 2011). Costa Rica's current National Biodiversity Strategy and Action Plan for Adaptation of Biodiversity presents the PNBC corridor network as a key strategy to improve habitat connectivity for biodiversity conservation, foster the sustainable use of natural resources, increase climate resilience, and distribute its benefits equitably (MINAE, 2016, p7). The small central American country is highly biodiverse, reportedly home to 6% of globally known species, and many of which are endangered or endemic (Rapson et al., 2012; Honey, 2008). It is also a country experiencing demographic growth which is heavily dependent on a still expanding agricultural sector, continuing to threaten ecosystems with soil erosion, contamination, and deforestation (Bonilla-Carrión & Rosero-Bixby, 2000; Rapson et al., 2012; Sanchez-Azofeifa et al., 2007). The Costa Rican corridor policy conceptualises corridors as mixed-use landscapes which through biodiversity-friendly management and inclusion of livelihood and production activities for development can enhance ecological connectivity and preserve conservation and ecosystem services for the benefits of humans and nature (Chazdon et al., 2009; DeClerck et al., 2010; Harvey et al., 2008; MINAE, 2016). Activities encouraged inside corridors range from PES schemes, debt-for-nature swaps, ecotourism ventures, and agricultural production

integrating agroforestry or silvopastoral systems (Allen, 2018; Arauz-Beita & Arias-Navarro, 2016; Daugherty, 2005; Fletcher & Breitling, 2012).

Costa Rica's corridor network is managed by SINAC (Spanish acronym for National Conservation Areas System), a subsidiary body of the Ministry of Environment and Energy (MINAE), in a participatory institutional system of decentralised management (Arauz-Beita & Arias-Navarro, 2016). This decentralised governance structure relies on partnerships between state, NGO, and private sectors to implement each corridor, managed through local corridor committees in which community representatives are encouraged to participate (SINAC & GIZ, 2018). Movements towards decentralization and marketisation in forest conservation governance hold that mixed partnerships of community, private and state actors can improve the efficiency, equitability, democracy, and profitability of conservation initiatives compared with underfunded, restrictive, and inefficient state management (Fletcher & Breitling, 2012; Lemos & Agrawal, 2006). The Costa Rican model adopts this vision; therefore, its corridors are co-managed by MINAE/SINAC with community representatives, private enterprises and international agencies acting as partners, and responsibility for the implementation of corridors is devolved to the corridor users and its local committees (PNBC coordinator, pers comm, 2021).

1.1.2 The mixed-use corridor model: from vision to execution

Despite its promise, the successful practical application of the corridor model is not supported by widespread evidence. There is still no data on the effectiveness of the Costa Rican corridor network in improving ecological connectivity, and there are reports that much of the land both inside and outside of the protected area and corridor network is affected by fragmentation and degradation (Sanchez-Azofeifa et al., 2007; SINAC & GIZ, 2018). Literature on corridor implementation is limited largely due to the complexity of ecological and social dynamics which require assessment and difficulty of measuring performance across landscapes over time (Brodie et al., 2016; Gorenflo, 2016; Keeley et al., 2018). Thus, corridors are critiqued on the basis that while discursively promising, evidence for their implementation success is still lacking (Keeley et al., 2018). Besides monitoring shortfalls, effective corridor implementation is limited by a myriad of challenges including governance effectiveness, funding limitations, the opportunity cost of conservation, multi-stakeholder participation, management of multiple interests and cultures, and community acceptance, to name a few (Anderson & Jenkins, 2006; Brodie et al., 2016; Keeley et al., 2018; Lombard et al., 2010; Worboys et al., 2010). Furthermore, the win-win solutions which promise biodiversity conservation and community wellbeing benefits often receive criticism for oversimplifying complex problems and masking conflicts which may need addressing (Igoe & Brockington, 2007; McShane et al., 2010).

Several studies on the multinational Mesoamerican Biological Corridor (MBC) initiative highlight issues for local communities and nature, suggesting corridor benefits for communities and conservation are more limited than the rhetoric suggested (Finley-Brook, 2007; Grandia, 2007; Hill, 2007). Like Costa Rican corridor policy, the MBC employs mixed-stakeholder partnerships and market-based mechanisms to achieve its sustainable development and biodiversity conservation goals. All MBC studies found top-down

governance issues where local communities were often not consulted on or engaged with the corridor initiative, citing lack of representation of their interests and lack of understanding of the objectives. This lack of clarity led multiple actors to interpret the corridor objectives in multiple ways resulting in conflicts over how sustainability could be achieved (Hill, 2007). Conceptually ambiguous corridors designed to include multiple stakeholder interests including scientists, donor agencies and policymakers, may ultimately be rejected by the community they aim to benefit due to the complex political and power dynamics occurring on the ground (Goldman, 2009). Furthermore, the trend towards market-based forms of conservation associated with 'green developmentalism', observed through the prevalence of PES or ecotourism initiatives in Costa Rican corridors, has been critiqued on the basis that it could lead to an intensification of uneven development and facilitate natural resource degradation under the guise of a green agenda (Fletcher & Breitling, 2012; McAfee, 1999).

Ultimately, the critiques raise concerns about the implications for nature and local communities if inadequate design and management leads to leakage or exclusion from benefits (Barr & Sayer, 2012; Latawiec et al., 2015), rendering an important potential incongruency between the win-win discourse and practical implementation of biological corridors (Patel, 2021).

1.1.3 Problem statement: the need for further corridor implementation research

The mixed corridor model offers a framework to tackle interconnected socio-ecological challenges, garnering broad support across multiple sectors of society including conservation NGOs, policymakers, governments, and private enterprises (Reed et al., 2016). On the global biodiversity conservation policy stage, the United Nations Convention on Biological Diversity (CBD), Sustainable Development Goals (SDG), and post-2020 Global Biodiversity Framework are seeking to bring this integrated landscape vision to reality for the benefit of humans and nature (Harvey et al., 2014; Reed et al., 2016). However, given evidence for corridor implementation success is still lacking (Keeley et al., 2018), and the significant knowledge gaps regarding the funding limitations, institutional and governance issues, and addressing of conflicting interests of diverse stakeholders which can hinder successful implementation of integrated landscape approaches (Chazdon et al., 2017), more research is needed to better understand how mixed-use corridors can deliver the much sought-after win-win-win vision for conservation, community, and development in practice.

The ways in which an integrated landscape policy such as a mixed-use corridor will manifest in practice are highly context specific, as the realities and histories of corridor stakeholders which influence the interpretation and implementation of the policy on the ground are not uniform in character, impact or outcome (Roth & Dressler, 2012). While outcomes cannot be assumed to be positive or negative, trade-offs and difficult choices for biodiversity and human well-being can be expected (McShane et al., 2010). Resolving these trade-offs can be difficult as problems are often perceived and understood in multiple and sometimes disparate ways, influenced by multiple interests, experiences and capacities that are situated in local realities (McShane et al., 2010). There are few studies which explore how corridors in practice compare to their discourse (Patel, 2021), and to the researcher's knowledge there are none for Costa Rica. There is therefore an urgent need for grounded empirical detail on the implementation of corridors in Costa Rica, which is often missing from discussions about

conservation governance and environmental policy (Hausmann et al., 2016; Roth & Dressler, 2012). Through a critical analysis and comparison of discourses and practices in a Costa Rican biological corridor case study, this research offers much needed insights into the line, in other words, the connections between the vision and execution of mixed-use corridors in Mesoamerica, and beyond.

1.2 Introducing the Alexander Skutch Corridor (ASBC)

The Alexander Skutch Biological Corridor (ASBC), known locally as Corredor Biológico Alexander Skutch (COBAS), is a mixed-use corridor located in the South Pacific region of Costa Rica. It was one of the first corridors in Costa Rica to be integrated as part of its National Biological Corridor Network (PNBC) in 2006, contributing to the countries National Biodiversity Strategy and Action Plan for Adaptation of Biodiversity, which seeks to improve habitat connectivity for biodiversity conservation, foster the sustainable use of natural resources, distribute its benefits equitably, and increase climate resilience (MINAE, 2016, p7). The ASBC region is ecologically significant due to its unique longitudinal and altitudinal gradient, which connects the northern Chirripó National Park and Las Nubes biological reserve with the southern Los Cusingos Neotropical Bird sanctuary. The corridor represents a key site for large populations of endemic and migratory species (Acuña Prado et al., 2017). The corridor also contains eight rural communities, with an estimated population of round 2000, whose primary livelihood activities are agricultural production – in particular coffee, along with sugarcane, tubers, and livestock (Canet-Desanti, 2005; Arauz-Beita & Arias-Navarro, 2016).

The most recent satellite data suggests 35% of the ASBC is covered by primary forest (Acuña Prado et al., 2017), and the rest is a matrix of forest patches, agricultural fields and pastures, and degraded lands (Rapson, 2008). An assessment of forest cover trends from 1998-2008 showed forest cover decreased by 19%, largely due to the expansion of pineapple farms and conversion of coffee plantations into pastureland (Rapson et al., 2012). The same study showed that agricultural activities had led to a loss of over 100ha of primary lowland forest (Rapson et al.,2012). However, recent trends indicate dense forest fragment size and frequency may have increased slightly (by around 5%) between 2005-2016, showing evidence of some regeneration and recovery of forest cover in more recent years (Acuña Prado et al., 2017) which coincide with the PNBC designation. Still, expansion of permanent and semi-permanent agricultural land continues in the corridor (Acuña Prado et al., 2017), as does population growth (Canet-Desanti, 2005).

The official goal of the ASBC is to protect biodiversity through sustainable land use management and ecological restoration to improve connectivity, development, and human well-being (Rapson, 2012; MINAE/GIZ, 2018), and the current management plan for the corridor proposes several strategies to fulfill this goal (SINAC, 2018a). Yet, the convergence of multiple visions, ideologies and agendas may be leading to unexpected policy outcomes (Martinez & Montoya-Greenheck, 2021). Existing empirical data for forest cover suggests diverging trends for habitat connectivity, with agricultural intensification on one hand and reforestation on the other. Beyond this, there has not yet been any monitoring of the corridor's implementation, particularly regarding the objectives set out in the plan and how

they are put into practice, and therefore the line from vision to execution of the corridor remains unclear.

1.3 Outline and structure of thesis

This thesis presents a case study investigation which aimed to *uncover and understand the relationship between the discourses and practices of the ASBC*, a Costa Rican mixed-use biological corridor. This investigation puts forward rich empirical data on the discourses and practices of this mixed-use corridor case, contributing to filling the knowledge gap on the line between the policies vision and execution.

The thesis is structured as follows: Chapter II presents the theoretical underpinning used to address the research problem, based on a combined discourse and practice approach, arguing for the applicability of each and complementarity for this research. The theoretical approach concludes with a presentation of the conceptual model and research questions. Chapter III presents the methods used, describing and justifying the research design, case study approach, data collection and analysis. Chapter IV presents an overview of the Alexander Skutch corridor, including its establishment history, ecological significance, community characteristics, principal livelihood activities, and land use trends, concluding with the identification of key stakeholder groups for the current 2018-2025 management phase. Chapters V, VII, and VIII present the analytical results for each of the research questions, which seek to uncover and understand how the corridor purpose was articulated (Chapter V); how the practice of the corridor was performed (Chapter VI), and how the connections and conflicts arose between the discourses and practices of the corridor's stakeholders (Chapter VII), thus answering the principal research question. Finally, Chapter VIII concludes with a summary and discussion of the key results, reiterating the significance and contribution of the thesis, and presenting several recommendations for future research and corridor management.

CHAPTER II - THEORETICAL FRAMEWORK

This chapter begins by outlining the theoretical underpinning of this thesis, which seeks to uncover and understand the line between a corridor policy vision and execution, taking a post-structural political ecology perspective. The theories chosen to examine the corridor vision and execution are discourse and practice, which are reviewed individually in the context of biological corridor policy, concluding with a statement on their complementarity and competency to address the research objective. Next, a conceptual framework is presented which brings the two theories together and operationalises them into five sensitising concepts to guide analysis: 1) articulation of corridor purpose, 2) stakeholder rationalities, 3) performance of corridor purpose, 4) logic of practice, and 5) situated agency. After the analytical concepts have been outlined, the chapter concludes by presenting the research questions formulated to address the overall research objective.

2.1 Discourse theory

Discourse theory holds that language not only describes the world, but profoundly shapes our view of it (Fischer & Forester, 1993). The ideas, concepts, and categories held in the language used to describe social phenomena are embedded with meanings which shape the way we understand, and therefore act on the world. Thus, the theory holds that the ideas, concepts and categories which constitute discourses used in corridor policy plans, reports, research papers, or in daily conversations and discussions, will shape the implementation of the biological corridor in practice. As highlighted by scholars of forest governance, 'the way that we speak about forests directly impacts their governance' (Leipold, 2014). Discourse theory, which examines 'language-in-use' is thus an important tool for environmental policy analysis (Hajer & Versteeg, 2005; Wetherell et al., 2001). For this research, discourse is defined as

> *"An ensemble of ideas, concepts, and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices" (Hajer & Versteeg, 2005)*

'Meaning' refers to how society makes sense of the world and its realities, placing importance on symbols and experiences governing the way people think and act (Hajer, 1993) Discourse theory acknowledges the multiplicity of socially constructed realities, seeking to uncover and understand a multiplicity of meanings from language (Wetherell et al., 2001). A biological corridor, for example, may be explained in different ways, with descriptions of scenery, evoking metaphors, or justified using concepts such as 'sustainable development,' 'human wellbeing,' or 'biodiversity conservation.' The concepts may be used together or in isolation, and by some stakeholder groups but not others. They could be interpreted to mean multiple things or not understood at all and be implemented differently and according to these multiple interpretations.

Thus, meanings are not fixed, but are constructed in the production and reproduction of language (Hajer & Versteeg, 2005). Meaning creation is a process which can be captured through the concept of *articulation.* Articulation is a practice through which relations between elements, such as words or symbols, can become re-ordered, therefore explaining how meanings in social reality are shaped (Laclau & Mouffe, 1985). In other words,

articulation captures the use of language – in its production and reproduction – in shaping meaning. Through articulation, interest values emerge, are maintained, or are lost. As meanings embedded in discourses are socially constructed, their shaping is subject to the historical, cultural, and political context, or societal fabric in which they are shaped, which accounts for both power and contingency (Behagel, 2012; Hajer & Versteeg, 2005).

Through articulation, actors position themselves according to their interests and realities (Hajer & Versteeg, 2005), knowingly or not. Actors align themselves to particular perceptions, narratives and arguments which make up the *rationalities* of their discourse (Fischer & Forester, 1993). Rationalities can reinforce or compete with one-another, as they represent distinct ways of thinking, understanding and ultimately acting on issues through the use of distinct strategies (Dean, 1999). The framing of a problem – in other words, the rationality behind an articulation – will structure the responsibilities and solutions for that problem (Liftin, 1994). The dominance of a certain meaning, and by extension a certain rationality, can lead to the marginalisation of another (Yanow, 2006). Thus, certain discourses and their accompanying rationalities, such as the need for sustainable development to achieve conservation, dominate over others and become institutionalised (Arts & Buizer, 2009). In the same vein, alternative discourses and rationalities can emerge which challenge dominant discourses, such as the importance of protecting peasant identities to foster human-nature synergies (Bolaños, 2020; Martinez & Montoya-Greenheck, 2021). Even the use of the same terms and concepts, such as 'sustainable development,' does not necessarily guarantee mutual understanding amongst actors, and can in fact conceal discursive complexity which stimulate misunderstandings and facilitates the continued dominance of some discourses over others (Hajer, 1993).

This underlines the importance and core strength of discourse theory, as it allows for a critique of hegemonic discourses in forest governance and policy which may lead to the promotion of practices with unfavourable outcomes for nature and society. A widely studied example is the discourse of sustainable development, which is used in corridor policy in Costa Rica promoting solutions for society and nature (Canet-Desanti et al., 2012) and characterises most contemporary environmental policy. The discourse of sustainable development has been critiqued on the basis that it allows powerful actors to 'cloak themselves' in language of environmentalism whilst promoting an agenda of economic growth (Dryzek, 2013). Through the rationality that economic growth is necessary to deliver positive social and environmental outcomes a 'neoliberal environmentality' disciplines society through incentive structures which encourage desired forms of action and behaviour, being widely accepted, and adopted despite potential problems for social equity and environmental justice which result (Fletcher, 2010; Foucault, 2008).

2.2 Practice theory

In contrast to discourse, practice theory highlights the importance of activity, as opposed to meaning, in the conception of social reality (Behagel, 2012). Practice theory highlights that while the values, norms and knowledge embedded in discourses are important in explaining human behaviour, these also emerge from everyday interpretations, interactions, and improvisations which are produced and re-produced through activity (Arts et al., 2013; Cook & Wagenaar, 2012). As examples, the use of local expertise, influence of traditions

established locally, or way community councils are conducted on the ground represent practices which shape environmental policy (Behagel et al., 2019)**.** Practice theory holds that it is the day-to-day realities and activities of actors which ultimately lead to the implementation of, in this case, a biological corridor policy, and can therefore best explain how and why it is implemented in a particular way. Though still relatively novel in its application for forest policy analysis, practice theory has thus emerged as a useful tool to understand the on-the-ground implementation and outcomes of forest policies (Arts et al., 2012). This research defines practice as

> *'An ensemble of sayings, doings and things in a specific field of activity'* (Arts et al., 2014).

'Sayings' refer to people and what they speak to each other, capturing their discourses and the explicit rules, norms and knowledge embedded in them. 'Doings' refer to interactions between humans and nature, which hold implied knowledge, skills and scripts followed which influence these interactions. 'Things' refer to material objects, such as nature or infrastructure, in which the practices exist. Together, these sayings, doings and things can paint a picture of the practice of the corridor on the ground, capturing the processes which guide actor behaviour in the field in which they are situated. The 'field of activity' in which the practice of a policy takes place is comprised of distinct yet entwined components which lead to how a policy plays out in a particular context, including knowledge, meaning, power, social institutions, rules and activity (Schatzki et al., 2001). The complex ensemble of rules, sayings, understandings, objects, and actions are entwined in a way which departs from conventional ideas of structure and agency to explain human behaviour (Behagel, 2012), and in this context, the performance of a biological corridor policy. In order to examine and unpick this complex ensemble of factors, the concepts of logic of practice, situated agency and performativity can be used to guide a practice-based approach.

Logic of practice seeks to capture and understand the 'hidden' principles actors follow which guide their behaviour (Bourdieu, 1990). In other words, logics of practice capture the generative principles organising the 'doings, sayings, and things' which constitute practice, or put simply, the 'thinking' behind an activity. Similar to rationalities in discourse, which are made up of perceptions, narratives and arguments, the principles which make up a logic of practice refer to knowledge, understanding and sense-making which occur in practices (Arts et al., 2013), dominating, contradicting and co-existing with each other (Costa, 2006). What distinguishes a logic of practice from a rationality is that *logics of practice* are formed in local and practical contexts and are shaped more by routines than any external rules. As explained by Bourdieu, 'practice has a logic which is not that of the logician' (Bourdieu, 1977: p109). Logics of practice can thus capture improvisations which cannot be controlled or predicted, and scripts which cannot be changed overnight (Arts et al., 2013). For example, logic of practice can explain that hunting behaviour persists in a biological corridor due to local traditions and customs, despite rules prohibiting it. This lense strengthens an analysis of forest conservation policy, as it moves beyond limiting constructs such as institutions, incentives, and rules (e.g. Cleaver & Franks., 2005) and captures the intrinsic unpredictability of day-to-day practice.

Situated agency captures the crucial influence of the local settings or context in which actors are situated in defining their choices and abilities to act (Bevir & Rhodes., 2005). Actors are

not simply autonomous individuals acting in fixed or strategic ways as they do in rationalist theory (Krott & Giessen, 2014), but are constantly interpreting rules, discourses, knowledge and objects in their day-to-day practices (Arts et al., 2014), leading them to define their ideas, identities and behaviour accordingly (Bevir & Rhodes., 2005). In practice theory, individuals are only autonomous within the bounds of their social, discursive, and material realities and context. For example, the presence of certain networks and organisations in an area can enable a connected farmer to access knowledge of a novel approach to manage their land, and conversely limit a farmer without access from benefitting from this opportunity. Situated agency can therefore be a useful concept to show how and where inequalities may arise in the practice of forest conservation policy.

Finally, the concept of *performativity* addresses the underlying 'meaning in action' principle of practice theory. As discourse influences how we understand the world, but also how we act upon it, meaning has material impacts. In other words, the discourse of a policy does not just represent reality, but constitutes it in practice – making it performative (Law & Urry, 2004). In practice, the 'performative' articulation or enactment of discourse constantly modifies and adjusts it – how doings, sayings, and things are produced and reproduced in the field (Arts et al., 2014). By examining performativity, the way norms, knowledge and power can shape social practices, but also how the practices themselves also can shape discourse – either sustaining or resisting it – can be analysed (Butler, 1997). Thus, the concept allows for an examination of how systems of knowledge, but also the more contingent 'doings, sayings and things' actively produce reality (Behagel, 2012).

The core strength of a practice-based approach is that it 'decentres' the role of actors, institutions, discourses or power, placing the emphasis on the practice in question which is being examined. Here, the dynamic interaction between all of the elements in action in a particular field of practice is at the centre of the analysis, allowing to explore these complex dynamics in a more nuanced way than previous theories which explain human behaviour. Thus, conceptions about the importance of a structure ordering social system, or individual agency are not as analytically important as entwinement of agency and structure in practice (Schatzki et al., 2001).

2.3 Examining corridor implementation through discourse and practice

The use of discourse and practice theories allow an approach which is well suited to highlight and explain the relationship between the vision and execution of a mixed-use biological corridor. As presented in Chapter I, the ways in which a corridor policy is executed in practice can be highly context specific, leading to connections or disconnections between its discourses and practices. A myriad of challenges can emerge in the practical implementation of a corridor, such as lack of understanding of the objectives, governance conflicts, low community participation, uneven representation of interests, inadequate protection, and the legitimisation of problematic practices, to name a few. The use of discourse and practice theories in combination can be used to highlight and understand such challenges by focusing on the line between meaning, interpretation, and implementation.

While discourse and practice theories highlight different phenomena, they do so in compatible ways, sharing the same basic ontological and epistemological assumptions. These

theories are compatible as they both understand knowledge, actors, power, norms, and institutions as interconnected (Schatzki et al., 2001), and acknowledge a multiplicity of socially constructed realities can co-exist (Costa, 2006; Wetherell et al., 2001). Discourse and practice theories both place importance on the influence of identity, positionality, relationality, and the contingency of logics which underline a policy (Behagel, 2012), which are instrumental in defining and understanding the vision and execution of a policy - from its meaning and interpretation to its implementation.

Furthermore, the strengths of each theory complement each other to address the research objective. Relevant to examining the vision and execution of a policy, discourse focuses on *meaning* and practice on *activity* (Behagel, 2012). Discourse theory examines the different meanings and interest values associated with the corridor policy, identifying rationalities, and the knowledge and power influencing their production and reproduction. On the other hand, practice theory examines activity and the entwinement of situational factors which shape understandings and behaviours in complex, interdependent, and unexpected ways. The field of practice is where the multiple meanings held in discourses are enacted, performed, or contested – thus becoming real. Together, the two theories contribute to a post-structural political ecology perspective which acknowledges the social structures, power relations and contextual contingencies underlining the corridor policy (Robbins, 2012). As stated by Bevir (2010b; p 60) we not only *'make the world by acting on certain beliefs and meanings, but also make the beliefs and meanings on which we act'.* Discourse explores the meanings, values and norms which mediate out experience and understanding of the world and ultimately how we act upon it. In turn, practice explores the way we act upon the world, and how activity constructs the meaning and discourses we follow. Thus, corridor implementation is examined through a lense which accounts for how meaning held in discourse and activity held in practice are inextricably linked, and therefore are justified as appropriate to examine the vision-execution paradigm.

2.4 A conceptual framework for corridor discourses and practices

The study operationalises the theories for methodological research on corridor vision and execution through five sensitising concepts, adapted from Behagel (2012). These are described below and summarised visually in Figure 1 overleaf. The concept titles are shown in bold, their analytical handles in purple, and a brief explanation is found below each. The dotted lines overlap and interconnect between all of the concepts, symbolising their messy entwinement under the post-structural framework of discourse and practice theory.

(1) Articulation of corridor purpose: The process of articulation captures the production and reproduction of *meaning* – this process shapes and reflects how actors understand social reality, and in this case, the biological corridor. Articulations of the corridors purpose highlight the ways actors speak about, understand, and interpret the purpose of the corridor, and the concepts, images, and metaphors they evoke. For example, a corridor may be understood by some as a forest or a river, and by others as a management entity. In describing and explaining the purpose of the corridor, different actors will reveal different understandings and interpretations of the corridor as a concept and of its objectives, which will reveal multiple interest values based on the elements which are presented, ordered, and omitted through their articulations.

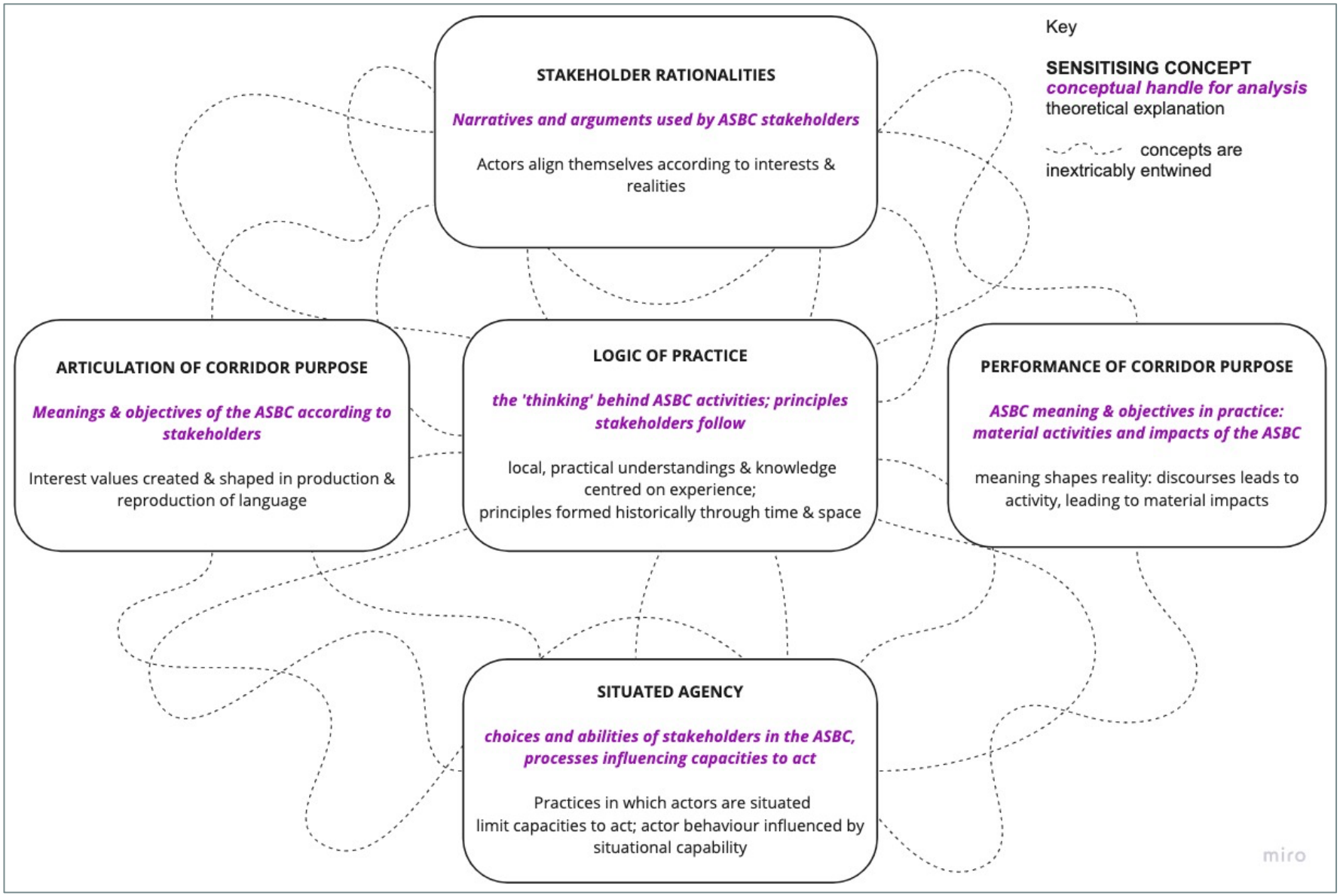


Fig 1 Conceptual map for the analysis of discourses and practices in the ASBC, with five sensitising concepts (adapted from Behagel, 2012): 1) articulation of corridor purpose; 2) stakeholder rationalities; 3) performance of corridor purpose; 4) logic of practice; and 5) situated agency

(2) Stakeholder rationalities: Through their articulations, actors position themselves knowingly or unknowingly according to their interests and realities. The perceptions, narratives and arguments of corridor stakeholders make up the *rationalities* of their discourse. Stakeholder rationalities will thus represent distinct ways of perceiving, questioning, and acting, which will co-exist within the discourses of stakeholders, and align or be in competition with one another. A rationality could be, for example, the justification of sustainable development for conservation, or the importance of protecting peasant identities to foster nature-human synergies. Consistencies in language may not necessarily be indicative of a distinct argument. Instead, attention must be paid to what is framed as problem or solution in the discourse, as these framings reveal more about actor positioning than a linguistic regularity.

(3) The performance of the corridors purpose: While articulations of the corridor purpose reveal meanings attributed to the corridor, *performances* of the corridor purpose focus on the activities which result from these meanings, so 'meaning in action'. In other words, performativity captures the production and reproduction of *activity* – the ways discourses shape how actors understand and therefore *act upon* reality, in this case, the biological corridor. The way actors describe and discuss the activities, processes and material impacts underlining the practical implementation of the corridor, including the norms and knowledge entailed therefore captures the performance of the corridors purpose. The performance of corridor purpose will be influenced by meanings held in articulations, but also by the situational fabric of the corridor, the day-to-day contingencies. As an example, an actor's performance of the corridors purpose could be the practice of reforestation. The performance may represent an enactment of a discourse and therefore may be related to articulations of the corridor as a forest, or conservation area, or matrix of forest and farms. But this performance may also be related to their experiences, routines, livelihoods, land, and many other potentially unexpected factors shaped in practice, through which discourses, in turn, are also shaped. Performances can be sensitised further through the concepts of situated agency and logic of practice.

(4) **Situated agency:** Actors in the field of practice, or in the biological corridor, also act according to their interpreted capacities shaped in their local context and practices. In other words, stakeholder actions are subject to their understanding and interpretation of their situational fabric – containing local rules, discourses, knowledge, and objects which influence their perceived choices and capacities to act. For example, actors in the corridor may have differential access to knowledge, resources, or opportunities to participate in an activity such as reforestation or attend a committee meeting in which objectives are discussed. An actor may understand reforestation by its social and ecological benefits, and desire to transform their farm based on this knowledge, but their income or time may be too limited. Another actor may be present at a committee meeting to discuss corridor objectives, yet not feel confident enough to present an idea if a more powerful actor is dominating a discussion. Actors in the corridor will therefore not be fully autonomous in their actions, subject to interpretations of the many day-to-day contingencies of the situational fabric.

(5) **Logic of practice:** Actors in the field of practice, or in the biological corridor, will act following a few generative principles intrinsic to their practices. These guiding principles are captured in actors' *logics of practice*. 'Intrinsic to practice' means the principles are not imposed by external structures such a laws or institutions, but are a product of practical knowledge, local understandings, and routine behaviours – essentially centred around experience. This experience may be marked by unexpected situations which cannot be predicted or controlled, such as relationships between actors, or learned information which leads to new practices in the corridor. This is an important distinction to make with stakeholder rationalities, which can be more easily predicted and controlled. Capturing actors' logics of practice in the biological corridor therefore entails capturing the thinking that guides their practices, contributing to performances in the implementation of the corridor.

2.5 Research Questions

This research sought to investigate the connections and conflicts which emerge between the vision and execution of mixed-used biological corridor policy in Costa Rica and beyond. To address this research objective, a case study of the Alexander Skutch Biological Corridor, Costa Rica was conducted to answer an overarching research question and three sub-questions formulated alongside the conceptual framework, which are as follows.

Central Research Question:

What was the relationship between the discourses and practices of policy stakeholders in the Alexander Skutch Biological Corridor (ASBC)?

Sub Research Questions:

1. How was the purpose of the ASBC *articulated* in the discourses of policy stakeholders?

This question explores the multiple and distinct ways corridor stakeholders express their vision of the purpose of the corridor. This includes interpretations of the corridor as a concept and understandings of its objectives. The concept of *articulation* captures the process of meaning creation through language and reveals interest values which emerge as language is produced and reproduced. The ways stakeholders align themselves to narratives through their language indicates distinct understandings which could compete or align with distinct stakeholder *rationalities*, forming the discourses of the corridor policy.

2. How was the practice of the ASBC *performed* by policy stakeholders?

This question seeks to uncover the multiplicity of corridor practices performed by stakeholders and understand the factors underlining these performances. While RQ1 focuses on meaning, RQ2 focuses on activity in the corridor – the interpretations, interactions and improvisations which make up corridor practices. Thus, the practices of the corridor are *performances*. Actor logics of practice and situated agencies capture how performances can be mediated by principles stakeholders follow generated in their practices and situational factors dictating the choices actors interpret they can act within. Corridor practices are thus

performed by stakeholders according to their logics and agencies, and varied performances will capture actions making up the corridor implementation, and explain the processes involved.

3. How did connections and conflicts emerge between stakeholder's discourses of the ASBC purpose and their performances in practice?

This question seeks to highlight how connections and conflicts arise between the vision and execution of the ASBC policy. This question brings together the results from RQ1 and 2 to uncover how the articulations from the discourse and performances of the practice interact, leading to connections or conflicts between the discourses and practices. Connections and conflicts refer to practices being consistent or inconsistent with discourses. The question seeks to elucidate the impact of power and knowledge in wielding discourse, but also the importance of context specific factors which limit and influence how the policy is implemented in practice in unexpected ways. The outcomes may not be as negative as presumed by critics of mixed-use corridors, or as positive as those who promote them, and the question seeks to highlight what lessons may be learned to bridge gaps and find middle ground for this policy.

CHAPTER III - METHODOLOGY

3. 1 General Approach

This chapter outlines and justifies the research approach used for the study, presenting its alignment with the basic assumptions of discourse and practice theories to fit the conceptual model and research questions posed, justifying the use of a case study, outlining the methods for data collection and analysis used, and finally reporting on the overall research process.

3.1.1 Case Study Research

This research takes a case study approach, aiming to provide in-depth insights into a real-world phenomenon (Yin, 2009). Case studies are useful to analyse "how" questions like those formulated for this research, which seek to uncover and understand how discourses are articulated, practices are performed, and connections and conflicts emerge between discourses and practices in this corridor case. Furthermore, case studies are useful to examine phenomena within contexts where the boundaries between both are not clearly defined (Yin, 2009). Given the potential interconnectedness of corridor discourses and practices in the Costa Rican corridor arena and beyond, the case study approach is appropriate.

Study Area Description

The Alexander Skutch corridor was selected based on its relevance as an example site to explore the vision and execution of Costa Rican biological corridor policy. The ASBC is a well-established corridor in the PNBC, with policy documents and studies indicating conservation, community, and development objectives, yet scarcely addressing the practical implementation of said objectives. Furthermore, the corridor was chosen based on the researcher's access to information and contacts in the region.

The ASBC is located in the South Pacific region of Costa Rica (see Figure 2), and forms part of the La Amistad Pacific Conservation Area (ACLA-P). The Chirripó National Park and Las Nubes Biological reserve located in the north and Los Cusingos Neotropical Bird Sanctuary in the south represent the principal protected areas of the corridor, through which the river Peñas Blancas flows. The unique longitudinal and altitudinal characteristics of the corridor represent a highland-lowland connection which make it an ecologically important space for endemic and migratory species and has been identified as an important refuge for future climate changes in the region (Acuña Prado et al., 2017; BID, 2015). Outside of its ecological diversity, the corridor is also home to eight rural communities, the principal of which are Santa Elena, Quizarrá, Montecarlo, San Ignacio, and San Francisco (Rapson et al., 2012). Communities settled to the area a century ago to develop the region agriculturally, and agriculture continues to represent a livelihood stronghold within the corridor (Acuña Prado et al., 2017).

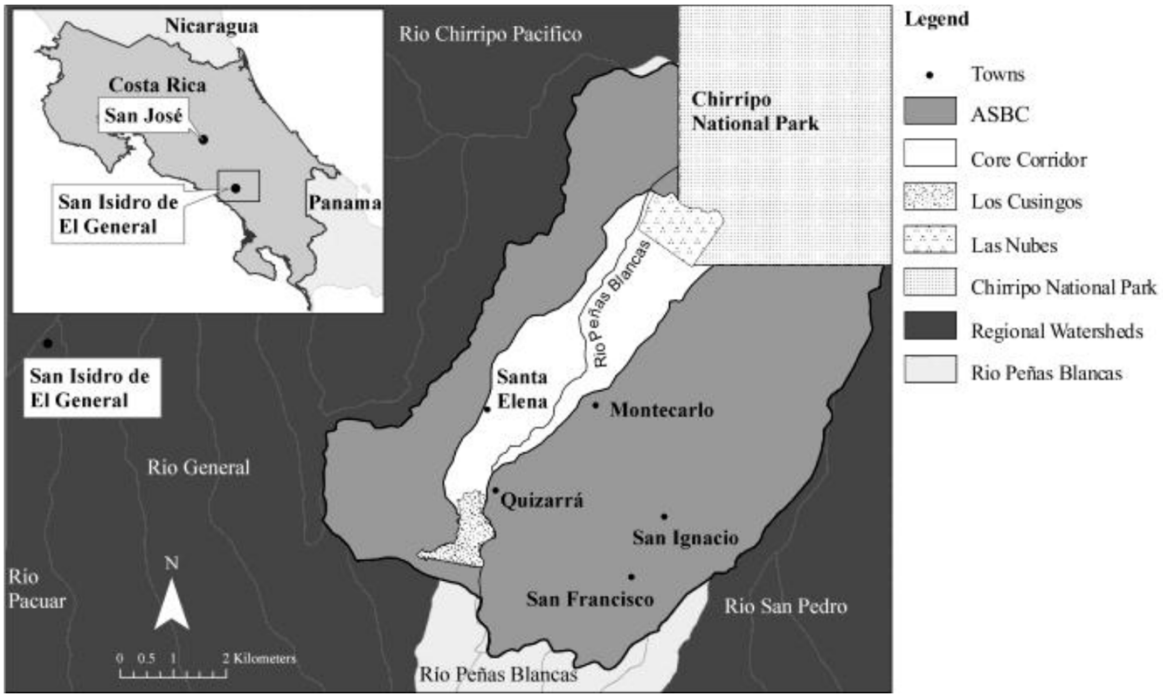


Figure 2. Location of the study area: The Alexander Skutch Biological Corridor (ASBC) in southern Costa Rica. Source: Rapson et al., 2012

The corridor was initially conceived by a partnership between York University of Toronto, Canada, the Tropical Science Centre/Centro Científico Tropical (TSC/CCT), and a regional farmers cooperative seeking to connect forest patches between the Los Cusingos and Las Nubes reserves and produce speciality coffee for Canadian markets (Daugherty, 2005). The ASBC formal designation was reached in 2006, integrated into Costa Rica's national corridor network (PNBC) as part of its national conservation policy seeking to deliver sustainable development and connectivity (MINAE, 2016). Through this initiative, a corridor local committee was introduced to deliver the policy in a decentralised participatory governance approach, which is composed of multiple stakeholders from several sectors of society including NGO, agriculture and state (Arauz-Beita & Arias-Navarro, 2016; SINAC, 2008). The production of management plans for the ASBC involved corridor communities through meetings and workshops with its local committee (GIZ representative, pers comm, 2021).

Satellite studies of the region show forest cover has been declining over the past 20 years due to the continued expansion of agriculture inside the corridor (Acuña Prado et al., 2017; Rapson et al., 2012). The most recent studies estimate 35% of the corridor remains with primary forest cover, with evidence of some forest regeneration and recovery between 2005 and 2016 (Acuña Prado et al., 2017). This data thus underlines contrasting forest cover trends in the corridor, and therefore that the corridor implementation has been somewhat limited. The corridor implementation is yet to be formally monitored.

3.1.2 An interpretative approach

This study uses qualitative, interpretative methods combining discourse and practice-based approaches to provide an in-depth understanding of the discourses and practices in the ASBC case. The discourse approach aims to uncover meanings contained within conversation or

texts to understand the individual realities people use to make sense of their world (Ritchie & Lewis, 2003); and practice-based research aims to uncover rich detail underlining social practices, based how actors talk about, interpret, and respond to the corridor (Arts et al., 2013). The interpretative perspective aligns with the ontological and epistemological assumptions of discourse and practice theories which understand the social world as constructed, and action and meaning to be inextricably entwined (Behagel, 2012). This approach aimed for an open, multiple, and heterogeneous account of the corridor case (Lincoln & Cannella, 2004), searching for multiple meanings and interpretations of the corridor policy as articulated by different stakeholders, and unexpected and surprising observations to be made in the performance of corridor practices (Arts., et al 2013).

In order to maintain openness, the steps of this research project followed a non-linear, iterative approach, (Yanow, 2006). The researcher first became familiarised with the topic by engaging in biological corridor debates in Latin America, Costa Rica and the ASBC corridor case through the initial literature review and writing of the proposal. Here, the formulation of the research objective and questions led to the choice of theories and methods to be used. Following the research proposal, the data collection was fine-tuned as it progressed, through continued reflection on data as it was collected, note-taking, continued immersion and reading on the topic. For example, interview questions were fine-tuned, and the document selection was restricted to include the most relevant information which emerged in relation to the research question. For the data analysis, the researcher was deductively guided by the conceptual model but retained openness through inductive observations noted in memos throughout, allowing unexpected patterns to emerge up until the final writing stages (Ritchie & Lewis, 2003).

3.2 Data Collection

The totality of all the data collected for this research project, also known as data corpus, combined researcher-generated sources with already existing sources (Rapley, 2018). The data corpus was chiefly comprised of textual materials, therefore appropriate for discourse analysis, but also the practice-based approach taken in this study which conceptualises discourse as a practice through articulation and performativity. The texts were comprised of transcriptions from 18 in-depth online interviews with representatives from state and state-affiliated, academic, NGO and community corridor stakeholder groups, and a selection of policy-related documents which elucidated the discourses and practices associated with the ASBC policy. These were collected between June-October 2022. The sources were triangulated throughout the numerous data collection and analysis phases for validity.

3.2.1 Secondary data: selection and identification of stakeholders and documents

The aim of the document selection was to collect textual sources containing information on the vision and execution (discourses and practices) of the ASBC case. These were reviewed and collected in three phases: first for a general background review of the case, second to identify key stakeholder groups, and third to identify key documents for further analysis. The first phase was designed to provide a general contextual review and refine the research, the latter two to provide the base for further analysis once the fine-tuned parameters were established.

Phase I. Initial background exploration

During the initial, explorative phase, the search terms "biological corridors costa rica" "alexander skutch biological corridor" "corridor implementation costa rica" (and Spanish equivalents) were used on Google and Google Scholar to find relevant documents. The collection was made up of academic and grey literature including previous research, policy frameworks, national legislation, technical and government reports, management plans, online articles, and website content related to Costa Rican biological corridor policy and the ASBC. The documents were reviewed, collected, and organized in a spreadsheet recording the author, date of publishing, and content. Notes were made throughout initial scan to "build a picture of the corridor case" (Anyango van Zwieten, pers comm, 2022). Here, information about the history and establishment, management structure, corridor communities, livelihood activities and forest cover trends of the ASBC were collected and synthesized. The initial scan informed the identification of three key time periods in the corridor's implementation history: i) the pre-designation era (1999-2005), ii) the post-designation development era (2006-2018); and iii) the current management plan era (2018-present). This phase also informed the drafting of interview questions.

Phase II. Identification of key stakeholders

The main stakeholders influencing and operating in the corridor were identified from the initial document scan. These were classified into four key groups relevant for the current management phase (2018-present), which were 1) state and state-affiliated; 2) NGO; 3) academia; and 4) local communities. Where possible, contact information was collected for interview representatives of each group.

Phase IIII. Focused document selection for further analysis.

A total of 15 documents were retained from the initial document selection for further thematic analysis (see Appendix B). This selection followed the following criteria: documents specific to the ASBC in the current management period (2018-present), produced by a relevant stakeholder group or representative, and containing information relevant for the research questions. For RQ1, where documents contained articulations of the corridor's purpose (this included descriptions and explanations of the corridor, its objectives and associated interest values), and for RQ2, where documents revealed performances of the corridor (this included descriptions and explanations of activities, processes occurring in the corridor and associated impacts, material and non-material). The selection was narrowed down to the current management period in order to use data most relevant for the next management cycle and given the timeframe for analysis. The document selection was completed after reaching data saturation for each stakeholder group, where no new information emerged from the document search and scan. Of the fifteen documents, eight were authored by academic stakeholders, five by state and state-affiliated stakeholder groups, four by NGOs and one by community stakeholder groups, two of which were co-authored between academic, state and NGO groups. It should be noted that the search yielded limited texts authored by community-led groups, contrasting with numerous and detailed texts authored by the academic institutions and state bodies, notably the University of York and SINAC/PNBC, respectively. Chapter VIII discusses suggested methods to address this limitation.

3.2.2 Primary data: semi-structured interviews

Researcher generated data came from 18 semi-structured online interviews conducted between July-October 2021 with participants from the four key stakeholder groups, aiming for a balanced number of respondents for each stakeholder group engaged in the corridor policy discourse and practices (adopted from Patel, 2021).

Table 1 shows the final interview participant list, with representatives for the four broad stakeholder groups, which included three state officials and a development agency representative (State and state-affiliated group), a conservation NGO representative, (NGO group), previous corridor researchers and academics (Academia group), smallholder farmers and other community members (Community group). The asterisk marks actor involvement in formal management processes through authorship of SINAC's 2018 management plan (a key document identified in phase I of the document selection) or participation in the corridor local committee.

Table 1. List of interview participants (n=18), with their respective affiliations and stakeholder group.
* Marks 2018 management plan authorship.

	Interview participant identifier	Organisational Affiliations	Resident
I) State and state-affiliated			
	MINAE representative	MINAE*	n/a
	PNCB representative	PNBC	n/a
	GIZ representative	GIZ*	n/a
II) Conservation NGO			
	CCT representative	CCT, Los Cusingos reserve	Quizarrá
III) Academia			
	MSc Researcher	York University; specialisation forest ecology and management (present in field in 2021)	n/a
	PHD Researcher	York University; specialisation environment and society (present in field in 2018)	n/a
	MSc Researcher	York University; specialisation socio-environmental problems (present in field in 2018)	n/a
	UCR Researcher	Universidad Nacional York University (present in field in 2015)	n/a
IV) Community			
	Smallholder farmer (#1), tour guide	Local committee*; York University	Quizarrá
	Smallholder farmer (#2)	ASOCUENCA; (ex) Local committee	Santa Elena
	Smallholder farmer (#3)	ASOCUENCA	Quizarrá
	Artisan	Local committee*; ADI; AMUQ	Quizarrá
	Businessman	Local committee*	Santa Elena
	Sales agent	(ex)Local committee	Santa Elena
	Assistant, Las Nubes	Local committee*, York University	Santa Elena
	Shop assistant; student	none	Santa Elena
	Shop assistant; student	none	Santa Elena
	Teacher	none	Santa Elena

Purposive sampling is a method used to select participants based on a judgement of relevance for the research, in this case, representing the four key stakeholder groups identified for the ASBC in the current period. Snowball sampling is used to recruit new representatives based on the network of existing ones, a useful method when the population is largely unknown.

The purposive and snowball sampling methods are justified given that this case study was interested in targeting selected groups and aimed to be illustrative rather than representative or random (Noy, 2008; Valentine, 2005).

The initial interview list was made during the review of key documents and with consultation from a field advisor (Dr Felipe Montoya, Director of Las Nubes Research Centre), who provided contact details and additional suggestions for persons of interest to be approached for online interviews. Snowball sampling was used thereafter to expand the sample of interviews, recruiting new contacts by asking interviewees if they knew anyone willing and able to participate who was knowledgeable about the corridor (Noy, 2008). After the first month of interviews, the sample was lacking bottom-up voices, so the snowball sampling method was altered by asking participants if they knew any members of the community willing to talk who did *not* have any organisational affiliations, to try to capture alternative perspectives. Similar to the document sample, it was more challenging to find bottom-up compared to state or committee representatives to interview, especially given the remote character and time limitations of the investigation.

The semi-structured online (video) interviews, and one structured question email interview were conducted by the author in Spanish, using Skype, Zoom and WhatsApp due to COVID-19 travel restrictions. Interviews lasted between 30-60 minutes. Respondents were informed beforehand about the research topic and data use, and conversations were recorded after consent was given by the interviewee. All interviews followed the same open-ended, semi-structured questions (see appendix D). The questions were formulated for interviewees to explain, justify and reflect on their personal positioning in terms of their actions and beliefs (Curato, 2012), devised alongside the conceptual framework, and with input from the appointed field expert to ensure questions were appropriate (i.e. respectful, understandable) for the respondents. Respondents were asked about their understanding and views on the corridor, its purpose and objectives, the activities occurring within the corridor, and how the corridor is performed in practice. Additional probing was used to steer the conversation so that they justified their views and positions, revealing rationalities, situated agencies and logics of practice. All interviews were transcribed in Spanish and direct quotes translated to English by the researcher.

3.3 Data Analysis

Interview transcripts and key documents were coded & analysed thematically using Atlas.ti to identify recurrent themes, ideas, and trends (Gee, 2014). Thematic analysis is useful to process wide-ranging data while staying focused on topics and can be used as a method to "reflect reality and unpick the surface of 'reality'"(Braun & Clarke, 2006). In line with the discourse and practice-based approaches of the study, the principal units of analysis were meaning and activity.

The data analysis followed multiple stages in which texts were examined in several rounds, thus reducing the chances of biased selection by the researcher and capturing the full richness of written and spoken accounts. These rounds integrated a search for semantic themes including descriptions, explicit and surface level meanings, and latent themes based on

interpretations which theorised the significance of patterns (Braun & Clarke, 2006). The phases of analysis are as follows:

Phase I. Familiarise with data
The researcher became immersed with the data through the transcription of interviews, and through reading and re-reading key documents and interviews. Memos were written throughout about what the data contained and what was interesting about it, and an initial list of ideas for possible codes was created.

Phase II. Generate initial codes
Line-by-line reading was guided by a combination of inductive and deductive coding. Deductive observations centred around the RQs and conceptual framework (See appendix D1 for sensitising concept coding handles). For each statement, the RQ which it applied to and relevant theoretical concept(s) were considered. The inductive interpretation centred around considering what was being said and by whom, what pattern statements could be a part of, and being open to emergent themes - letting the data speak for itself from the bottom up.

Phase III. Search for themes
Themes began to emerge – capturing important aspects of the data in relation to the research questions - such as broad conservation, community, development- related interest values emerging from articulations of corridor purpose (RQ1) and related activities, impacts and processes described in performances of corridor implementation (RQ2). Codes and sub-codes were generated and refined according to themes, following a defined criteria for the inductive codes in order to maintain consistency and validity (See appendix D2 for inductive coding criteria). In order to make sense of the wide-ranging objectives and activities described by stakeholders, summary tables were made collating themes into levels, and noting representative quotes and descriptive statistics to help find patterns (e.g. what were the main symbols evoked in corridor conceptualisations, what were the main objectives articulated for the corridor, what were the main activities performed, what were the main discourse-practice connections and disconnections). A number of these tables were included in the results chapter, others can be found in Appendix E.

Phase IV. Review themes and build thematic maps
Themes were refined and redefined by reviewing each, re-ordering and re-structuring codes to fit coherently and build thematic maps, first for RQ1&2 – summarising key aspects of corridor discourses and practices - and later for RQ3 which was built on finding links and incongruencies between the observations from the previous questions. (See appendix F for thematic maps). These maps shaped the interpretation and argumentation of the answers to each RQ, based on the inductive observations (related to conservation, community and development-related discourses and practices), and explained through the deductive sensitising concepts.

Phase V. Writing and completing conceptual model
The last phase of analysis took place during the writing of the results chapter, which through several drafts formed the shape of the final analytical narrative. This was structured following the RQs, guided by the five concepts of articulation of corridor purpose and stakeholder rationalities, performances, logics of practice and situated agencies. RQ3 which brought

together observations from the corridor policy discourses and practices, was structured following the discourses and practices associated to nature conservation, community wellbeing, and economic development.

3.4 Summary of study limitations

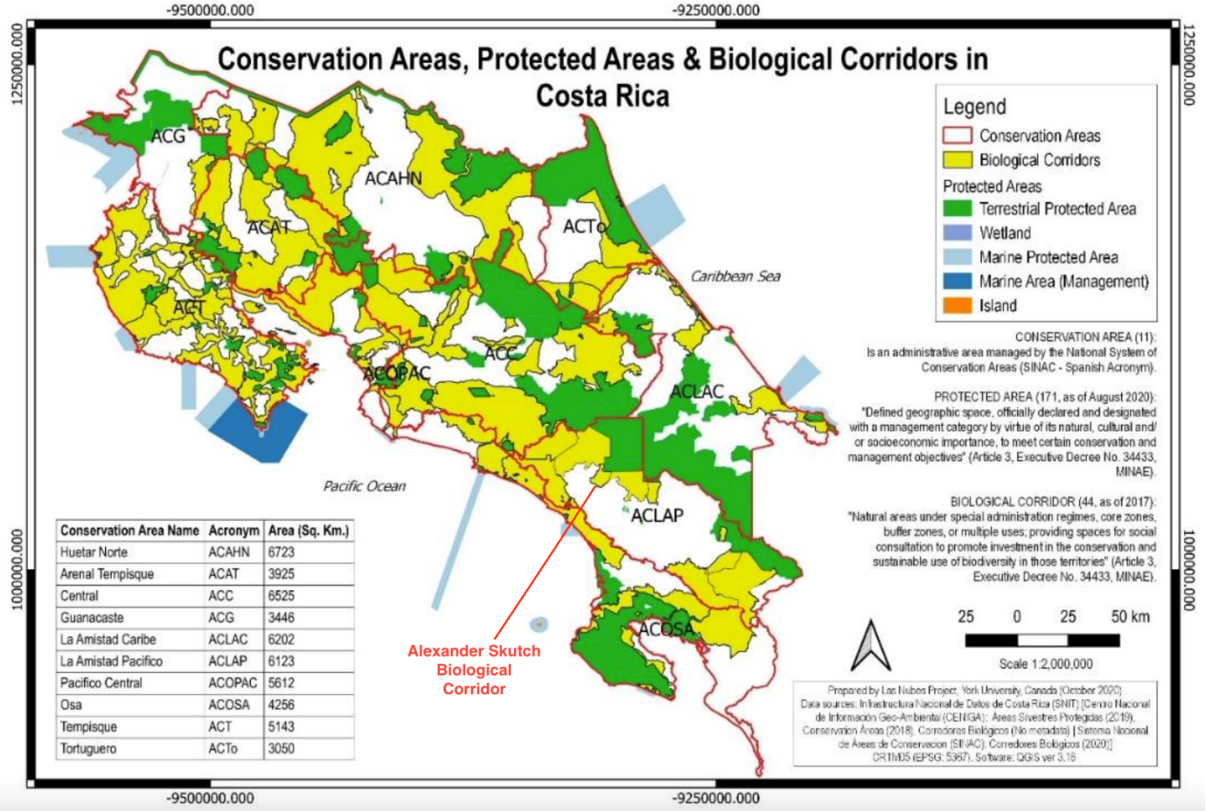
Due to the COVID-19 related travel restrictions at the time, data was based on online interviews and literature, so was principally textual. While the data was appropriate to address the research objective, the practice-based approach could have been enhanced through ethnographic methods of immersion which required travel. Furthermore, while data saturation was reached (little new significant information per interview and document), the data was likely biased through the document sample which was overwhelmingly authored by state and academic sectors, and through the interview respondent sample, where respondents were overwhelmingly associated with prominent organisations in the corridor, resulting in data skewed towards top-down voices. Finding bottom-up community voices was significantly more challenging, both in interviews and documents, due to the fact prominent groups tend to dominate policy discourses and have greater visibility in networks. In this corridor, participatory management processes involve community representatives through a local committee, countering this bias slightly as they therefore contribute to the discourse on paper. Given the data was collected remotely, it was difficult to overcome these biases as the researcher was not immersed in the field, restricting access to marginalised voices who, for example didn't have a WhatsApp account through which to communicate. Lastly, the qualitative and interpretative character of this thesis and may have led to some bias and errors in the data collection and analysis. Chapter VIII addresses these methodological limitations and proposes suggestions to overcome them.

CHAPTER IV. THE ALEXANDER SKUTCH BIOLOGICAL CORRIDOR: A REVIEW

This chapter aims to outline what is known to date about the Alexander Skutch Biological Corridor (ASBC) through a review of academic and grey literature, providing context to inform the answers to the research questions in chapters V-VII. The focus is on understanding the context of the corridor: its establishment history, ecological significance, management structure, community demographics and livelihood types and land use trends of the corridor. The section concludes with the presentation of stakeholder representatives and groups identified for the analysis of corridor discourses and practices.

4.1 Location, history & establishment

The Alexander Skutch Biological Corridor, known locally as Corredor Biológico Alexander Skutch (ASBC/COBAS), was officially established in 2006 (Canet-Desanti, 2005). The corridor, comprising 6.012 hectares, forms a part of the La Amistad Pacific Conservation Area (ACLA-P) located in the South Pacific region of Costa Rica (Figure 3). The Chirripó National Park and Las Nubes Biological reserve located in the north and Los Cusingos Neotropical Bird Sanctuary in the south represent the principal protected areas of the corridor, along with other less prominent private landholdings (SINAC & GIZ, 2018).



Conservation Area Name	Acronym	Area (Sq. Km.)
Huetar Norte	ACAHN	6723
Arenal Tempisque	ACAT	3925
Central	ACC	6525
Guanacaste	ACG	3446
La Amistad Caribe	ACLAC	6202
La Amistad Pacifico	ACLAP	6123
Pacifico Central	ACOPAC	5612
Osa	ACOSA	4256
Tempisque	ACT	5143
Tortuguero	ACTo	3050

Figure 3 Conservation Areas, Protected Areas and Biological Corridors in Costa Rica, with an arrow showing the location of Alexander Skutch Biological Corridor. Source: Martinez & Montoya-Greenheck 2021.

At the heart of the ASBC is the Peñas Blancas river, which flows from the Chirripó National Park located at approximately 1200-1500m, to the Los Cusingos Bird Sanctuary found at 700m above sea level (see Figure 4) (Daugherty, 2005). The unique longitudinal and altitudinal characteristics of the corridor represent a highland-lowland connection which make it an ecologically important space for endemic and migratory species, containing an estimated 414 bird and 243 mammal species, as well as beetle, butterfly, and wasp species, together with mosses, lichens, bromeliads, orchids and microorganisms (Acuña Prado et al., 2017). The presence of such unique species indicates the ecological importance of the corridor, underlining its relevance as a site for biodiversity conservation. Furthermore, the corridor has been identified as a site of significance to provide refuges where species have a higher likelihood of survival in the face of future climate changes in the region (BID et al., 2015).

4.2 Corridor management phases

Pre- designation: 1999- 2005

It is this diversity which initially attracted the interest of Dr Alexander Skutch, a renowned ornithologist who dedicated much of his career to studying the birds of the region, and whose legacy inspired the creation of the Los Cusingos and Las Nubes reserves, and later the name of the corridor (Arauz-Beita & Arias-Navarro, 2016).

The initial corridor initiative, which dates to 1999, was conceived through a partnership between the Faculty of Environmental Studies (FES) at York University in Toronto, and the Tropical Science Center, or Centro Científico Tropical in Spanish (CCT) (Canet-Desanti, 2005). These institutions focused on research and education building on the legacy of Alexander Skutch and his environmental conservation ideals. York University and the CCT own the las Nubes and Los Cusingos reserves, respectively.

The initial vision was comprised of several critical elements in the plan for the corridor's development – emphasizing 'the protection of its biological resources, and the sustainable development of its rural communities' (Daugherty, 2005, p3). The original *Los Cusingos-Las Nubes Corridor* partners involved a regional farmers cooperative (COOPEAGRI) and Canadian specialty coffee corporation named Timothy's World Coffee into its management (Daugherty, 2005), so the corridor had an economic focus. Its objectives were rooted in ideas of green consumerism and generating financial support to deliver 'sustainable rural development,' for example incentivizing farmers to adopt better practices through the sale of certified sustainable coffee to be marketed in Canada.

Post-designation: 2006-2017

Costa Rica's Ministry for Environment and Energy (MINAE), and its National System for Conservation Areas (SINAC, Spanish acronym) manage the countries protected areas, watersheds, forests and waterbodies (Martinez & Montoya-Greenheck, 2021). SINAC introduced the National Programme for Biological Corridors, known as the Programa Nacional Corredores Biológicos (PNCB), in 2006, following the Executive Decree N°33106- MINAE, which aims to connect protected areas through a network of corridors following a defined management framework.

The principal objective of the PNBC is stated as to

> *Provide connectivity between landscapes, ecosystems and habitats, natural or modified, to ensure the maintenance of biodiversity and ecological and evolutionary processes. They are made up of natural areas under special administration regimes, core zones, buffer zones, or multiple uses; providing spaces for social consultation to promote investment in the conservation and sustainable use of biodiversity in those territories"*
> – Article 3, Executive Decree N°34433-MINAE, PGR, 2008

Under this management, the ecological focus came in in addition to the economic focus. The PNBC initiative is tied to the broader Mesoamerican Biological Corridor (MBC) project which seeks to establish connectivity across Central America (Martinez & Montoya-Greenheck, 2021). In 2016, the PNBC network was said to comprise 33% of the Costa Rican territory (SINAC & GIZ, 2018), and is considered the most successful protected area network in Latin America (Elbers, 2011). Figure 4 below shows a graphic from the PNCB website showing its vision of a mixed-use corridor management, consisting of a matrix of strategies for 'connectivity, sustainable economic development, ecological restauration, and sustainable use of natural resources'.

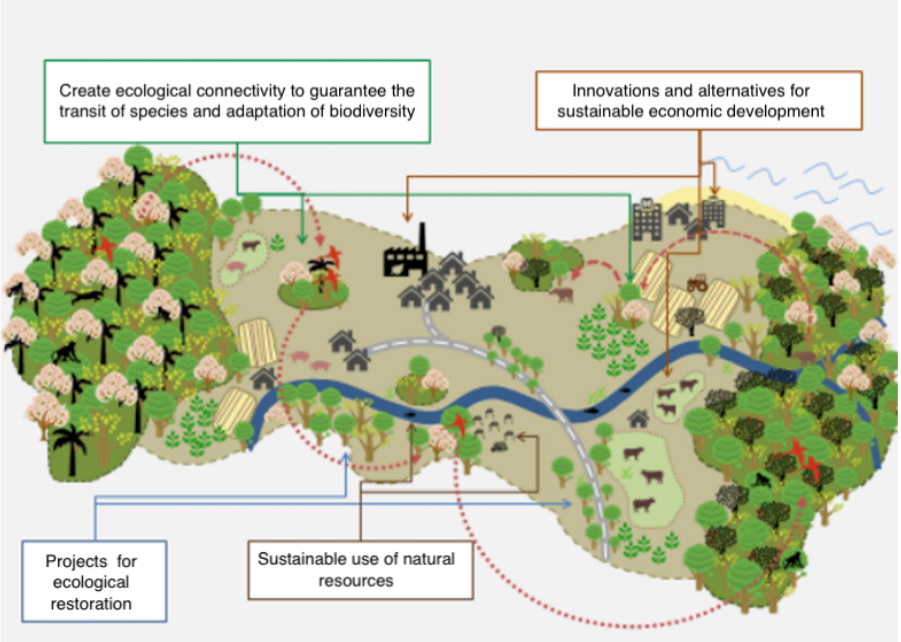


Figure 4 Graphic description of a National Biological Corridor Network (PNCB) corridor. Translated by author from Spanish. Source: www.biocorredores.org

In 2006, the ASBC was one of the first corridors to become officially designated as part of the PNBC, thanks in large part to the already existing scientific studies in the area attesting to its biodiversity significance, produced by York University and the CCT who were already active in the corridor (MINAE official, pers comm, 2021).

After its formal designation, the corridor became further consolidated through actions by the local committee, composed of a variety of stakeholders from different sectors of society. The committee was tasked with creating a decentralised organisational base to manage the corridor, focused on forming strategic alliances, producing technical documents (e.g. strategic

management plans) and engaging the communities to participate in the initiative (Arauz-Beita & Arias-Navarro, 2016).

2018-present: Current management plan

The most recent management and strategic plans for the ASBC (SINAC, 2018a;b) were produced by MINAE/SINAC in partnership with the German Corporation for International Cooperation GmbH (GIZ) as part of the countries National Biodiversity Strategy for 2016-2025 (GIZ, 2019). The vision of this strategy is 'to establish biological corridors as pillars for the conservation and sustainable use of biodiversity, for the benefit of society,' relying on participation from corridor local committees to coordinate different societal interests (GIZ, 2019, p1). The production of management plans for the ASBC involved corridor communities through meetings and workshops with its local committee (GIZ representative, pers comm, 2021).

4.3 Corridor communities, livelihood activities & key stakeholder groups

The first settlers to the corridor arrived in the area between 1930 and 1950, in a migration encouraged by the government which was pursuing an expansion of its coffee sector, representing one of the principal sources of GDP in Costa Rica at the time (Jara & González Calvo, 1987)**.** Today the corridor is home to eight rural communities: Quizarrá, Santa Elena, Montecarlo, San Francisco, San Ignacio, Santa Marta, Santa María and San Francisco (Arauz-Beita & Arias-Navarro, 2016), which continue to experience migrations to this day. The most recent census data indicates the districts in which the corridor is located, Cajon and General Viejo (Perez Zeledon), have experienced demographic increase of 34% between the years 2000-2011, estimating the corridor population at just over 3000 inhabitants, a figure which has likely gone up in the last decade (Acuña Prado et al., 2017; INEC, 2011). Approximately 60% of the population is aged 30 years and under, indicating a youthful population. Migration into the corridor has been cause for increased urbanisation, which has been estimated to cover 15% of the area (Canet-Desanti, 2005).

The legacy of the peasant migration of the 50s is still felt today, with the principal activities in the corridor centred around agriculture, particularly coffee, sugarcane, tubers, livestock and small scale 'rural' tourism (Arauz-Beita & Arias-Navarro, 2016; Ortiz Imlach & Montoya Greenheck, 2014). However, coffee production has recently experienced declines, being replaced by sugarcane and more recently pineapple production - more profitable alternatives to coffee – characterised by more resource-intensive farming style and representing a greater threat to forests and biodiversity in the region. These shifts have reportedly been particularly felt in the communities of Santa Elena and Quizarrá (Acuña et al., 2017).

There are numerous community-led groups operating in the corridor, representing several civil society interests. Based on the literature review and key documents identified for analysis (see appendix B), four principal stakeholder groups of influence were identified for the current management period (2018-present). These were the following: i) state-and state affiliated, ii) conservation NGO, iii) academia, and iv) local community. Figure 5 on the continuing page shows a stakeholder map of the principal actors of influence in the ASBC, representing each of the four groups identified, marked in bold font where representatives were interviewed.

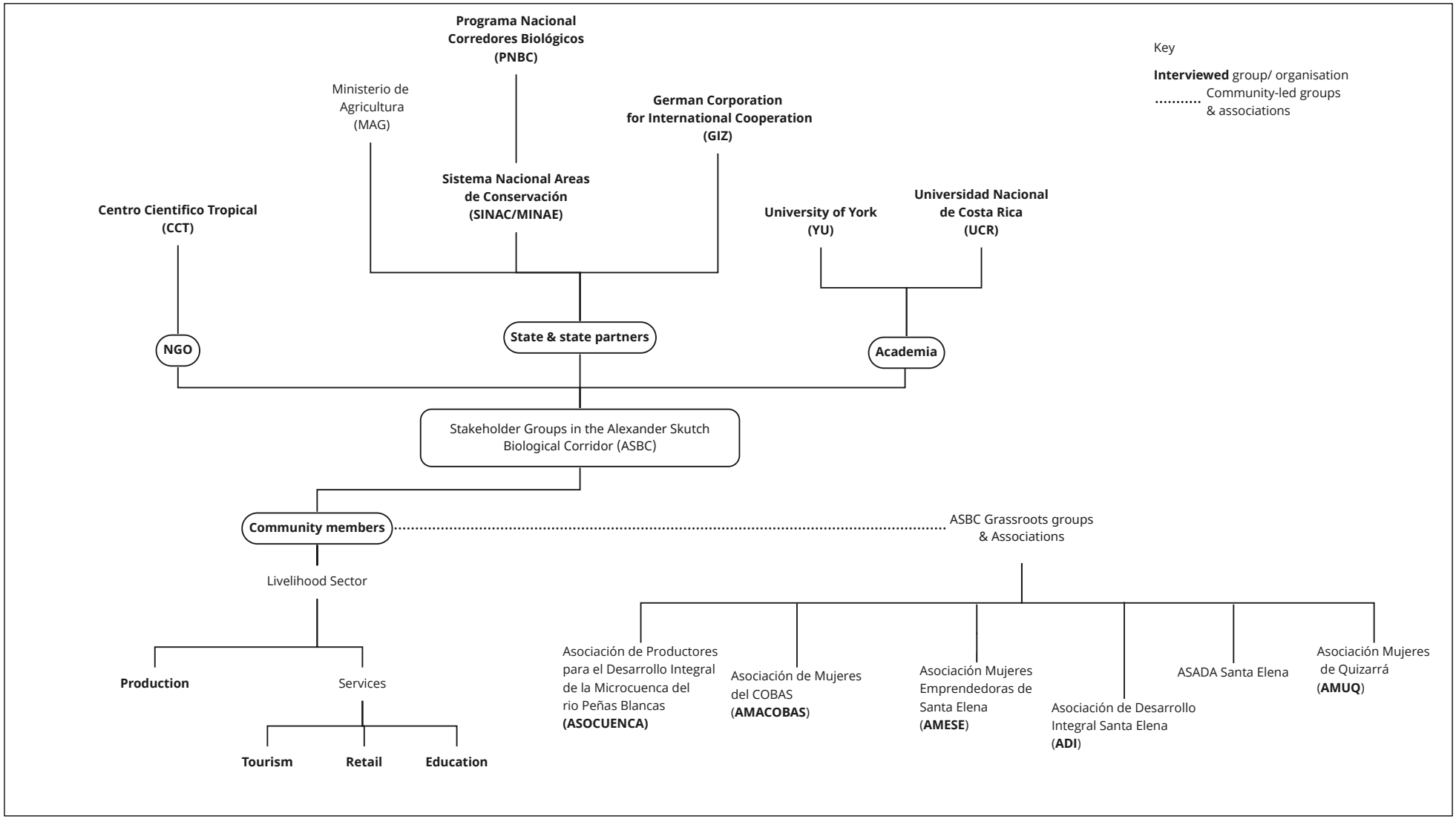


Figure 5. Map of key stakeholder groups of influence in the Alexander Skutch Biological Corridor (ASBC) identified for the period of 2018-present. Source: author.

The following principal groups were identified as active in the ASBC local committee: AMACOBAS (Spanish acronym for The Association of Active Women in the Alexander Skutch Biological Corridor) - a group of around 50 women founded in 2012 in Santa Elena whose mission is to include peasant women in agricultural and artisanal activities for their livelihoods (REDD, 2019); ASOCUENCA (Spanish acronym for Producer Association for the Development of the Peñas Blancas Microbasin) - a small farmer organisation preoccupied with protecting water sources; ADI (Acronym Association for Integral Development in Santa Elena), AMUQ (Acronym Association for Women of Quizarrá), and the local ASADA, which is an association preoccupied with the regions aqueduct and sewage systems. Survey data from Acuña et al 2017 showed just 16% of the corridor population were involved in community-led initiatives.

4.4 Forest cover trends

The corridor has been a site of important land use change over the past two decades. The territory primarily consists of forest patches, agricultural fields and pastures, and degraded lands (Rapson, 2008). An assessment of forest cover trends from 1998-2008 showed forest cover decreased by 19%, largely due to the expansion of pineapple farms and conversion of coffee plantations into pastureland (Rapson et al., 2012). The same study showed that agricultural activities had led to a loss of over 100ha of primary lowland forest (Rapson et al., 2012). These changes occurred in the midst of the corridor's initial conception in 1999 and formal designation and recognition by MINAE/SINAC in 2006.

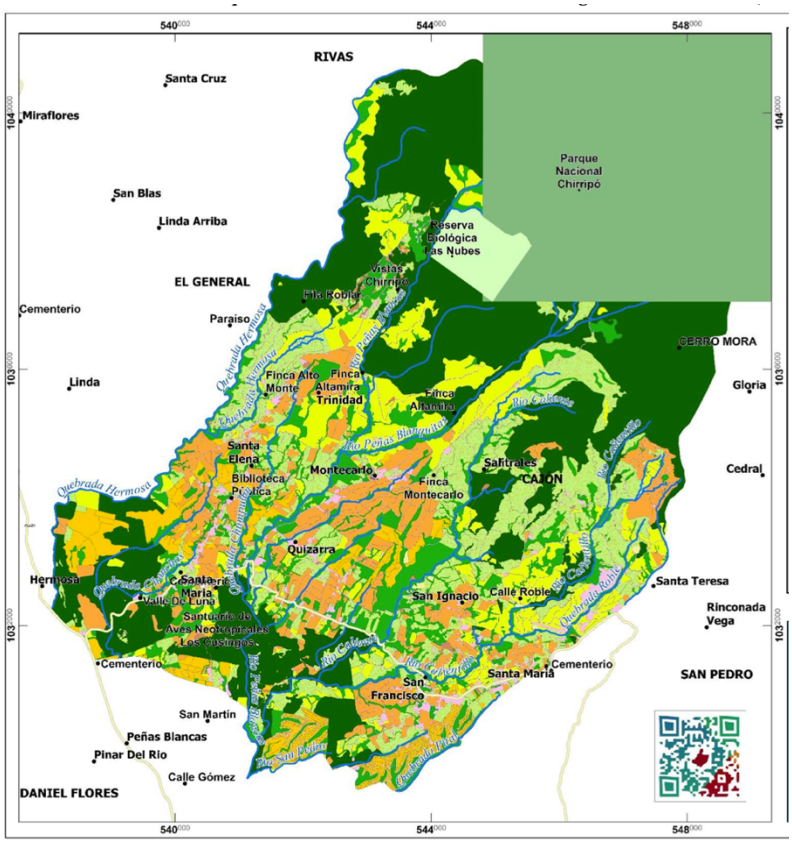


Figure 6. The most recent map of land use for the ASBC, generated using satellite imagery dated 2016. Land covered by forest represented in dark and light green, cultivated land in dark and light orange, pastureland in yellow, and infrastructure in pink. From Acuña Prado et al., 2017.

The most recent analyses estimate ‘dense’ or primary forests now represent 35% of the corridor territory, a 2016 satellite imagery land use map shown in Figure 6 (Acuña Prado et al., 2017). This study’s analysis showed a mosaic of land use in the corridor characterized by pasturelands and coffee farms located mainly in the central and southern regions of the corridor, representing 12.4% and 11.3% of the territory respectively. While much of the corridor is comprised of land used for agriculture, trends indicated dense forest fragment size and frequency had increased by 5.6% between 2005-2016, indicating some regeneration and recovery of forest cover in more recent years (Acuña Prado et al., 2017). Despite this, the expansion of permanent and semi-permanent land was shown to continue, most likely related to pineapple and sugarcane plantations and livestock rearing

CHAPTER V. THE PURPOSE OF THE ASBC: THE POLICY ARTICULATED

The following three chapters present the analytical findings of the case study, following the three sub-research questions presented in Chapter III. This chapter presents the findings for the first research question 1) *How the purpose of the ASBC was articulated in the discourses of policy stakeholders* by presenting the ways in which the purpose of policy was articulated by different policy stakeholders in the interviews and documents analysed. This analysis focused on uncovering and understanding the ways in which the corridor was conceptualised, and its objectives were stated – based on expressions of the corridor's meaning (what the corridor *is*) and purpose (what the corridor is *for*), respectively; and the interest values which emerged from the discourse of the policy.

The chapter is structured as follows. Firstly, the diversity of corridor conceptualisations is presented, revealing that the corridor's meaning was not clearly defined by the corridor's inhabitants – but was embedded with place-based elements and values which shaped its meaning. Expressions of corridor conceptualisations were often composed of explanations of what the corridor was *for* rather than what it *was.* The corridor was also revealed to be confused by some inhabitants as a group. In contrast, state and affiliated statements showed clearer definitions of the corridor as a concept, using technical and repetitive language typical of policy documents. Despite the diversity of conceptualisations, the corridor was broadly understood as a territory with the principal purpose of nature conservation.

Secondly, the diversity of corridor objectives is explored, which were categorised under the general purposes of *nature conservation*, *economic development*, and *community wellbeing and inclusion* based on inductively created criteria. In all stakeholder groups, nature conservation emerged as the principal purpose of the corridor, frequently articulated as its primary objective. Objectives linked to economic development and community wellbeing were also articulated by all stakeholder groups as central to the vision of the corridor. The varied articulation of objectives reflected a variety of stakeholder positions and interests – shown through the concept of stakeholder rationalities – and experiences and realities – shown through the concept of logics of practice. Academic stakeholders who had studied the corridor expressed doubt, or lack of understanding, over what the specific objectives were, in contrast to stakeholders involved in formal management processes who expressed them confidently; and several community members re-articulated the objectives as related to their individual livelihoods.

Lastly, the chapter brings together the findings to conclude that despite the diversity of understandings of the corridor as a concept and its objectives, the win-win-win discourse for conservation, development and community benefits of the corridor prevailed as dominant.

5.1. Varied and vague corridor conceptualisations

Diverse corridor conceptualisations showed a diversity of meanings ascribed to the corridor by policy stakeholders. On one hand, The Ministry of Agriculture and Energy (MINAE) offered the following legal description of a biological corridor -

*A biological corridor is a continental, marine-coastal, or insular **territory**, whose primary **purpose** is to provide connectivity between protected wild areas; as well as between landscapes, ecosystems, and natural or modified habitats (rural or urban), to ensure the maintenance of biodiversity and ecological and evolutionary processes. This is to be achieved by providing spaces for social agreement to promote investment in the conservation and sustainable use of biodiversity in those spaces*

– Article No. 4 of Executive Decree No. 40043- MINAE-2017

Thus articulating the concept of a corridor as a territory with the principal purpose of providing connectivity and ensuring the maintenance of biodiversity, through a strategy based on social collaboration, investment and sustainable use to achieve this goal. This conceptualisation was mirrored in statements from key policy documents analysed, which often directly inserted the legal quote into their texts, and from state-affiliated interviewees, who directly referenced Article No. 4 or offered legal descriptions containing similar elements:

"A geographic space where everything is articulated, containing all of the elements of sustainable development: conservation, production and economy"

– PNBC representative

In contrast, corridor conceptualisations in interviews across other stakeholder groups revealed varied and sometimes vague articulations of its purpose. Interview statements on conceptualisations by group are presented in Table 2, with columns signalling key patterns. The first column denotes the understanding of the corridor as a territory, and the second, as a strategy. The purpose of the strategy was articulated as *for* either nature conservation, economic development, or communities (denoted as N, D, and/or C respectively), or any combination of each, through which it emerged the purpose was articulated predominantly for nature conservation first, followed by economic development and communities. Statements were also often characterised by descriptions of objects and elements contained by the corridor, which were shown to be predominantly natural.

Table 2. **ASBC conceptualisation statements by stakeholders.** Conceptualisations are defined as descriptions or explanations of the biological corridor. Crosses indicate conceptualisation as a territory and/or strategy. Statements indicating purpose divided as for nature conservation (N), economic development (D), and communities (C). n/a indicates stakeholder made no statement on conceptualisation. Text in bold highlights keywords.

Stakeholder	Statement	Territory	Strategy	Purpose	Description
Sector: State & state affiliated					
PNBC representative	"Firstly, a corridor must have a strong **private property** component. Secondly, it must have a **production** component – not just conservation. Thirdly, you must have **actor participation**. If you don't have participation, you don't have a corridor" "Participative **conservation strategy**" "A **geographic space** where everything is articulated, containing all of the elements of sustainable development: conservation, production and economy" "**Not everyone knows** what a biological corridor is"	**x**	**x**	**N, D, C**	n/a
MINAE representative	"Biological corridors are sold as an alternative **way of co-managing a territory** with different interests"	**x**	**x**	**N, D, C**	Contains different interests
GIZ representative	The ASBC is a biological corridor of rural character in the southern zone of Costa Rica, officialised by the PNBC in 2006	**x**			n/a
Sector: NGO					
CCT representative	"It's **an evergreen forest**, (…) very rich in species"	x			A forest;

					Rich in species
Sector: Academia					
UCR researcher	n/a				
U York researcher	"a corridor is a very generalised environmental **project**" "the difference between what is and isn't a corridor is **difficult to distinguish**. It's not like a country with borders" "Inside the corridor there were more references to the environment than outside"		**x**		References to the environment
York researcher	n/a				
U York researcher	"**an area** where they try to prioritise the conservation of natural resources in a pair of important reserves, where we they to achieve connectivity between ecologically important areas and at the same time look for economic incentives for the inhabitants to benefit from conservation"	**x**	**x**	**N, D, C**	Ecologically important
Sector: Community					
Smallholder farmer	"a corridor that is complete (…) has all of its **areas of protection**, where people are **conserving**, are **working**, and are receiving **more benefits**. Let's say that one could say their life has… improved" "In the corridor there are many generalisations, many projects, many things…"	**x**	**x**	**N, D, C**	Areas of protection
Smallholder farmer	"…a transect through which birds and animals can cross. A national park is just trees - here you can have crops" "One must realise, deeply, how a corridor is. I am here, I have mountains, coffee plantation, cattle"	**x**		**N, D**	Transect; animals, birds; Mountain Coffee plantations Cattle
Smallholder farmer	"We are in **a beautiful place**. It's big, the corridor. What's beautiful is that everything that we are doing is for the good of nature" "COBAS is a new group, they haven't been able to meet recently"	**x**			A big, beautiful place
Artisan	"it is **the lungs of all of these communities**. It is part of their life, because we have the Peñas Blancas river basin at its heart. (…) So the biological corridor **is life**, its to breathe pure air constantly." "the corridor **gets confused with some groups**. People get asked, 'what is the ASBC to you?' and they reply – 'it's this or that group.' Sometimes people don't feel identified with the corridor"			**C**	Peñas Blancas river; 'Life'
Businessman	"This **is life** – we need water and air. And here we have that in the ASBC, so I believe that that is **an invaluable resource**" "The ASBC is seen as **something romantic**" "Biological corridor, **a nature sanctuary**"	x		**N**	'Life'
Sales agent	"Reserve connectivity between los Cusingos and las Nubes" (n/a)			**N**	Los Cusingos and Las Nubes
Assistant for Las Nubes	"a biological corridor has to be **a place** where **the majority of population is conscious of looking after the environment**" "the corridor is **conformed of seven communities**"	x	**x**	**N**	Contains seven communities
Shop assistant & student	"it's **a tropical forest**, with many trees and plants, where it rains a lot, and thanks to that the ecosystem is very varied" "the corridor, if you look at a map, falls outside of Quizarra. The corridor is shared between the communities of Quizarra and Santa Elena" (confusing it with a private reserve)	x			A tropical forest, With many trees and plants
Teacher	"it's **a conservation entity**, above all preoccupied with **environmental wellbeing**. Apart from that I don't have much more information. I do understand that there are other organisations that are joined with the corridor." "The corridor is practically comprised of the Peñas Blancas river basin – and that zone is very protected" "…la zona de Los Cusingos (…) tiene parte del corredor"	x	**x**	**N**	Peñas Blancas river basin; Los cusingos reserve
Shop assistant & student	"I have always heard that it is a part of Santa Elena, that is more like mountain… well - with more mountain - because we are in the corridor and there are built houses and everything…"	x			Montaña* Houses
SUMMARY	***Territory:* >70%** ***Strategy:* >40%** ***Purpose: N* > C = D (50%>30%)**				**Natural elements**

* The word 'montaña' in Spanish literally translates to 'mountain' in English, however in certain context its meaning is more like 'wild land'

Thus, the data shows a broad agreement across statements in interviews and documents that the corridor represents a territory containing natural elements, and with a purpose predominantly focused on nature conservation.

However, differences between conceptualisation statements emerged beyond this general understanding of purpose, particularly between local inhabitant and state discourses from documents and interviews, revealing narratives indicative of sensory and emotional connections to the corridor from community members. The use of metaphors and vivid language through which locals expressed their understanding of the corridor can be seen in Table 2, and some illustrative examples shown below –

"One must realise – deeply - how a corridor is. I am here, I have mountains, coffee plantations, cattle" – Smallholder farmer (#3)
"The corridor is the lungs of all these communities – it is life" – Local artisan
"An evergreen forest (…) very rich in species" – CCT representative
"A nature sanctuary" – Local businessman
"A beautiful place" – Smallholder farmer (#2)

These statements can be understood through local's *logic of practice*, as there is a sense of experience palpable from these understandings. The use of descriptive, sensory, and emotional language was used to evoke a sense of fondness and appreciation for the environment, and of pride in belonging to the corridor. Many locals invoked natural elements and objects, making reference to the Peñas Blancas river, the 'montaña' – which translates to mountain in English but is more similar to 'wilderness' in its meaning – and to animals and plants. The narratives used by locals to understand the corridor were therefore rich and diverse, evoking a strong sense of place which was absent from descriptions by state officials.

Finally, understandings of the corridor concept by community members sometimes showed a lack of clarity, to the point that it was even mistaken as a management entity or group:

"In the corridor there are many generalisations, many projects, many things"
– Smallholder farmer (#1)

"COBAS is a new group; they haven't been able to meet recently"
– Smallholder farmer (#2)

"The corridor gets confused with some groups. People get asked, 'what is the ASBC to you?' and they reply – 'it's this or that group.' Sometimes people don't feel identified with the corridor."
– Local artisan

These quotes illustrate confusion rooted in the multiplicity of meanings, activities, and groups active in the corridor. Despite some statements suggestive of confusion, and others indicating varied and vague understandings, a unifying thread emerged: the corridor was understood as a territory for the purpose of nature conservation.

5.2 Diverse objectives and multiple interests

In this section, the multiple articulations of corridor objectives are presented and explored, revealing that, while the principal purpose was understood as nature conservation, economic development and community wellbeing also emerged as key aspirations for the corridor – for locals and officials alike. First, the official objectives from the current management plan are explored, followed by understandings and experiences of objectives by the multiple stakeholder groups.

The official objectives of the corridor have evolved as the management changed through its timeline. Initially led by York University, the CCT and its farmer partners, the management is currently led by SINAC, with participation from the GIZ and corridor local committee (see Chapter IV). The current Management Plan for the ASBC (SINAC/GIZ, 2018) is the most recent official document which states the following 'mission' and 'general objective' of the corridor:

> *To conserve the biodiversity and contribute to the improvement of the quality of life of the population of the Alexander Skutch Biological Corridor*
>
> *This biological corridor seeks to ensure connectivity between the Los Cusingos Wildlife Refuge, the Las Nubes Wildlife Refuge, and the Chirripó National Park; connected through the Peñas Blancas River, and hence the importance of this river as a "backbone" for the corridor.*
>
> – SINAC, 2018a, p23

The principal purpose is articulated as biodiversity conservation through connectivity and improving inhabitant quality of life. The Management Plan also sets forth corridor 'vision' and 'value' statements, which cover such topics as the re-establishment of connectivity, sustainable use and conservation of the river basin, fostering responsible soil use, economic activities to guarantee community wellbeing including sustainable agriculture and tourism, and the execution of a regulatory plan to manage the growing population of the corridor (SINAC/GIZ, 2018, p23). In its 'key strategies' for the corridor (reproduced below), the Management Plan organises the values expressed in the above statements into specific points which characterise the discourse of the policy:

> 1. *Catchment-friendly livestock strategy*
> 2. *Forest restoration of degraded areas along Peñas Blancas river basin*
> 3. *Regeneration of trees critical to the feeding and refuge of birds endemic to the region.*
> 4. *Design of a tourist route to encourage sustainable ventures*
> 5. *Strengthening of the local committee*
> 6. *Preparation for entry into the Brunca wholesale market*
> 7. *Establishment of an orchid nursery-genetic bank*
> 8. *Implementation of handling protocol for research and tourism visits*
>
> – SINAC, 2018a, p24-35

Due to the wide range of objectives that emerged from interviews, the above-listed specific points were categorised by this research into three core pillars: nature conservation; economic development; and community inclusion and wellbeing. The criteria used for this

categorisation may be consulted in Appendix D2. Table 3 summarises the numerous objectives stated by different stakeholders and key patterns which emerged, showing that sometimes respondents were unsure about what the objectives were (denoted as 'expressions of doubt'); and many respondents appealed to a win-win-win discourse in which the objectives articulated fell into all three of the categories.

Table 3. ASBC objectives as articulated in stakeholder interviews (n=18), classified by purpose category (Nature conservation, economic development, community wellbeing) Categories inductively created by researcher (See appendix D2 for criteria). Stakeholders represent four sectors (State & state affiliated, NGO, academia, community (farmer and non-farmer). Participants involved in the local committee are marked as [LC]participant. Column 'Expression of doubt' indicates when stakeholders explicitly expressed they were not sure or did not know what the corridor's objectives were; column 'win-win-win' when objectives represented could be classified into 'for' nature, development & community. (n/a indicates where the question was not asked). Proportions rounded to nearest five.

Stakeholder	Classification								
	Nature Conservation			Economic Development	Community wellbeing			Pattern	
	Nature conservation (*connectivity)	Scientific investigation	Environmental awareness	Economic development (P - production; T - tourism)	Ecosystem services	Quality of life	Community involvement	Expression of doubt	win-win-win (*sustainability)
State & state-affiliated									
PNBC representative	*			P	x	x	x		*
MINAE representative[LC]	x			P, T		x			x
GIZ representative[LC]	*	x		x	x	x	x		*
Sector: NGO									
CCT representative[LC]	x	x	x						
Sector: Academia									
UCR researcher, 2015				x		x		x	
PhD researcher, 2018	*		x			x	x	x	
MSc researcher, 2018	*			x				x	
MSc researcher, 2021	*			x		x		x	x
Sector: Community									
Smallholder farmer[LC]	*			P, T		x	x		*
Smallholder farmer	n/a			n/a			n/a		
Smallholder farmer	*			P		x	x		x
Artisan[LC]	x			x		x	x	x	*
Businessman[LC]	x		x	T		x			x
Sales agent			x	P					
Assistant for Las Nubes[LC]	x		x	P			x		x
Shop assistant & student	x			P		x		x	
Teacher	x					x			
Shop assistant & student	*							x	
Summary – proportion of responses	***80%***	*10%*	*20%*	***70%***	*10%*	***60%***	*40%*	*40%*	*40%*

5.2.1 Nature Conservation

Nature conservation was the most mentioned broad objective by almost all respondents (>80%), with connectivity explicitly mentioned by around half of interviewees – notably more so by academic and state-affiliated stakeholders than local community members. Amongst all state-affiliated stakeholders, connectivity was stated as the most important objective of the policy, mirroring the official articulation in the management plan (SINAC/GIZ, 2018a). Below, a number of statements articulating nature conservation as the primary objective are shown:

> *"The number one objective is connectivity, right? To connect protected areas"*
> – PNBC representative

> *"Specifically, to conserve nature to the maximum, and take care of the living inhabitants."*
> – Local businessman

> *"Most importantly, the corridor has to exist to protect that part of the ecosystem, to avoid too many animals going extinct"*
> – Local shopkeeper

> *"More than anything the corridor mission is preoccupied with environmental wellbeing"*
> – Local teacher

In the absence of the word 'connectivity,' frequently used words by locals were 'nature', 'protection', and mentions of natural elements such as flora and fauna, ecosystems, and landscape elements. Improving environmental awareness, consciousness and education were also mentioned specifically as objectives by several locals. Scientific investigation was barely mentioned as an objective – only by the CCT and GIZ representatives.

5.2.2 Economic Development

Objectives contributing to economic development followed closely behind those of nature conservation, also being mentioned by most respondents (>70%). Many emphasised the importance of development for communities, often detailing livelihoods such as agricultural production or tourism (particularly student and 'rural' tourism) which should benefit from the corridor:

> *"Development is important, because it is important for communities to also develop"*
> – Local artisan

> *"Many of us are artisans, so this was one of the things to gain from the corridor title. For us to have a little shop to sell our products or offer a cabin for lodging. And those of us that can produce, to do so but in an environmentally friendly way."*
> – Smallholder farmer (#3)

The articulation of objectives within the theme of 'economic development' used market and economic references such as income generation, economic incentives, investment, aid ("ayudas" in Spanish) and promotion of small business ventures as part of the narrative. The *rationality* shared by practically all stakeholders was that the development objective was an essential part of the corridor's conservation mission:

"Any organisation involved in conservation inside a corridor must have objectives oriented towards the concept of green economy, and nature-based solutions (…) communities must see a return on looking after the forest in which they are developing."
– UCR Researcher

Here, the importance of strategies based on 'green economies' for conservation was highlighted, as a means to motivate local communities' participation in the corridor mission. The rationality was therefore that development incentivises environmental stewardship.

5.2.3 Community wellbeing and inclusion

Objectives falling into the category of community inclusion were also commonly articulated, with over 60% of respondents mentioning this, particularly with reference to contributing to the improvement of quality of life for human inhabitants. The discourse across all groups implored that conservation for conservations sake is not enough, and that communities must be considered, as one local said

"To maintain a communion and a communication between the environment and the organisations, the people who live inside the corridor. Because it isn't just about protecting, looking after the trees, and the animals. There are human needs inside the corridor too,"
– Local artisan

Community members evoked more situated elements in the language – such as 'taking care of living inhabitants', 'addressing human needs' and 'living in a lovely, pleasant place' evoking a sense of place, in contrast to officials who described the objective of addressing community needs through a discourse of ecosystem services which provide community wellbeing. In this sense, articulations by locals could be understood more through their *logics of practice*, and articulations by officials through their *rationalities*.

5.2.4 Varied objectives and stakeholder interests

As shown, the articulation of objectives by different stakeholders demonstrated much diversity in the interest values expressed. This diversity showed different degrees of knowledge, understanding and experience related to the stakeholder's position in the corridor, through involvement in particular groups, or livelihoods.

For example, the clarity with which objectives were articulated was reflective of the stakeholder's involvement in management. The list of clearly stated objectives in the management plan were mirrored, or re-produced, in articulations of objectives by community members active in the local committee in terms of detail and references to strategies –

"The idea was to make production more sustainable, search for new markets, protect the river water"
– Smallholder farmer (#1)

"The Ministry of Agriculture – if I'm not mistaken – helped us obtain funding for farmers inside the corridor (…) to improve their agricultural practices and improve the river health"
– Assistant, Las Nubes

These articulations brought up specific goals set out in the official plan, such as obtaining funding, improving agricultural practices, and developing new markets, in some cases

specifically mentioning actors involved. In contrast, several statements made predominantly by academics explicitly expressed doubt in their knowledge of the corridor objectives:

> "It's difficult to understand what the objectives are. I should know them, because I must have read them like 500 times!"
> – MSc researcher (2021)

> "I'm more or less familiar with the objectives, or I can imagine them (…) but I couldn't tell you exactly what they are"
> – PhD researcher (2018)

> *"What can I say, I'm not sure…I have been in so many meetings - over so many years – been in so many workshops, strategic plans… that sometimes we have failed to meet all our goals"*
> – Smallholder farmer (#1)

As expressed by the smallholder farmer in his statement, this confusion may be a result of changing objectives through the timeline of the corridor. Some respondents simply did not know what the objectives were beyond vaguely 'nature conservation'.

Experiences, realities and interest values emerged from articulations which were related to stakeholder group and with their livelihoods and day-to-day activities. For example, a local businessman asserted the objective of the corridor was "*to promote and incentivise visits by tourists into the corridor"*; a local farmer talked about *"searching for aid"* and a CCT representative stated the objective as *"to continue his (Alexander Skutch's) mission – through investigation, citizen science and environmental education."* This is where the source of much of the diversity in objective articulation came from. Participants representing the state used language which mirrored the language used in official written documents, yet community members spoke with a language that was more situated in their experiences as corridor inhabitants, and more preoccupied with self-interest.

5.3 The dominant win-win-win discourse

This chapter answered the research question 1) *'How was the purpose of the ASBC articulated in the discourses of policy stakeholders?'* It showed a variety of articulations on the purpose of the ASBC, observed through the different statements on corridor conceptualisations and objectives, reflecting varied understandings, interpretations and interests amongst stakeholder groups and individuals. This was demonstrated in the varying instances of clarity, ambiguity and even doubt observed in articulations of objectives by different stakeholder groups and individuals. State-affiliated respondents re-articulated objectives mirroring those found in the most recent management plan, academics expressed doubt on what the official objectives were, and many locals expressed objectives which were related to their livelihoods and personal experiences and desires for the corridor. The arguments which emerged from corridor inhabitants were therefore more distinctly captured in their varied logics of practice, whereas consistent and strategic arguments made by state respondents embodied a distinct rationality external to the corridor. Despite the varied articulations of objectives across groups, a dominant win-win-win discourse clearly emerged where the purpose of the corridor was understood as for nature conservation, along with economic development and community inclusion and wellbeing.

CHAPTER VI. THE PRACTICE OF THE ASBC: THE POLICY PERFORMED

This chapter answers the second research question 2) *How was the practice of the ASBC performed by policy stakeholders?* by presenting the ways in which the practice of the policy was performed in the discourses of different stakeholders from the interviews and documents analysed. This analysis focused on uncovering and understanding the principal activities occurring in the corridor and the ways in which these were performed. Activities here are 'seen' or observed textually from these interviews and documents, where discourse is a performance. Performances are sensitised through the concepts of situated agency, logic of practice, and rationality.

The chapter is structured as follows. Firstly, the diversity of corridor practices reported are summarised and presented, broadly classified into activities in the themes of *nature conservation*, *economic development* and *community inclusion and participation*, representing the three pillars of the policy which emerged from the discourse in Chapter V. Next, in-depth observations of the performances of corridor practices are explored in detail, distinguishing between a) those which mirrored objectives articulated in the official management plan – which were reforestation along the Peñas Blancas river, transitions towards sustainable agriculture, the pursuit of a corridor-related tourism sector and participation in corridor management through the local committee; and b) those which emerged outside of officially articulated objectives but were performed as part of the policy anyway - which were criticisms of hunting, mentions of the need for improved waste management, environmental education and scientific investigation.

6.1 The broad diversity of corridor practices

Table 4 (overleaf) shows the diversity of corridor practices reported by stakeholders in interviews, summarised into categories for nature conservation, economic development, and community inclusion, which were separated based on criteria found in Appendix D3. It was observed that activities were generally more frequently reported amongst community than other stakeholder groups, which suggests these actors were most engaged with the performance of the corridor policy. It was also observed that the most frequently reported activities were related to the objectives articulated in the official management plan - such as reforestation, improved agricultural practices and the pursuit of a tourist sector- reflecting the influence of 'official' discourse on corridor practices. Contrasting this finding, it was also observed that discussions about improvements in waste management and reductions in hunting were absent from the state-affiliated and management plan articulated objectives yet emerged as a commonly discussed practice amongst community members; and practices related to scientific investigation and building environmental awareness were mainly reported by NGO, community-led and academic institutions with no involvement from the state.

Table 4. The diversity of ASBC activities reported by stakeholders in interviews (n=18), summarised by category (nature conservation, economic development, community inclusion and wellbeing). Categories inductively created by researcher (See appendix D3 for criteria). Stakeholders represent four sectors (State & state affiliated, NGO, academia, community (farmer and non-farmer). Participants who were involved in the local committee are marked as [LC]participant. **Blue** marks categories which were represented in objective articulations in the current Management Plan (SINAC, 2018a) Proportion summaries rounded up to nearest five.

Stakeholder	**Classification**									
	Nature Conservation					**Economic Development**		**Community Inclusion**		
	Sustainable agriculture	**Reforestation**	**Scientific investigation**	**Hunting**	**Waste management**	**Agricultural Production**	**Tourism**	**Participatory management**	**Capacity building**	**Environmental education**
Sector: State & state affiliated										
PNBC representative	x	x				x	x	x	x	
MINAE representative[LC]	x		x				x	x		
GIZ representative[LC]							x	x	x	
Sector: NGO										
CCT representative[LC]	x	x	x			x	x	x	x	x
Sector: Academia										
UCR researcher, 2015						x			x	
PhD researcher, 2018		x	x							x
MSc researcher, 2018						x	x	x		x
MSc researcher, 2021							x			
Sector: Community										
Smallholder farmer[LC]	x	x	x	x		x	x			
Smallholder farmer	x	x				x	x			
Smallholder farmer	x	x		x		x	x			
Artisan[LC]			x	x	x		x		x	x
Businessman[LC]	x				x	x	x	x		
Sales agent	x			x		x	x			
Assistant for Las Nubes[LC]	x	x	x					x		x
Shop assistant & student		x		x	x		x	x		x
Teacher							x			
Shop assistant & student	x	x			x		x			x
Proportion summary	*50%*	***50%***	*30%*	*30%*	*15%*	*50%*	***80%***	***40%***	*30%*	*30%*

6.2 Performances of official objectives

6.2.1 Planting and rewilding along the Peñas Blancas river: "it's already quite beautiful"

> *"Before there was very little reforestation. I remember, I would go up into the mountain and the river was visible – it was very uncovered. Now one goes up and you almost can't see it, the river is covered"* – Smallholder farmer (#2)

Reforestation was the most reported activity in the category of nature conservation – noted widely by community members and described in most detail by the farmers interviewed, showing through *situated agency* how their daily livelihoods made them more engaged and

knowledgeable in this practice. Descriptions of reforestation included planting trees and leaving land free of agriculture to rewild along the river connectivity route and on private land. It was mainly described by farmers within the context of shifting their agricultural practices but was also reportedly undertaken by the community group AMACOBAS. Below are some statements discussing reforestation practices:

> *I used to produce cane – not anymore. Now I have a little pepper, cocoa… some fruiting trees. It is something we have been working on – planting fruiting trees for the wild animals. At the edge of my property, I have a couple of ravines. We are leaving that to reforest – if God wishes. It is already quite beautiful" – Smallholder farmer (#2)*

> *"What I planted when I was young, I'm very happy because now you see all the animals. Now you see animals we didn't have before- from lizards to deer and pacas. We are working hard on this, but it's difficult. People don't understand. And I tell them, 'My grandchildren aren't going to get to see these animals! So let's look after them!'"* – Smallholder farmer (#2)

> *"I hope they eat the scraps – its food for the birds and animals. We are starting to change our mentalities"* – Smallholder farmer (#3)

Here, through the concept of *logic of practice*, the thinking which underlines farmers' reforestation practices is observed. These performances of reforestation involved a sensory appreciation of nature and wildlife and its beauty, and emotional attachment to it. In these statements, there is a sense of pride and joy at the result of their reforestation efforts, a sense of newfound appreciation for nature, and sense of urgency that the practice of conservation is important for future generations. However, in the words of these farmers, this 'mentality' or 'understanding' which motivates reforestation did not seem to be shared by everyone and was implored as necessary to change in order for the practice to become more widespread.

Contrasting with this 'sensory-emotional' motivation to reforest was a more 'rational-economic' one, presented in state and academic stakeholder discourses. The quote below shows a cynical outlook on locals' motivation to reforest, emphasising that while protecting animals may be a mentality found in other corridors, it was not in this one:

> *"The mentality isn't 'let's save the tapir' right? That doesn't happen here. Perhaps in other places, but not here"*
> – MINAE representative

This statement, and others which formed the 'rational-economic' discourse of reforestation, highlighted financial rewards, such as increased tourist visitation, PES schemes, or certification, are what truly motivate reforestation efforts. The connectivity route on which reforestation efforts are concentrated was therefore argued to exist not simply to create habitats for animals, but also to attract visitors to the area. Thus, two discourses co-existed: re-forestation for economy, which followed rational-economic logics, and reforestation for nature, following sensory-emotional logics.

6.2.2 Agricultural transitions: "we do worry - there isn't much help"

As outlined in Chapter IV, agriculture is historically important in the corridor as communities initially settled in the ASBC region to cultivate the land, and much of the population continues

to do so. Information from interviews and documents painted a picture of shifting agricultural practices in opposing directions: towards 'sustainable' forms of agriculture on one hand and towards intensive monocultures and land clearing on the other.

Transitioning towards more sustainable agricultural practices was discussed in most detail by farmers, similar to reforestation, and to a lesser extent by other community members and some state officials, overall representing an important part of discussions on corridor activity. Examples of these sustainable practices included crop diversification projects, for example an AMACOBAS shared greenhouse project producing lettuce, herbs, and other non-cash crops for local trade and consumption, and a PNUD 'productive landscapes' project, which promotes the cultivation of cocoa, curcuma and other crops to diversify farms. Another example was the MAG-funded water feeders which were installed on some locations to prevent erosion of the river water by livestock. Lastly, processing machines for cocoa and flour donated by the UN small donations programme were also discussed by several locals, which reportedly encourage cultivation of crops to diversify and add value to farm production. All of these examples of sustainable agricultural transitions were supported by external – predominantly international – aid programmes which apparently support these practices at least partly because they occur inside an officially recognised corridor. This was described by an NGO representative as the corridors support framework, or "marco de apoyo," which facilitates the corridors livelihood sustainability and conservation mission by supporting transitions towards improved agricultural practices.

However, conventional forms of agriculture were discussed frequently as something that continues normally in the corridor, which involve land clearing, cattle raising, monoculture production with the use of chemical pesticides, herbicides and fertilisers and burning crops. The most reported 'unsustainable' cultivations were pineapple and sugarcane, which have reportedly been overtaking the typical coffee plantations which previously characterised the cultivation landscape.

> *"One must understand that corridors have a lot of mixed land use. You have pineapple production, coffee production, and monocultures. It's not always what we want, but there's always going to be production there, right?"* – PNBC representative

The landscape is composed of a mixed-use matrix in which damaging practices for the environment occupy a considerable space (Acuña et al., 2017). Input-intensive monocultures and cattle ranches are known to be highly damaging to biodiversity and ecosystem health, and although not explicitly mentioned in any official document, this fact was explained by many locals whilst reflecting on these practices. From the statement above, it was observed officials also framed intensive agriculture as undesirable, but inevitable. Yet agricultural development of the land continues without any tangible resistance inside the corridor.

This apparently occurs for several reasons. Firstly, the only legal restrictions for land use in the corridor are those which apply to the river, which is protected up to 50m from its shores, according to the Forestry Law No 7575 (1996) (SINAC/GIZ, 2018b, p41) . Therefore, the corridor policy does not impose any restrictions on land use beyond the already existing national legislation. When reflecting on the accountability for this limitation, the PNBC representative claimed this issue should be resolved by the municipality and was beyond the

jurisdiction of the corridor's managing body. Here, a *logic of practice* is explained in which formal rules and structures do not do enough to protect the corridor from degradation.

Secondly, transitioning towards sustainable agricultural practices was described as resource intensive, and therefore costly. Farmers explained they require support from external aid organisations or the state – often referred to as "ayudas" (aid) – to improve their practices. For many, changing their practices was simply not an economically feasible option, despite desires to do so.

> *"It all sounds very nice – agroforestry – but we need some kind of aid, to maintain us until we reach production. Production (of coffee) is very costly, its hard work, and it's not profitable."* – Smallholder farmer (#2)

> *"These projects are there, we are working on them, and we'll see when we can get to work with them, so people start planting. Because we worry – the government support, in terms of agriculture – there isn't much help ('ayudas')"*
> – Smallholder farmer (#1)

Several locals also explained the expanding cattle sector as a reaction to the increasingly unprofitable coffee cultivation sector and indicated some areas in the corridor had experienced considerable land clearing as a result. As shown by the sensory-emotional motivations to reforest in the previous section, and in the first statement above "it all sounds very nice – agroforestry," these farmers understand the benefits of reforestation and sustainable modes of cultivation, yet they do not engage based on another *logic of practice*: that they cannot afford the change. Here, farmer's *situated agencies* capture how the choices available for farmers to act are largely limited by their finances and need to have profitable farms.

> *"You cannot tell a farmer to change their agricultural practices overnight - in essence their cultural structure - from one day to another"* – CCT representative

Whilst not made by a farmer, the statement made above by a conservation NGO employee highlights how 'cultural structures' cannot be changed overnight. Given what was observed so far motivates reforestation and sustainable agriculture transitions, the cultural structure referred to here could relate to any of the co-existing *logics of practice* presented so far: the formal rules which weren't prohibitive enough, rational-economic mentality through which productive practices continued, and the emotional-sensory one which guided practices to change somewhat, but overall did not prevail much over the rational economic logic.

6.2.3 Tourism: "it pays to conserve"

The most broadly discussed activities were those related to tourism, by almost all participants, in a *rationality* that framed it as a winning solution to deliver conservation and development objectives.

> *"A tourist will go to the Las Nubes reserve, and the Los Cusingos reserve, and along the way they might buy something in the local bread shop, and possibly will buy a private local tour – so in this way nature facilitates visitors leaving money in the corridor – put simply"* – MSc researcher (2021)

Reportedly introduced through the York University Campus at the Las Nubes reserve, the Canadian institution partnered with local families to provide homestays for visiting students, who pay local families in exchange for meals and lodging. Students of York take courses and conduct investigations related to conservation, the environment and sustainability which contribute to scientific research in the corridor. Visiting students pay for tours by local guides, purchase local artisanal products, and reportedly leave donations to improve community infrastructure, such as roads, schools, and a community hall. Other foreign organisations are reportedly involved in facilitating similar tourist ventures, for example through the Fondo Negocios Verdes funding scheme which encourages 'rural sustainable tourism' (GIZ representative, 2021). Such ventures were viewed in a positive light by all participants interviewed, expressing hopes for further development of tourism related ventures, such as construction projects for cabin lodges, tours, and visits to sites of interest such as farms, and sale of local artisanal products.

The discourse of tourism in the region was therefore that it contributes to the corridor mission as it represents an alternative, sustainable source of income which affords conservation practices to take place.

> *"The man that produces cane juice, who has a sugar mill, used to just sell cane juice. Now he sells the experience of going to see how it is produced. So now this man only uses half of his farmland for cultivation – and the rest is left for conservation"* – PNBC representative

> *"People start to understand that visitors and a beautiful environment, so this facilitates nature being taken care of. This is how some farms are transformed"* – Smallholder farmer (#1)

The argument, shared by locals, officials, the NGO, and academics alike, is that the development of tourism was positive as it reduces agricultural pressure on the environment, creates new livelihood opportunities, and simultaneously encourages better environmental stewardship through the incentive of attracting visitors who want to see a beautiful place (SINAC, 2018b, p 45). The possible environmental risks of an expansion of this sector were absent from the discourse. The use of language like 'eco-tourism' 'student-tourism' 'regenerative,' 'rural' encouraged the idea of its environmental sustainability. The possible social risks were also absent from the discourse, with one community member describing she enjoyed interacting with foreign students as it brought diversity to the corridor community. When asked if they perceived any risks of the development of tourism in the corridor, one local explained the common rationality –

> *"If it is developed in a controlled fashion, no. It is known the destruction is very minimal with these eco-tourism projects that go hand in hand with nature. Yes, there will be effects – but they will be very minimal. More than harm, I feel this can benefit the community" – Local teacher*

While the environmental and social risks of the development of tourism were absent from the discourse, there were concerns amongst some community members about the limited accessibility to this development opportunity, noting that some actors in the corridor are better positioned that others to have business in the tourism sector.

> *"There are tourist routes that are developed by particular organisations – and it is difficult to get into this group. So the tourists always go to the same places, and it's always the same people that*

benefit from this. What about the landowner who has less property – less land? What about the one who can barely make a sale in their shop?" – Local artisan

"I don't have my area of protection; I don't have my 'quebradita' (ravine) - there's nothing for me to benefit from. I have my house, my job – and that's it" – Local sales agent

Through *situated agency*, these statements illustrate differing access to resources and opportunities – mediated by connections to organisations or groups, or already existing wealth. For example, as pointed out by some locals, families connected to York University had the opportunity to offer their homestays and gain an income from tourism that other families did not. Similarly, a farmer with land or shopkeeper close to the route used by visitors may benefit from transforming their farm and sell a visitor experience or marketing artisanal products for tourists, whereas those further from the route will not have access to these benefits.

6.2.4 Participatory management: "much of the community isn't really involved"

The central site where participatory management occurred was at local committee meetings. Discussions about the local committee showed different perspectives on the degree of participation. Claims of equal representation and inclusivity by committee members were contrasted with claims of mistrust, lack of understanding regarding committee activities, and other reasons for absence by some locals, captured through different actors' *logics of practice* and *situated agencies*.

Committee activities were said to be centred around co-designing strategies for implementation of the corridor policy, raising and managing funds, and inviting more participants into the group. Together with SINAC and GIZ, the governments international development agency partner, the local committee participated in the 2018 Management Plan (SINAC, 20018a;b), representing the latest strategy for corridor implementation. As stated by a GIZ representative, this participatory process consisted of exploratory sessions with members of the local committee to understand their conservation priorities and suggestions for actions. As participating locals stated, the goal is of an open committee where anyone was invited to participate and contribute, and the various communities and interests were represented:

"The idea is that every community has a representative in the local committee." – Assistant, Las Nubes

"Any neighbour can come and say 'look, I think they should do this, or that'."– Local businessman

Membership was said to be open to anyone in the community, however, it was also stated by a committee member that the membership search focuses on international collaborations, and there were numerous local claims that in practice the committee was not very representative of the community:

"Much of the community isn't really involved in the corridor" – Local shop assistant

Local reports that the level of community participation was limited indicated the practices of the committee were therefore not always aligned with their discourses of participation.

Numerous contestations and references to problems in the committee emerged through the concept of *situated agency:* related to differential accessibility, benefit distribution, and influence of groups and interests in committee meetings.

> *"I have many small jobs – people who get involved, they take days off, they take mornings off – this I cannot do."* – Smallholder farmer (#3)

The issue of accessibility was expressed in the farmer's statement above, stating he would like to attend meetings but taking a day off work would be a loss. The statement illustrates this farmers' *situated agency* limited his ability to participate in corridor management for work reasons – not having enough time. When questioned about this limitation, a committee participant denounced such absences as selfish and careless, stating 'they don't want to sacrifice themselves' and so suggesting the accessibility issue is not fully recognised amongst the committee.

> *"I left because the money was wasted, and only some organisations were seeing the money."* – Sales agent

The statement above by a local who used to be an integral committee member shows scepticism towards it, a *logic of practice* acquired after becoming disillusioned with meetings. His claims were that the group only represented particular interests, the funds were mismanaged, and therefore the corridor only served to benefit a select few. The same respondent asserted that many people do not get involved in the committee – and by extension the corridor – as they do not receive 'direct benefits'. This *logic of practice* was mirrored broadly in statements among the community, including by members of the committee themselves:

> *"People think, 'what can I get from the GIZ, what can I get from the name 'biological corridor'"* – Assistant, Las Nubes

> *"I don't know the extent of the help ("ayudas") for a biological corridor, for this reason I would also like to be more involved"* – Smallholder farmer (#3)

These quotes demonstrate a *logic of practice* preoccupied with gaining direct financial benefits from the corridor, and perception that participation could be associated with receiving such benefits. As observed in statements related to transitioning toward agricultural practices, the idea – and perhaps even expectation – of external aid seemed to be linked to the corridor.

Lastly, influential stakeholders were reported by one participant who had been present in meetings to dominate discussions:

> *"When you start to have powerful actors – like universities or foundations – their objectives start to take priority, as they are seen as actors with more resources."* – MSc researcher (2018)

The statement alludes to York and the CCT, both prominent corridor organisations, having disproportionate influence over policy objectives thanks to their powerful position and resources. This suggests how management decisions, such as the prioritisation of objectives, may be dependent on the actors sitting at the table in a committee meeting, again linking to

the idea of different *situated agencies* leading to different degrees of participation in the corridor.

6.3 Performances beyond the management plan

6.3.1 Scientific investigation and monitoring: "projects don't come with a bag of money"

Discussions about scientific investigation and monitoring in the corridor were interestingly not as prominent in the discourse of the policy as the development of the tourist sector, or of improving agricultural practices. The official management plan mentioned establishing genetic orchid banks and improving species handling protocols as scientific objectives, but there were no mentions of these beyond the written document. For this reason, the performance of investigation and monitoring was understood to depart from the official plan.

Like farmers with reforestation and agricultural activity, locals associated with academic and NGO institutions were the most knowledgeable about scientific investigation and monitoring activities in the corridor. When these conservation-oriented practices were discussed, they were associated with York University, UCR and the CCT. Activities described specifically mentioned bird counts, vegetation surveys, and camera traps.

> *"Lately we have gotten some beautiful pictures – some great data – we've seen, for example jaguarundi, ocelots, tepezcuintles (pacas), which are meant to be in danger of extinction"*
> – Assistant, Las Nubes

As illustrated in the statement above by a York employee, enthusiastic descriptions of these practices came from locals or students associated to these organisations, who were most knowledgeable and pleased with scientific activities in the corridor. Statements on science and monitoring activities reflected the influence of the founding organisations of the corridor, and the legacy of the corridors founding father figure, Dr. Alexander Skutch.

In contrast to such organisations, the state's approach to monitoring and investigation in the corridor was observed to be much more hands off. The PNBC spokesperson admitted that there was no state structured monitoring system yet in the ASBC– or in any biological corridor – blaming internal conflicts within MINAE and a lack of funding, an argument reiterated by the MINAE official:

> *"There are many limitations in the implementation of a corridor, because projects don't come with a bag of money saying 'here, implement me!'"* – MINAE representative

The MINAE representative went a step further to say fundraising for these activities was "the corridor users' responsibility." In a similar vein, the PNBC spokesperson stated that monitoring inside the corridor is done by members of the corridor committee, *"in their own way."* The states approach was thus revealed to lean on non-state organisations and groups, such as York or the CCT, to undertake monitoring of the corridor's connectivity. According to state officials, the wealth of already existing investigation by York and the CCT on the corridor greatly facilitated the design of the 2018 Management Plan, and was something unique to this corridor which made it a model to follow. The state *rationality* for this hands-off approach to monitor the connectivity objective was thus revealed to be chiefly financial, but also that

it wasn't the states responsibility, principal arguments in Costa Rica's decentralised corridor model.

6.3.2 Hunting: "how can you accuse your cousin?"

Hunting activity emerged as a frequent topic of discussion in the corridor, despite its absence from the management plan. While some locals reported they stopped hunting after becoming more environmentally conscious and now denounce the practice, others continued to hunt, and it remains a widely discussed illegal activity which continues in the corridor. As one local illustrated, it is an activity undertaken by some, despite others' protests:

> *"There is a lot of hunting here. Hunters say, 'don't worry, there are many animals, why would we start to change for some animals anyway?' Well – knowing that these animals will slowly be lost. Knowing this will affect ecosystems, the environment, even ourselves. We won't have animals to show our children tomorrow"* – Local artisan

Here, separate *logics of practice* can be observed which prevent or inspire hunting behaviour. While some are concerned about the impacts on the environment and communities, in particular leaving a legacy for their children, others apparently continued to hunt with the belief that many animals remain, and their practices were therefore not problematic. One statement described how hunters set in their ways can be swayed to appreciate wildlife and change their practices through camera trap footage of charismatic species:

> *"The jaguarundi was spotted in a camera trap on farmland which belongs to the son of a man who has been a hunter all of his life"* – Assistant, Las Nubes

Explaining how the image of a jaguarundi inspired a hunter to appreciate and protect animals rather than hunting them. However, hunting was discussed as a difficult behaviour to change as it was so culturally engrained that people protected each other from the authorities rather than denounced each other, weakening anti-hunting enforcement efforts. As one local implored:

> *"How can you accuse you cousin? When it is known the authorities are around, you rather warn your cousin. Hunters aren't captured"* – Smallholder farmer (#1)

6.3.3 Waste management: "A culture that must change, little by little"

> *"A biological corridor should be a place where most of the population is conscious of looking after the environment, is conscious of the correct management required for rubbish – from recycling to not burning" – Local artisan*

Mentioned exclusively by members of the community, the issue of waste was discussed as a growing issue resulting from growing populations inside the corridor and a lack of infrastructure to collect it. Littering on the streets in villages inside the corridor was a common complaint from corridor inhabitants. Activities to target the issue, such as collection and recycling, were done by the community group AMACOBAS, representing a bottom-up performance of the corridor motivated through a *logic of practice* centred around

environmental consciousness and improving the living environment for communities. Under this logic, littering behaviour was condemned as irresponsible and a result of a culture that still needed to change:

> *"There are some people who aren't looking after the corridor. Some burn their rubbish; others don't separate rubbish and throw it on the street. So, we must involve people slowly. It's not easy. It's a culture that must change little by little"* – Local artisan

This statement by a local artisan uses the 'culture', as the CCT representative did when explaining unsustainable agricultural practices, as a *logic of practice* which prevents people from changing their actions to be more corridor-friendly, or for their practices to align to the environmental discourse of the corridor.

6.3.4 Capacity building for better practices: "We just try to help people solve problems"

State-affiliated and academic representatives described making resources and materials available to corridor communities to encourage engagement with the initiative. For example, the PNBC spokesperson described a 'nature-based solutions' tool which was available to corridor stakeholders, which guiding and recommending users on best practices without any impositions. In his words,

> *"This tool is not designed for us to arrive with a sledgehammer to order them to do this or that, but rather to approach them and give them options on how to improve certain situations. So we don't impose fines or sanctions – we just try to help people solve problems"*
> – PNBC representative

This statement mirrors prior statements by PNBC and MINAE representatives on scientific monitoring and investigation in section 6.3.3, with the *rationality* that responsibility and accountability for this was devolved to corridor users, framed in the discourse as giving freedom to the community. Furthermore, this rationality is comparable to the one used in the argument explaining regulations for river protection were the municipalities responsibility in section 6.2.2.

Another tool mentioned for capacity building was an online platform designed in a partnership between York University and UCR to facilitate connections amongst community members for economic activities in the region, following a rational-economic logic where building sustainable business partnerships is a goal of the corridor. This approach to capacity building, described discursively as to promote communities' problem-solving capacities, was not mentioned in practice by any community representatives.

6.3.5 Positive shifts in environmental consciousness: "If I take care of nature, my life will improve"

Mentioned more frequently and broadly than capacity building were talks, workshops and events which engaged and educated communities in the corridor on its environmental mission. These were organised by groups such as York University, the CCT and AMACOBAS. Several respondents mentioned 'EXPOCOBAS,' an annual festival celebrating the birthday of Alexander Skutch, organised by York University to raise awareness and build support for the

corridor. The CCT spokesperson also mentioned their organisations educational activities designed to spread environmental consciousness amongst corridor inhabitants, including adults as well as children, implored as a key strategy for the corridor. Several interviewees – all associated to York – mentioned an endemic frog species (*Atelopus*) believed to be extinct which had reappeared inside the corridor to much excitement, and was inspiring environmental awareness. While descriptions of educational activities were given in most depth by respondents associated to prominent organisations in the corridor, and so involving ideals coming from outside the corridor, the sense that environmental education and consciousness was important was felt by locals beyond these groups:

> *"I have realised that if I take care of nature, my life is going to improve. We must make people fall in love with the corridor. Show them the beautiful things that it has, and what would happen if we lost them! How would this affect us? What would happen without this forest, without these animals?"* – Local artisan

> *"Here we have the advantage that we go outside to our patio – and we have food. There are fruits and vegetables. And If I go to the back, I will hear birds singing. So, this is life. We are human, we need water and air. And we have it here in the COBAS"* – Local businessman

> *"Our neighbours have created much conservation consciousness. Today we see more fauna. And so we go, little by little"* – Smallholder farmer (#2)

> *"Landowners are changing from hunters to conservationists"* – Local teacher

Through *logic of practice*, these statements can be understood through the experiential and lived appreciation of the corridor and the sensory-emotional consciousness it inspires. Locals valued nature for many reasons: its contribution to human wellbeing, sensory and emotional appreciation, resources for consumption, and legacy for future generations. There was also a sense that this logic was slowly becoming more integral to the corridor communities, and that environmental consciousness was growing. Like in section 6.2.1 on motivations to reforest, these statements revealed corridor values which go beyond those held in a rational-economic logic.

6.4 A summary of the varied policy performances

This chapter answered the second research question 2) *How was the practice of the ASBC performed by policy stakeholders?*

The diversity of corridor practices reported were broadly classified into activities in the themes of *nature conservation*, *economic development* and *community inclusion and participation*, representing the three pillars of the policy which emerged from the discourse in Chapter V. It was observed that activities were generally more frequently reported amongst community than other stakeholder groups, which suggested greater community engagement than any other group in the practice of the corridor policy. It was also observed that the most reported activities were reflective of the objectives articulated in the 2018 Management Plan (SINAC, 2018a). These were (a) practices of reforestation along the Peñas Blancas river and transitions towards sustainable agriculture, (b) the pursuit of a corridor-related tourism sector and (c) claims of participation in corridor management through the local committee.

Practices of reforestation and sustainable agriculture (a) were guided by sensory-emotional *logics of practice*, where farmers expressed appreciation of nature and desire to protect it for its beauty, contribution to wellbeing, and for future generations. Yet, reforestation and sustainable agriculture were not as widely practiced as conventional forms of agriculture which continued to cause environmental degradation, explained by a rational-economic *logic of practice*. Under this logic, the need to make living outweighed the desire to engage in more sustainable practices, with claims that transitioning to practices such as agroforestry necessitate financial support. Sustainable agricultural practices occurring in the corridor were largely facilitated by funding from foreign, non-community donors. Thus, differing *situated agencies* amongst the community illustrated how differential access to resources and opportunities dictated practices of sustainability. The pursuit of a corridor-related tourism sector (b) emerged as the most discussed practice, with respondents across all stakeholder groups adhering to a 'conservation and development' *rationality* which highlighted the benefits this sector could bring for community livelihoods and nature using terms like 'eco' 'rural' and 'regenerative' to describe it, without mention of potential associated threats. Claims of participatory management (c) by state-affiliated and community members associated with the local committee were contrasted with claims of exclusion by participants not involved or previously involved in management. These contestations were centred in discussions regarding powerful stakeholders' influence in decision-making processes, and access to and distribution of corridor-related benefits and information, again highlighting through *situated agency* how accessibility influences participation in corridor-related practices.

A number of activities emerged as bottom-up practices by individuals and organisations which were not articulated as official policy objectives in SINAC's 2018 Management Plan. These were (d) discussions about hunting and the need for improved waste management – brought forward exclusively by community members; and (e) activities related to scientific investigation and educational activities - practiced by influential non-state groups representing the NGO, academic and community sectors (principally the CCT, York University and AMACOBAS). Here, a sensory-emotional logic of practice underlined community statements expressing a sense of responsibility to value and protect nature, which was reportedly growing in the corridor. State-affiliated stakeholders did not exhibit this logic of practice, and were not involved in corridor practices beyond management processes. The states 'hands-off' approach was justified through a logic of decentralisation, which was tied to their 'conservation and development' discourse.

CHAPTER VII. THE CONNECTIONS & CONFLICTS BETWEEN DISCOURSES AND PRACTICES

This chapter brings together the results from the first 2 research questions - which explored (1) the discourse articulated and (2) the practice performed of the corridor policy – answering the final question and research objective to uncover and understand the relationship between discourses and practices in the ASBC.

The chapter is structured as follows. First, the key connections and conflicts which emerged between discourses and practices are explored: i) the co-existing practices which both promoted and compromised connectivity, conflicting with the predominant discourse of the corridor's main conservation purpose; ii) the predominance of practices which promoted and sought out development opportunities, particularly in the tourism sector, aligning with articulations of the corridor's purpose of economic development; iii) the contested degree of community inclusion and participation, in particular reports of exclusion and unequal resource access which conflicted with the discourse of community inclusion and wellbeing in the corridor. Throughout, the incongruencies between the policy purpose and practice are explained through the concepts of *situated agency*, *logic of practice* and stakeholder *rationalities*. These incongruencies show that capabilities to perform the policy were limited by the choices available to actors, and that actor behaviour was influenced by different and sometimes conflicting principles and narratives, leading to disparate policy outcomes. Lastly, the argument is presented that the openness of the policy observed in articulations of the discourse - characterised by varied and sometimes vague understanding of the objectives and varied stakeholder interests - mirrored the openness of the policy in practice and its many outcomes. The key trends are presented visually in Figure 7 below, referencing representative quotes structured within the sensitising concepts of the study framework.

7.1 The win-win-win vision: key connections and conflicts

7.1.1 Connectivity and degradation: co-existing realities

Within the theme of nature conservation, a key trend which emerged was the co-existence of practices which promoted and protected landscape connectivity with practices that encouraged landscape deforestation and degradation. This represented a gap between the discourse of the strategy – which articulated nature conservation as its principal purpose in every document and almost every interview respondent – and the practice, which showed connectivity was both facilitated and compromised by the different performances of the policy.

Reforestation and sustainable agricultural transitions were specific objectives articulated in the 2018 Official Management Plan for the ASBC. Here, the river was referred to as the principal connectivity route, or "backbone" of the corridor, and in community interviews the river was also repeatedly mentioned as a central element of the corridor. Descriptions of the river zone gaining forest coverage and of increased sightings of wildlife in the corridor were principally made by the farmers engaged in reforestation practices – making this a part of the

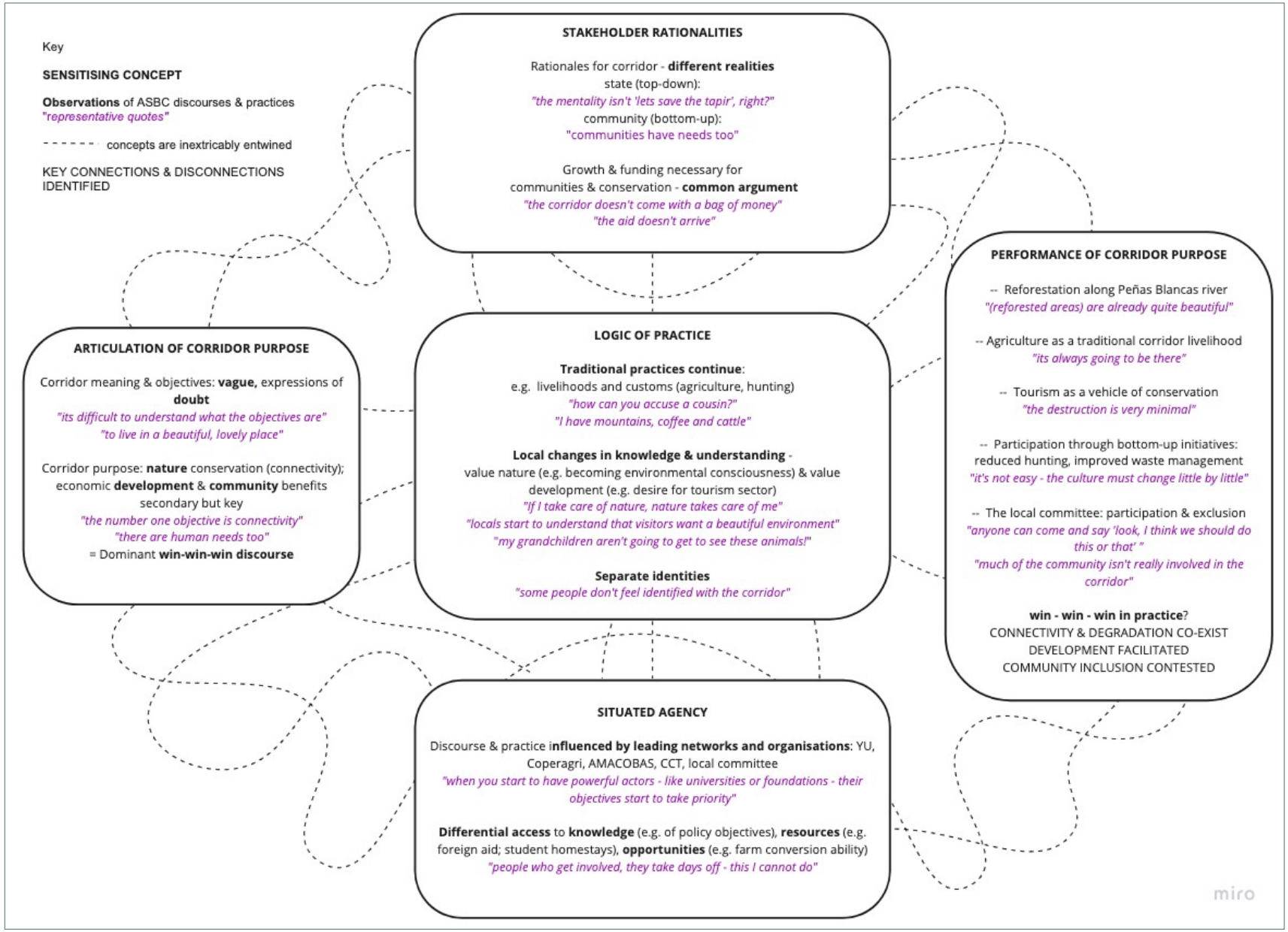


Figure 7. Key trends and example quotes from the discourses and practices of the Alexander Skutch Biological Corridor (ASBC) policy, following the five sensitising concept study framework. Concepts are inextricably linked with each other (Behagel, 2012). Based on data from interviews conducted between Jun-Oct 2021.

performance of reforestation. The main performances of reforestation and sustainable agriculture observed were by farmers, guided by sensory-emotional and rational-economic logics of practice, and situated agencies influenced by connections to prominent organisations in the corridor. Rewilding, tree planting and farm diversification were facilitated through a 'support framework' in the corridor which provided external funding and resources – commonly referred to as 'ayudas' (aid) – to support these practices. These resource flows came from external organisations interested in promoting such activities, such as the PNUD or the UN small donations programme by partnering with influential organisations in the corridor, such as York, the CCT and AMACOBAS. The accompanying sensory-emotional logic observed in farmers who practiced reforestation placed value on an aesthetic, emotional conception of nature, alluding to its contribution to wellbeing, pride, and an understanding of the importance of conservation practices for future generations.

Access to facilitating resources and networks were not uniform throughout the corridor, observed through differing *situated agencies*, and so emerged as a key factor mediating the delivery of conservation-related objectives of the management plan. There were numerous claims that *"the aid doesn't arrive",* and that a lack of financial support was a key reason why damaging agricultural practices – such as monocultures with heavy pesticide use or forest clearing for cattle ranching – continued in the corridor. Despite the understanding of the environmental damage these practices represented and desire to transition away from them captured in the sensory-emotional logic, most farmers reportedly could not make this change. Here, a rational-economic logic of practice emerged where farmers' need to make a living and the cost of making sustainable transitions was too high. Production in the corridor was viewed as *"something that's always going to be there*," likely due to the historic legacy of agriculture in the region, where livelihoods have been tied to agriculture for generations, and farmers continue practices of land clearing and degradation in the corridor as they try to maintain productivity and profit.

Similar logics of practice and situated agencies were found to influence the practice of conservation-oriented activities beyond the management plan. Influential organisations and their networks, such as York University and the CCT, proved to be the most active in scientific investigation and monitoring activities, thanks to their resources and reach in the corridor. It seemed that despite not having many explicitly articulated objectives in the official plan, these organisations followed their individual interests and agendas to promote educational programmes, workshops or events designed to promote the corridors environmental mission. State and state-affiliated respondents encouraged and supported this position of influence through a 'hands-off' *rationality* of decentralisation where state funding was too limited to engage in such practices, and responsibility for corridor implementation falls on corridor users. As such the clear articulations by state respondents that nature conservation was a key objective of the corridor were coupled with an absence of tangible practices by the state to fulfil this objective, accompanied by a rationality that this was not the state's responsibility – thus representing the states performance of conservation.

After reforestation and sustainable production, community stakeholders performing conservation were most preoccupied with discussions about waste management and hunting in the corridor, but these objectives were notably absent from the 2018 Management Plan. Sensory-emotional logics underlined local's denouncement of hunting and littering, in which

they implored the importance of environmental education and awareness. Despite these values not being officially articulated – also being absent from discussions with state respondents – these practices were shown to represent an important, bottom-up performance of the corridor policy by community members. The finding suggests the logic which guides communities in their day-to-day performances of the policy emerged outside of the strategies set out in the plan. Furthermore, this finding could relate to the emotional and sensory conceptualisation of the corridor, and objective of environmental awareness which were absent from state discourses in their articulation of the corridor policy. Thus, community articulations of corridor objectives which included environmental awareness as a core value of the corridor arguably manifested materially through practice. In contrast, logics of practice which showed disengagement from the corridor rooted in dismissiveness or disillusionment, as evidenced in statements describing locals who continue to hunt or litter, also manifested materially leading to practices which were not aligned to the conservation mission of the corridor.

7.1.2 The promise of development: an uncontested rationality and logic of practice

Within the theme of economic development, a key trend which emerged was the dominant and uncontested *rationality* that conservation and development go hand in hand. Given the lack of funding available for conservation, income generation was not understood to compromise the environment – but in fact to protect it. The idea that conservation and development must go hand in hand was captured as a common stakeholder *rationality*, as it was articulated throughout all of the corridor documents, and also as a *dominant logic of practice*, based on the predominant reasoning which was rooted in the experiences of most corridor stakeholders. All stakeholder groups mentioned economic development as a goal for the corridor: in the articulation of objectives, as one smallholder stated, *"to have a lovely economy"*; and even in some conceptualisations of the corridor, as a corridor official stated, *"a corridor must always have a production component".* In SINAC's 2018 Management Plan, the pursuit and expansion of a route for tourists and improvements in agricultural practices were cited as specific objectives to facilitate its overarching mission of connectivity. The practices of the corridor were characterised by performances centred around agriculture and most notably, tourism, indicating a connection between the discourses and practices of development.

These performances indicated the importance of local livelihoods, attracting resources and generating profit by most stakeholder representatives – revealing a dominant economically-driven *logic of practice* amongst all stakeholder groups. As stated by the MINAE official, *"people respond to economic incentives for conservation. The absence of funding means unsustainable practices*" and by a local farmer explaining an important limitation to his practices: "*the aid doesn't arrive."* Tourism was the principal activity which was discussed in interviews in relation to the corridor, with all stakeholders framing it as corridor friendly as it can serve to substitute agriculture, and make higher profits. As explained by one smallholder, instead of working all his land, a farmer can work half of it, and make a profit from selling the experience of visiting the land. The positive view of tourism was reflected in the language in which it was articulated, such as 'regenerative-, 'rural-', 'eco-' and 'student-' tourism. In this narrative, the transition was perceived as positive as it incentivises better environmental stewardship: as one local said: '*people start to understand that visitors want a beautiful*

environment,' and another *'it pays to conserve'*. Risks for the environment and communities were not part of the narrative, and not expressed by any of the study participants. As justified by one community member: *'more than harm, I feel this can benefit the community,'* and if developed in a controlled fashion '*the destruction will be very minimal.*' The logic and rationality maintained that income generation does not affect, but in fact protects the environment from degradation by creating incentives for its protection – making conservation and development mutually beneficial projects. Thus, the win-win narrative in which conservation and development go hand in hand dominated the discourses and practices of all stakeholder groups.

While there were non-economic reasons for protecting the natural environment of the corridor, such as the enjoyment of a pleasant habitat, or the hope that future generations be able to observe the wildlife in the area, these more sensory and emotional justifications were never framed in conflict with the need to make a living, or even the pursuit of profit. Thus, the sensory-emotional and the rational-economic logics for conservation were not exclusive, existing side-by-side, complementing and perhaps even reinforcing each other through the idea that tourists will pay to see a beautiful place. Locals who admitted threats associated with agricultural expansion and urbanisation pointed to limitations in funding, inadequate regulations, and an unchanging local culture as reasons for concern – not the pursuit of development opportunities, which was largely welcomed with no contestations attesting to any risks these may bring to the objective of connectivity. Thus, activities contributing to the land use trajectory in which connectivity and deforestation co-exist continued, celebrated for their contribution to livelihoods and local economies, or condemned on the basis of financial, regulatory or cultural limitations, but always accompanied by the uncontested logic that development is welcome and beneficial to the corridor mission.

7.1.3 Community participation and exclusion: contrasting reports

In the articulation of the corridor's objectives, references to improving quality of life, human wellbeing and addressing community needs were central in both state and local discourses. 'Community needs' alluded to livelihood opportunities, but also to *"living in a lovely, pleasant place"* – alluding to sensory and emotional benefits of the environment. The idea of balancing human needs with nature conservation therefore emerged as an important part of the discourse of the corridor policy. Livelihood-related practices, such as tourism and agriculture were central to corridor implementation, which not only fulfils the development objective of the corridor, but also the community wellbeing objective. The dominant rationality of improving community wellbeing in the discourse of the corridors purpose thus aligned with the livelihood practices that dominated performances of the policy.

Within the theme of community inclusion and participation, a key emergent trend was that the performance of community inclusion, while universally recognised as an objective in the articulation of the policy by all stakeholder groups, was subject to contestations about the extent of representation, resource distribution equity and influence of individual mentalities, depending on stakeholder perspective, which was highlighted in the different situated agencies and logics of practice.

The management plan articulated community participation as a specific strategy for the corridor, as did state-affiliated respondents and locals involved in the local committee. As a PNBC official implored: *"strong corridors occur thanks to motivated and empowered management, which occurs with actor diversity,"* and one local member stated that *"anyone can come and say 'look, I think we should do this or that"*. Yet, there were reports exclusion amongst some locals – citing lack of accessibility to committee meetings, distrust in the management and a lack of interest or understanding of the initiative in general from the broader community – illustrated by a local's claim that *"much of the community isn't really involved in the corridor."*

It emerged that particular groups and organisations, such as York University, the CCT, AMACOBAS, and the local committee were represented in meetings, where their objectives were at the forefront of the discourse. By contrast, other actors did not attend meetings because they did not have enough information, or time to attend. Thus, groups with access were disproportionately active in the production of discourse – through the elaboration of the management plan – and performances in the practice, which even went beyond the plan – such as environmental education, scientific monitoring or waste management. As stated by a corridor researcher "*when you start to have powerful actors – like universities or foundations – their objectives start to take priority*." These performances, emerging from the practice of the policy rather than from the articulation in the discourse, reflect how situated agencies and logics of practice shaped the outcomes of the corridor. The aforementioned organisations of influence provide knowledge, resources and opportunities which, explored through the concept of situated agency, were unevenly distributed across the corridor community. This explains the dominance of performances of the objectives set out in the management plan, but also of those beyond. Understandings and identities which valued improving environmental stewardship exhibited in a sensory-emotional logic of practice, contrasted with reports of mistrust, or lack of identity with the corridor or its dominant organisations, which represented traits of a dismissive logic of practice. This further serves to highlight the trend linked to community exclusion from the corridor which led to non-engagement with the policy and engagement in activities not aligned with its conservation objective – such as land clearing for agriculture.

7.2 Openness of corridor discourse mirrored openness of practice

In this final section, it is argued that the openness of the policy discourse – openness referring to the variety and vague articulations for the corridor purpose found in RQ1 – mirrored the openness of the policy in the performance of this purpose – alluding to the varied performances which formed part of corridor practices found in RQ2.

While in answering RQ1 it was established that the purpose of the corridor was understood by stakeholders as a territory with a strategy – for the principal purpose of nature conservation, with economic development and community inclusion as important components of the mission. It was also shown the understandings of the corridor as a concept and of its objectives were highly varied and often vague. This was revealed in articulations by non-state respondents – particularly the inhabitants of corridor communities. Described as "*life – to breathe pure air*," "*a nature sanctuary*," "*an evergreen forest with lots of species*," and "*a beautiful place*" by community members, these definitions contrasted with state-

affiliated descriptions which described it more closely to official legal definitions: "*a geographic space for sustainable development"* or "*a way of co-managing a territory with different interests."* The source of variety in these quotes reflected the variety of stakeholder realities and interest values – with community members evoking rich and emotive situated descriptions in contrast to the matter-of-fact management-oriented descriptions by state officials. Here, the contrasting elements from the sensory-emotional and rational-economic logics can be observed. There was not much consistency in conceptualisation statements beyond this pattern, and therefore not a clear, unified definition of what the corridor is. The varied articulation of objectives in interviews similarly revealed a number of different interest values associated with the corridor, from incentivising the visits of tourists into the corridor, to searching for aid, to scientific investigation – which varied according to the stakeholder in question: the businessman preoccupied with tourism, the farmer interested in aid and the NGO representative focused on scientific investigation.

While answering RQ2, it was shown that the vague and varied understandings of the corridor purpose from RQ1 translated into diverse practices in the performance of the policy. Many of the objectives articulated in SINACs 2018 Management Plan – in particular those related to agriculture, tourism and reforestation along the Peñas Blancas river – were shown to be central performances of the policy in practice. These practices were shown to be discussed in most clarity by those directly engaged in the activities – such as farmers – and those who had also been involved in local committee meetings during which the management plan objectives were designed. This shows the influence of the official discourse from the management plan – as produced by actors involved in management - on the practice of the corridor. Practices which followed these guidelines were often performed as part of local livelihoods, such as tourism or sustainable agriculture, which were shown to be tied to local desired values and existing livelihood practices, while also following official objectives.

Emerging outside of those outlined as official objectives, activities related to waste management, hunting, and environmental awareness programmes, reflected performances of the policy rooted in desires for improvements of environmental stewardship that were not guided by official policy objectives, but by key actors and organisations, such as farmers or the CCT and York, in their day-to-day activities and situated understandings of the corridor. This demonstrates the influence of key groups and actors in shaping the outcome of this policy beyond any clearly defined guidelines, evidenced by the broad recognition of these activities by actors not directly involved in the practices. The discourse of community members who were less involved further emphasised the influence of groups such as York, the CCT or AMACOBAS in the corridor. For example, such groups understood the ASBC as a management entity or group: *"the corridor gets confused by some groups*", or disengaged from understanding it all together: *"much of the community isn't really involved in the corridor"*–. The analysis of findings revealed that isolation and disengagement with the corridor could be related to perceptions that corridor resources are unequally distributed, that benefits are inaccessible, or simply with a lack of understanding of its goals. Vague and varied understandings of the corridor are therefore a double edged sword, in which active organisations with resources and discursive power have an influence on the corridor with real material impacts which can be positive – such as the reforestation along the river Peñas Blancas as articulated in the official management plan - yet other practices in the corridor continue to cause environmental degradation in areas where people may be disengaged from

the initiative or limited in their practical capacities to contribute to the mission – evidenced by the expansion of land clearing for agriculture.

7.3 Tracing the line between discourse and practice: a summary

Overall, this section showed connections between the discourse and practice of the ASBC in the themes of economic development, and some incongruencies in the themes of conservation and community wellbeing and inclusion. The dominant 'conservation needs development' rationality which justified development and growth as a facilitator of conservation explained the dominance of agriculture and tourism as performances in the corridor policy implementation. Differing situated agencies of corridor actors explained their varied capacities to act, influenced by access to the knowledge, resources, and opportunities afforded by leading networks and organisations such as York, the CCT and AMACOBAS and their associated backers. Differing logics of practice explained how different understandings about the value of both nature and development resulted in changing routines – such as bottom-up waste management initiatives on one hand; or increased clearing for cattle on the other – and how these co-existed with more traditional and static logics, which for example led to continued hunting. Actors engaged in each activity differently according to these agencies and logics, which explained the incongruencies between the discourse and practice of conservation and community policy goals.

Finally, the varied and sometimes conflicting outcomes – notably the simultaneous forest degradation and reforestation – were shown to be reflective of a policy that was vague, varied and open in its articulated purpose by locals. Without a formal process of monitoring or regulation by the body who manages it, the corridor policy was overwhelmingly performed by situated actors guided by their individual and varied understandings, desires and capacities. The openness of the corridor as a concept – "*one must realise, deeply how a corridor is. I am here, I have mountains, coffee plantations, and cattle*" – and flexibility afforded in the sometimes unclear and ever evolving objectives –*"I should know what the objectives are, I must have read them like 500 times!"*– arguably mirrored its openness in practice, therefore leading to the disparate outcomes observed in the implementation of the ASBC policy.

CHAPTER VIII: DISCUSSION & CONCLUSION

This final chapter begins by restating the purpose of the research, summarising the key findings and broader conservation debates in which they are placed. Secondly, the main findings are discussed in depth in the context of broader debates, leading to a conclusion on the results. Thirdly, reflections on the theoretical and methodological choices are brought forward. Finally, recommendations for further research and corridor practitioners are suggested.

8.1 Relevance of research and contribution of thesis

8.1.1 Corridors in Costa Rica: tracing the line from vision to execution

Conservation, human well-being and development represent key societal challenges for the future, often presented in conflict with each other (Rands et al., 2010), but reconciled in mixed-use corridors which promise to connect social, ecological, and economic challenges under a common vision (Goldman, 2009). In Mesoamerica and other biodiverse tropical regions worldwide, the threat of habitat fragmentation and degradation is high given the cost conservation can impose on rural and developing societies (Adams et al., 2004; Gardner et al., 2009; Patel, 2021). The mixed-use model has therefore gained traction globally and been integrated as part of national and international policies seeking to address the ongoing climate and biodiversity crises, the diversity of stakeholder needs and perspectives and the interconnectedness of social, economic, and ecological challenges (Reed et al., 2016; Sayer et al., 2013). Global policy agendas such as the United Nations Convention on Biological Diversity, Sustainable Development Goals, and the still upcoming 2020 Global Biodiversity Framework seek to integrate conservation, development, and community needs, gaining widespread support from practitioners, policymakers, and donors worldwide (Harvey et al., 2014; Reed et al., 2016).

Costa Rica's National Biodiversity Strategy for 2016-2025 and Action Plan for Adaptation of Biodiversity illustrates this trend through its National Programme for Biological Corridors (PNBC), which together with its protected area network represents 33% of the national territory (Honey, 2008). The PNBC's vision is to improve habitat connectivity for biodiversity conservation, foster the sustainable use of natural resources, distribute its benefits equitably, and increase climate resilience (MINAE, 2016, p7). This model conceptualises corridors as mixed-use landscapes which through biodiversity-friendly management and inclusion of livelihood and production activities for development can enhance ecological connectivity and preserve conservation and ecosystem services for the benefits of humans and nature (Chazdon et al., 2009; DeClerck et al., 2010; Harvey et al., 2008; MINAE, 2016).

Yet, there is little evidence of the successful practical application of the corridor model. In Costa Rica, a still expanding agricultural sector and population continue to threaten ecosystems with soil erosion, contamination, and deforestation (Bonilla-Carrión & Rosero-Bixby, 2000; Rapson et al., 2012), and there are reports of degradation within corridors and protected areas (Sanchez-Azofeifa et al., 2007). Evidence for the implementation success of corridors in Costa Rica and indeed in other tropical regions is lacking, despite the discursive

win-win promises and widespread popularity of the strategy (Keeley et al., 2018). Implementation challenges include funding limitations, institutional and governance issues, and addressing of conflicting interests of diverse stakeholders which hinder successful corridor implementation (Chazdon et al., 2017). Such implementation challenges are similar to those observed in other conservation strategies seeking to unite conservation and development agendas (McShane et al., 2010). Given critiques on corridor implementation which point to environmental leakage and local exclusion from benefits (Barr & Sayer, 2012; Latawiec et al., 2015), the potential incongruency between the win-win discourse and practical implementation of biological corridors in Mesoamerica is concerning for nature and local communities (Patel, 2021). There is a paucity of studies which critically examine corridor policy implementation, and to the researcher's knowledge there are none for Costa Rica, a country considered a leader in conservation area coverage (Elbers, 2011). This calls for further research to better understand the line from vision to practical execution of biological corridors in Costa Rica and beyond.

8.1.2 Revisiting the research aim and key findings

This research used a case study approach to investigate the discourses and practices of the Alexander Skutch Biological Corridor (ASBC), one of the first corridors to be introduced as part of Costa Rica's National Programme for Biological Corridors (PNBC) in 2006. This case represents an example of an integrated conservation and development strategy in a country considered a leader on the world conservation policy stage, designed to protect biodiversity from increasing habitat fragmentation and degradation whilst promoting an agenda of sustainable development and community inclusion. The policy purpose and objectives, while discursively promising, are not formally monitored and there is a paucity of evidence-based studies which analyse their trajectory and delivery from discourse to practice.

This research sought to contribute to filling this knowledge gap through a case study investigation aiming to uncover and understand potential gaps or connections between the discourses and practices of stakeholders in the ASBC. Discourse and practice theories were combined to place analytical focus on the meanings of and actions in the biological corridor. According to these theories, interest values are produced and re-produced in the language used to articulate the policy purpose. These interest values align with stakeholder's rationalities, and impact materially through performances of the policy in practice, guided by stakeholder's situated agencies and logics of practice. The case study approach triangulated data from interviews and key policy documents representing state-affiliated, NGO, academic and community stakeholders and used thematic analysis to reveal, inductively and deductively, key trends between policy discourses and practices. Analysis was guided by the principal research question: what was the relationship between the discourses and practices of policy stakeholders in the ASBC? and was answered with the following sub-research questions which focused on uncovering and understanding I) how the purpose of the corridor was articulated, II) how the practice of the corridor was performed, and III) and the interactions (connections and disconnections) which arose between discourses and practices.

For the first sub question, the results revealed a dominant discourse for the corridor's purpose, with the primary objective articulated of achieving connectivity for biodiversity conservation whilst simultaneously delivering community and development goals, suggesting

a united win-win-win *rationality* shared by all stakeholder groups. Variations emerged in the more intricate understandings and interpretations, by different stakeholders, of the corridor as a concept, and of its multiple objectives. The key differences were between state and local *articulations.* Local understandings were revealed through descriptive and emotive statements related to pride, identity, and experience. In contrast, statements by state representatives used technical, abstract and strategic discourse which mirrored official policy documents.

For the second sub-question, accounts by local actors of the policy in practice revealed and consistently described in detail the varied activities and processes associated with the corridor. Reforestation along the principal connectivity route on the Peñas Blancas river, transitions towards environmentally- friendly agricultural practices, and the pursuit of a tourism sector all represented *performances* of the objectives set out by SINACs 2018-2025 Management Plan (SINAC, 2018). Tourism stood out as the most discussed activity, widely appreciated for its potential to improve the local economy and incentivise environmental stewardship, with this emerging as a dominant *logic of practice* and *rationality* amongst all stakeholder groups based on their interests and experiences. These activities were also discussed as dependent on financial incentives or rewards, which using the concept of differing *situated agencies*, revealed differential access to resources which heavily influenced the performance of activities by different actors. The degree of community participation in corridor management and related practices was a point of contestation, with claims that much of the community was not involved significantly in the corridor initiative, and with the suggestion that unequal access to knowledge, resources and opportunities for participation were primary reasons for this. Beyond the management plan, established organisations such as York University and the CCT had the capacity to facilitate resource-demanding activities, such as scientific investigation and education, which the state apparently did not. Discussions regarding hunting and waste management emerged as bottom-up performances of the corridor policy by locals who, motivated through a sensory-emotional *logic of practice*, wished to take care of nature and leave a legacy for future generations.

Finally, to answer the final sub-question and overall research objective (connections and disconnections between discourses and practices), the results demonstrated the discursive win-win-win of the corridor did not translate fully in the performances of corridor practices. The uncontested rationality that maintained the importance of development and its contribution to communities and conservation represented a connection between discourses and practices for all stakeholder groups. Yet practices leading to both conservation and degradation - such as reforestation and urbanisation - co-existed. There were reports of community exclusion of actors in the corridor isolated from influential organisations from corridor decision-making, benefits, and opportunities. These disconnections were explained through situated agencies which revealed uneven access to, and opportunities to perform, the policy. Co-existing logics of practice revealed both emotional and economic motivations to perform the policy, and dismissive logics which explained disengagement with the initiative. Many corridor activities were reflective of the official management plan discourse – yet performances of the policy went beyond the official management plan, revealing the bottom-up influence of locals' situated experiences, producing a policy performance aligned with their interests, desires and interpretations for the corridor. The open nature of the policy in its articulated purpose – with its numerous objectives and varied local interpretations –was

found to relate to the open way in which it was ultimately performed – manifested through the numerous activities, motivations, and capacities in the field of the corridor practice.

8.1.3 Contribution of thesis

This research highlighted several important connections and disconnections between the discourses and practices of the ASBC. The discourse of the corridor policy, which purports to reduce habitat degradation and fragmentation, and promote sustainable use and livelihoods for the wellbeing of communities, lacks research on its practical implementation on the ground.

The rich empirical findings of this research contributed to filling a gap in the literature on biological corridors: which scarcely analyse their path from vision to execution. The research uncovered the following key observations regarding gaps and connections between the discourses and practices of the ASBC:

1. **Conservation and community objectives were compromised in practice while development objectives were not.** Performances in the corridor were characterised by uncontested rational-economic logics of practice, where sustaining and protecting livelihoods was prioritised, and by a 'conservation needs development' rationality were insufficient funding limited conservation practices. Differing situated agencies amongst the community showed differential access to resources and opportunities to participate in corridor.
2. **The corridor policy discourse was characterised by varied, vague and open articulations of its purpose and objectives**, leaving room for interpretation. The varied and conflicting outcomes of the corridor policy in practice – notably simultaneous forest clearing and reforestation – were arguably reflective of these articulations.
3. **Locals played an important role in shaping the policy from the ground up, guided by their situated understandings, interpretations, and expectations of the corridor.** Locals overwhelmingly performed corridor activities more actively than other stakeholder groups, and beyond the objectives outlined in the management plan, guided by a sensory-emotional logic which was absent from state discourses.

The empirical findings highlight the potential of corridors to promote activities which benefit communities and the environment, bus also that attention should be paid to the inconsistencies between the corridor vision and execution which lead to disparate policy outcomes. In addition, to contributing much needed empirical findings to debates on biological corridor vision and execution, the research highlights the applicability of discourse and practice theories to examine such phenomena. This dual analytical approach combines the hegemonic critique afforded by discourse theory with the place-based intricacies, contingencies and improvisations captured by practice theory, both of which are useful to understand the line between vision and execution of this environmental policy. Lastly, the research highlights the potential of conducting remote online research to get rich empirical data for a practice-based approach.

8.2 Discussion of Results

8.2.1 Caveats of the win-win discourse: performance implications for communities and conservation

Community participation & exclusion

The decentralised participatory structure of corridor local committees in Costa Rica claims to be inclusive of the interests of diverse actors from state, NGO, private and community sectors of society (Arauz-Beita & Arias-Navarro, 2016; SINAC, 2008). In the ASBC, confidence in the effectiveness of this management structure was reiterated by state and local stakeholders involved in the local committee, who claimed diverse community interests were represented in the co-production of objectives. Consultations between state and local partners apparently led to the inclusion of some local voices in the management plan, catering to agricultural and business interests in addition to conservation. For example, the provision of water feeders for cattle close to the river to avoid erosion proved to be a successful implementation of an objective which was designed to benefit local farmers while enhancing connectivity.

Yet, numerous statements by locals not involved in management expressed community disengagement from committee meetings and from the overall corridor initiative – with claims that much of the corridor population was not involved at all. Findings from other case studies on biological corridors in Mesoamerica mirror those from the ASBC where involvement in participatory processes such as meetings, consultations and writing of management plans were largely limited to representatives of groups with interests in productive and service sector (e.g. tourism) activities (Ervine, 2010). However, it is possible that the extent of exclusion in the ASBC was not as severe as in some studies, which report consultations with communities in participatory processes were purely symbolic (Finley-Brook, 2007), or only consisted of NGO, academic and state representatives (Grandia, 2007), given the inclusion of some - albeit not all - local stakeholders. Nevertheless, the statements from locals not involved in formal management indicated a feeling that the corridor enriched only a small minority of the community, as found in other corridor studies (Ervine, 2010; Finley-Brook, 2007; Grandia, 2007).

To move beyond symbolic or discursive claims of participation which so often characterise integrated conservation and development corridors (Ervine, 2010; Finley-Brook, 2007; Grandia, 2007), the heterogeneity of communities and inherent power structures which are already woven in the community structure must be recognised to avoid an exacerbation of pre-existing inequalities (Adams & Hulme, 2001; Agrawal & Gibson, 1999). It is a well-known phenomenon that local elites tend to capture the benefits from development interventions, and integrated conservation and development projects aiming to provide community benefits often result in a less equitable distribution of power and assets (Berkes, 2004). Accounting for the unequal benefit distribution amongst, and even within stakeholder groups (Krause et al., 2013) should be an essential component of 'participatory' management processes. In the ASBC, as well as in other mixed-use corridors, this means considering the opinions and needs of stakeholders not present at the table in meetings. As noted by one smallholder, his ability to participate in meetings was constrained by his work duties, therefore he could not afford to attend and did not have a good understanding of the corridor and its potential benefits, a

condition which favoured inequality within the community. Inclusivity in participation must involve specifically targeting marginalised and subordinate groups for participation (Hickey & Mohan, 2005).

The socio-environmental risks of eco-tourism

The findings showed a dominant discourse which framed tourism, often articulated as *eco-, rural-,* or *sustainable-* tourism, as a strategy which would deliver win-win-wins for communities, conservation and development. The discourse of tourism as a conservation practice suggests that it is one of the principal ways in which conservation in the corridor is performed. The accompanying rationality can be summarised as follows: by facilitating a transition away from environmentally destructive agricultural practices, tourism positively contributes to local livelihoods and incentivises improved environmental stewardship by locals to encourage visitors to come.

Given that Costa Rica's tourism industry accounts for approximately one third of its revenue, relying heavily on an image of environmental consciousness and conservation (Honey, 2008; Jones & Spadafora, 2017), such a rationality is unsurprising. The policy of eco-tourism expansion in Costa Rica was reportedly conceived as a strategy to counteract losses in agricultural profitability in the 1970s and 80s (Honey, 2008), but today contributes to national identity, and national pride, as a vehicle of profitability and sustainability (Horton, 2009). The inhabitants of the ASBC exhibited logics and rationalities mirroring this national sentiment, with the expansion of a tourist sector framed as a solution rather than a threat to socio-economic and environmental wellbeing. It is possible that the threats weren't a part of local's discourses because tangible negative effects of ecotourism in the ASBC were not very present, were still outweighed by the tangible positive effects observed by locals, such as new businesses emerging. While there are some examples in the literature of successfully implemented eco-tourism projects shown to contribute positively to local employment, education, or reforestation (Zambrano et al., 2010), these examples are arguably exceptions to the norm.

Yet, the expansion of eco-tourism in Costa Rica has generally had negative impacts for the environment and local communities according to numerous studies citing biodiversity loss, rising prices, solid waste generation, uncontrolled housing developments and loss of social cohesion by increased alcoholism or prostitution (Koens et al., 2010; Stem et al., 2010). The issues of urbanisation and inadequate waste management were raised by ASBC corridor inhabitants, indicating some of these issues are already affecting the area. Still, ecotourism could represent a better alternative to more destructive land uses such as logging, plantations, and cattle ranches (Miranda Quiros, 2003), an argument pointed out by many ASBC stakeholders.

As suggested in studies on eco-tourism in Costa Rica, its potential as an alternative to environmentally destructive practices depends on careful management and planning at the local level (Koens et al., 2010). In the case of the ASBC, movements to counteract increasing waste generation have so far been limited to informal, bottom-up practices. Locals in the corridor repeatedly called for improvements in infrastructure for waste management, as well as greater involvement by the municipal authorities to help with the growing issue.

Notwithstanding, their concerns have, so far, been left unanswered. Corridor officials similarly looked to the municipal authorities to provide solutions to the problem of increased waste generation. While the results from the ASBC align to findings from studies suggesting eco-tourism puts pressure on the environment, they also align to suggestions that it can contribute to greater levels of environmental awareness amongst locals (Stem et al., 2010). This is evidenced by their disapproval of littering, and their collective action to manage it through waste collection and recycling projects. Nevertheless, local concerns and practices in response to the increased development in the corridor are indicative of a gap between the vision and execution of the policy. Closing this gap could be addressed by involving locals in planning and adequately monitoring its social and environmental impacts (Valverde Costa & Quesada-Román, 2018).

The persistence of funding limitations for conservation practices

The need for funding was mentioned by local and state respondents alike as central limiting factor for engaging with and adhering to conservation practices in the corridor. This was underlined by both the conservation-development *rationality* and the rational-economic *logic of practice.* On a local level, smallholder farmers in the ASBC highlighted the need for "*ayudas*," by which they mean aid or subsidies, to transition towards more sustainable practices. This finding mirrors previous studies citing socio-economic challenges impede transformations towards biodiversity-based management practices, such as agroforestry and farm diversification (Kremen & Merenlender, 2018). There seemed to be an expectation by farmers that the state should support them in engaging in sustainable practices, which could be largely due to the legacy of state policies which previously subsidised agriculture pre-1980s to help farmers cope with price drops (Brockett & Gottfried, 2002). However, state representatives deflected responsibility for funding and monitoring of the corridor away from the government, highlighting the corridor implementation is '*the corridor users responsibility*' and insufficient funding as the reason for the lack of a formal monitoring system in the corridor. Thus, both state and local stakeholders looked to each other for responsibility to address the funding limitations of the corridor.

This phenomenon could be attributed to Costa Rica's governance approach for corridors and broad conservation strategies, which relies on decentralised, market-based mechanisms to deliver conservation. The state encourages public-private alliances, PES, ecotourism schemes and debt-for-nature swaps to better manage conservation whilst facilitating profitable businesses (Brockett & Gottfried, 2002; Honey, 2008). The logic is that state inefficiencies related to funding limitations are addressed, and sustainable development is promoted by individuals or organisations external to the state, leading to improved conservation and economic growth. Yet, the common call for funding from locals and officials alike suggests the model which was designed to address the supposed limitations and inefficiencies of the state is still falling short for adequate transformation, enforcement, and monitoring of conservation. Findings from this study mirrored other corridor studies that suggest it was only particular actors and networks, such as York University, the CCT, and AMACOBAS, who were willing and able to participate in conservation and support sustainable livelihoods - and many were still largely limited by funding (Brodie et al., 2016).

Thus, while these findings are unsurprising given biodiversity conservation is often restricted by resource limitations and insufficient government funding in the tropics (Echols & Campbell, 2019; Spiteri & Nepal, 2006), they do highlight a caveat in the neoliberal logic underpinning Costa Rica's conservation and corridor strategy. Evidence to support claims that leaning on decentralisation and marketisation leads to more efficient and effective conservation was not found in the ASBC, mirroring common critiques of this conservation trend (McAfee, 1999; Roth & Dressler, 2012). Critics of market-based conservation have highlighted that, in practice, such mechanisms still require state interventions to deliver the desired results., For example, it has been shown that PES implementation in Mexico and Costa Rica depends on government compensation for forest owners not to clear their land (Fletcher & Breitling, 2012; McAfee & Shapiro, 2010). Similarly, funding is still a limiting factor for effective implementation of objectives in the ASBC, despite the premise that it can fund itself through so-called 'sustainable development'. Funding remains an issue to be addressed if the vision and execution of the policy are to be coherent.

8.2.2 The interpretative possibilities of the corridor concept

Articulations of the purpose of the policy were varied and sometimes imprecise, representing a diversity of stakeholder interests broadly covering conservation, community and development objectives, which included reforestation along the river connectivity route, improvements in human well-being, and the enhancement of the corridor tourist sector. Despite the variety of objectives articulated by different stakeholders, the corridor concept was broadly understood and accepted as a territory with a strategy to deliver win-win-wins for communities, conservation and development. As discussed in the previous section, the limited participation of local communities, unmonitored environmental degradation, and persistence of funding limitations revealed that the win-win-win vision was not always a reality in practice. Notwithstanding, this vision remained central to the dominant discourse of the corridor. These findings mirror literature which suggests that a gap between the vision and execution of conservation policies can be facilitated by a 'discursive blur' in which divergent and ambiguous values are promoted, masking issues and potentially legitimising problematic policies (Büscher & Dressler, 2007). Similarly, studies of biological corridors have conceptualised corridors as 'boundary objects,' highlighting the deliberate discursive ambiguity which allows for flexibility in the management of multiple interests (Goldman, 2009; West et al., 2016). Studies critical of this discursive flexibility in corridors and more broadly in conservation strategies insist that ambiguity can lead to undesired negative consequences and ultimately facilitate the dominance of powerful agendas over others, potentially leading to a rejection of the policy by locals (Goldman, 2009; Igoe & Brockington, 2007).

However, the ASBC was not rejected by locals. Many locals described belonging to the corridor with pride, and none expressed direct opposition to the corridor initiative. This finding mirrors reports that across Mesoamerica corridors are well received by locals who perceive the importance of connecting fragmented and degraded ecosystems (Solís Rivera et al., 2002). The finding is also encouraging given the need for community acceptance for the success of any conservation initiative (Berkes, 2004), and the rejection of other corridors by locals which can arise out of political struggles (Goldman, 2009). Despite the social and environmental issues discussed as emerging in the practice of the ASBC, the corridor was well

received by locals who took pride in the initiative and approved of its win-win-win vision. This could indicate that there weren't any significant political divides, as observed in other corridor studies (Goldman, 2009). It could also attest to the power of a vague and inclusive discourse in masking issues which need addressing, used as a tool to legitimise a corridor which showed significant gaps between its vision and execution, but which was accepted anyway. The use of vague notions of sustainable development, biodiversity, or governance to unite ecological and economic agendas dominate contemporary conservation policy discourses (Arts & Buizer, 2009). This is of concern if, like in the ASBC corridor, a discourse dominates which smooths over issues which may need addressing.

8.2.3 Situatedness: the antidote to exclusion

In the ASBC, locals used emotive and descriptive language in their conceptualisations of the corridor, situated in their experiences and identities as corridor residents, captured in a sensory-emotional logic. As one local said: *"the corridor is life, it is to breathe pure air constantly".* Values linked to local's sense of place capture attachment, identity and symbolic meanings held in peoples' perceptions and interpretations of the corridor, and represent benefits of biodiversity conservation which are often unaccounted for in conservation policy preoccupied with other environmental services (Hausmann et al., 2016). Studies argue the importance of considering locals´ sense of place in environmental policy, thanks to its potential to link social and ecological issues (Hausmann et al., 2016), going beyond technocratic knowledge which dominates conservation discourses (Turnhout et al., 2013). As shown in the ASBC, it is the locals who principally performed the policy, therefore these local understandings and attachments to the corridor ultimately shaped the way it was implemented.

In a study on the implementation of PES in Mexico - a policy which shares much of the sustainable development discourse and logic of Costa Rican corridors - the concepts and practices of the policy were 'contested, hybridised and transformed' in ways comparable to the ASBC case (Shapiro-Garza, 2013). The PES policy was transformed by locals in practice through i) discursive battles over the framing of the initiative, ii) contestations over equity and identity iii) emerging governance structures. These transformations have parallels with the ASBC case. The ASBC's value was framed differently by locals and officials, where local descriptions of the corridor focused on the river, the forest, and the animals whilst officials viewed the corridor as a form of nature management. The discursive battles (i) in the Mexican PES case led to 'non-economistic' values for the environment, similar to findings from the ASBC where locals valued aesthetic and cultural benefits of the corridor as well as the economic benefits. Contestations (ii) over the accountability, equity, and value of the corridor between locals and state officials signalled divergent views between project designers and local implementers. Finally, locals' sense of pride and environmental consciousness arguably led to bottom-up practices, such the collection and recycling of waste by community-led groups, like AMACOBAS, representing an emergent governance structure (iii) which played an active role in corridor practices in the absence of appropriate state intervention.

As explained in the cases above, mismatches between local and institutional value systems can lead to conflict and transformation of conservation and environmental policy in practice. Bringing local situatedness to the fore in policymaking encourages the enunciation of values

which will be accepted and respected in a local context (Hausmann et al., 2016), closing gaps between vision and execution of policies, and potentially leading to better outcomes for communities and conservation. The official discourse of the PNBC, and indeed the ASBC, centred more around the economic than emotional value of corridors. Officials referred to "oro verde" or green gold to explain the value of corridors. Locals were also observed to reproduce this discourse, valuing the financial gains which could be made from conservation, yet they also expressed feelings of pride, of enjoyment of nature, and duty to future generations which motivated their performances of conservation. The over-simplification of complex human-nature relationships by reducing nature to a marketable commodity can compromise conservation by not paying attention to the diverse spectrum of human-nature values (Allen, 2018). This is a crucial reason not to replace local value systems with external ones (Allendorf et al., 2018). The co-existence of rationalities for conservation exhibited by locals in the ASBC is valuable as it sustains a more complex, stable and engrained value system which serves both people and nature. This inclusion of situated values forming from local'' sense of place could contribute to balancing the institutionalised discourses of sustainable development, ecosystem services and market-based measures which dominate mainstream conservation policy (Büscher & Dressler, 2007).

8.3 Reflecting on the research

In the following sections, a reflection on the research process is presented, discussing the strengths and weaknesses of the theoretical and methodological choices made for the investigation, and commenting on the researcher's positionality. Finally, the conclusion and recommendations for further study are presented.

8.3.1 Theoretical reflections

This thesis combined two leading theoretical approaches for the analysis of nature conservation policy: discourse and practice theories. Though widely applied as stand-alone theories, this research demonstrated the use of a hybrid approach which combines the two. This hybrid approach allows for a critique on the hegemony of policy discourses (Dryzek, 2013), integrated with a recognition of the unpredictability which arises in the practice of a policy (Arts et al., 2014). The strengths of each theory thus complement each other, improving the observation and examination of how and why policy discourses produced and reproduced by situated actors may unfold in sometimes unpredictable ways. The discourse-practice frame was informed by political ecology and post-structural thinking (Berkes, 2004; Leipold, 2014), to capture both hegemony and unpredictability. The two theories used in combination were therefore useful to explore the connections and disconnections which emerged between corridor discourses and practices of different stakeholder groups and shine a light on the intricacies of corridor policy implementation from these lenses. The use of these theories was shown to be particularly relevant to study the case of a Costa Rican biological corridor, which represents a policy with a very prevalent discourse promising to deliver societal and environmental objectives through a decentralised, laissez-faire approach in which diverse actors can voluntarily participate according to their understandings, capacities, and interests.

The use of a political ecology perspective was useful to examine the diversity of stakeholder agendas, highlighting the influence of power in terms of how decisions were made and

benefits shared (Berkes, 2004). The concepts of stakeholder *rationalities* and *logics of practice* elucidated how state representative and farmer perspectives on reforestation differed based on their interests and experiences in their respective positions – highlighting economic and motivations for both, but emotional motivations particularly in local farmers. The concept of *situated agency* illustrated well the unequal capacities of corridor stakeholders, and how some agencies – such as those of actors with access to decision-making hubs - were more empowered than others and subsequently more involved in the corridor initiative (Behagel et al., 2017), highlighting the importance of improving accessibility for the corridor's participatory management. Actor *logics of practice* which were dismissive or motivated to improve corridor practices for the environment also served to emphasise the divergent and convergent attitudes with respect to the conservation and development agendas of the corridor (Behagel et al., 2017). These logics demonstrated situated reasoning for undertaking practices which aligned to the policy's overarching mission, despite not being officially recognised objectives, such as waste collection and recycling. These examples thus show how a practice-based view can assist in the reconciliation of top-down and bottom-up approaches to policy implementation (Arts et al., 2013). In the ASBC case, access to committee meetings and emerging waste management practices proved to be key points for future planning for reconciliation.

Beyond the examination of power in political ecology terms, the post-structural position of the theories used implies that there is no single truth but in fact multiple realities (Leipold, 2014), which was useful as corridor stakeholders did indeed demonstrate multiple realities, such as multiple and co-existing motivations to participate in the corridor, or multiple understandings of what the corridor was. Power and resources were influential, but not the sole factors which mediated activity in the corridor. Conceptualising reforestation or tourism as *performances* of conservation allowed for an insight into how and why 'conservation' is performed for reasons that may not be pre-existing, fixed or self-evident (Krott & Giessen, 2014), and how ultimately these performances make up the 'reality' of the corridor as it is experienced and understood by its inhabitants. Reforestation, for example, was performed by farmers by describing the nature they observed, the feelings of appreciation they felt, the desire for future generations to experience the same, as well as by considering the costs to their farm productivity and potential benefits from attracting tourists. It is a multifaceted view of what motivates reforestation but also of how it becomes realised. Similarly, conceptualising tourism as a performance of conservation allowed for an examination into how locals understand an economic activity to form part of an environmental agenda, discussing and performing it as 'eco'-tourism, a non-threatening development for the environment, which is a reality for the corridor inhabitants despite the risks which are largely not considered. This view therefore informs a deep understanding of the intricacies, and even contradictions, of how the corridor policy plays out in practice, and can highlight how many co-existing realities can exist behind a simple win-win script.

Both discourse and practice theories have received criticisms for their methodological and conceptual ambiguity – citing the need for more defined and systematic approaches for research (Arts & Buizer, 2009; Bueger, 2013). The 'field of activity' which was examined contains knowledge, meaning, power, social institutions, rules and activity (Schatzki et al., 2001) – a messy ensemble of entwined components which can be challenging to structure in an analysis. There is still a relatively small amount of empirical research using practice theory

compared with other such as rational choice or institutionalism (Krott & Giessen, 2014), and even fewer examples of research combining discourse and practice theories (Behagel, 2012). Therefore there were limited examples to build on, proving a challenge for systematic data analysis to be consistent with other studies. More established theories, such as institutionalism or rational choice, use concepts like informal institutions (Behera & Engel, 2006), or 'bounded rationality' (Busenberg, 2004) comparable to practice while providing structure and more methodological definition than practice (Hogl, 2013). Yet, these models only account for these elements, where practice theory holds their entwinement as central to the understanding of the problem (Arts et al., 2014). Thus, practice theory is challenging, but illustrative and essential to explain complex processes in forest governance with a fresh perspective, highlighting unexpected outcomes and democratic struggles (Arts et al., 2014; Behagel et al., 2017).

8.3.2 Methodological reflections

This investigation used a case study approach, therefore did not aim to produce knowledge for empirical generalisations or to test universality beyond the case – instead, it aimed to give in-depth insights of particular social phenomena occurring in particular contexts (Flyvbjerg, 2006; Yin, 2009). Therefore, this research contributed an illustrative – not definite – example of a vision-execution policy case.

The iterative approach (Yanow, 2006) taken suited the theoretical frame by maintaining an open view for unexpected results and 'surprises' which arose throughout the whole research process – from the question formulation to the writing of results - which are at the core of practice theory (Van Maanen et al., 2007). The data collection approach demonstrated the applicability of remote investigations using practice theory. Given the conceptualisation of discourse as a practice (Behagel, 2012), in-depth semi-structured video interviews using open-ended questions successfully captured rich and accurate accounts of actor realities ('thick descriptions') in the ASBC case. However, thick descriptions could have been enhanced through observation, participation, or through focus groups (Arts et al., 2013), which were not possible methods given the remote character of the investigation imposed by COVID-19 travel restrictions. The field advisor located in the ASBC helped establish initial contact and understanding of the case study field, for example when drafting interview questions, and helped verify the validity of the data and observations throughout. The researcher's native Spanish speaking ability and prior experience working in rural areas of Costa Rica helped to quickly establish rapport with the interviewees.

The principal limitations of conducting the remote investigation were the difficulty of accessing more isolated community members to interview and doing so within the three-month data collection period. This can be appreciated by considering which type of stakeholder is better equipped to participate in teleconferences, with a laptop/smartphone available to them at all times during working hours, or a farm worker with only occasional breaks to interact via a low-end phone on rural-grade mobile coverage. Compounding this, the field advisor located in the ASBC was not able to find representatives from indigenous groups. This methodology therefore inadvertently facilitated the representation of dominant discourses over less dominant, or marginalized ones. It is thus important to highlight that there will be voices and experiences not included in this dataset and therefore not

represented in the results. For example, the dominance of certain discourses – such as the economic rationality to conserve – could reflect a sample bias in which respondents were predominantly associated to formal institutions, such as the local committee, York University, the CCT or a government agency. Another factor to take into account was that just three out of 18 interviewees were female. Exclusion from corridor management processes can disproportionately impact women (Ervine, 2010). More equal representation of gender could be expected to improve results. The shortcomings in the sample could be addressed in the future by allowing more time to reach a higher level of data saturation (Geddes et al., 2018), and through physical field presence to access more isolated respondents, and through the use of alternative sources of data such as social media and local magazines.

8.3.3 Positionality

Lastly, the researcher's positionality must be considered in this interpretative style of investigation, recognising the findings have been actively produced and interpreted by the researcher (Arts et al., 2014). A conscious effort was made throughout the research for 'empathic neutrality,' yet this can never be fully realised in qualitative research, impacting the data collection, analysis and interpretation (Ormston, 2014).

With regards to the data collection, the researcher's position as a white, European, female student suggests a combination of threatening and non-threatening factors were at play in influencing interview responses (given differences in race, class, gender, age and political affiliation between the researcher and participants). The researcher's white, European background could have been perceived as powerful, yet position as a female student less so (Robson, 1997). Overall, the differences between the researcher and interviewees created a sense of curiosity and interest in discussions, aided by the shared common language (Spanish). Government, academic and NGO respondents who held formal positions within their respective stakeholder group did sometimes attempt to steer the conversation away from uncomfortable topics, however interviewees were generally forthcoming with their thoughts and opinions and seemed candid with their responses to questions – so overall the researcher's position was mostly non-threatening in interviews.

The researcher's academic background and views influenced the analysis and interpretation of data. It must be noted that much of the literature informing this research centred on dichotomous debates about social and ecological failings associated with the vision-execution gap (e.g. Büscher et al., 2012; Carrier & West, 2009; Roth & Dressler, 2012), or human-nature conflicts at the development-conservation nexus (e.g. Büscher & Dressler, 2007; Callion et al., 2017). Therefore, the research is reflective of a particular worldview which must be considered generates a 'contextualized approximation' of the case study, where the role of the researcher in generating this account must be considered (Soedirgo & Glas, 2020). Thus, the reflexivity in this statement makes clear and transparent how the researcher's positionality shaped this research (MacLean et al., 2008).

8.4 Conclusions

The Alexander Skutch Biological Corridor (ASBC), which forms part of Costa Rica's National Programme for Biological Corridors (PNBC), seeks to improve habitat connectivity for biodiversity conservation whilst fostering sustainable use of natural resources and bolstering local livelihoods (MINAE, 2016). The policy vision represents a win-win-win discourse promising to deliver benefits for communities, conservation, and development. Given the paucity of evidence to support the implementation of win-win objectives in mixed-use biological corridor policies, this study set out to uncover and understand how the corridor policy discourse compared to the corridor's practices on the ground.

In the ASBC, the performance of objectives for community inclusion and biodiversity conservation were mixed. Reports of participatory management, engagement in reforestation and sustainable agriculture practices aligned with the win-win discourse of the corridor policy, but contrasted with reports of community exclusion from corridor information, decision-making, and benefits, and of increasing urbanisation and intensive agriculture, which did not align. The inconsistencies between the policy vision and execution were explained through different *situated agencies* amongst the corridor communities, which illustrated how access to financial aid, information, and decision making influenced the different policy performances; and different *logics of practice,* which while at times guided behaviour through sensory-emotional appreciations of nature, also steered practices through economic-rational or dismissive logics which led to the widening of the gap between the corridors vision and execution of conservation objectives. The 'discursive blur' identified in the corridors discourse left space for multiple interpretations of its goals, and arguably enabled contradictory objectives and practices to co-exist under a united, albeit ambiguous corridor conceptualisation. Yet, this blur arguably left space for practice-based improvisations of the policy, such as waste collection and recycling, in which locals re-articulated and shaped the policy in practice, aligning with the corridor's conservation mission in unexpected ways.

Reconciling multiple societal needs including conservation and development, as Costa Rica's biological corridor network aims to do, must address questions about the degree of participation and extent of benefit sharing in the corridor, the environmental risks of activities such as tourism which are encouraged as part of the policy, and the financial limitations faced by locals to implement the policy on the ground in the absence of state support. The Convention on Biological Diversity (CBD) identifies imbalances in biodiversity conservation, sustainable use, and benefit sharing as key future threats (Phang, 2020), which in this corridor still are observed, and remain crucial imbalances to address in global environmental policy such as the upcoming post 2020 global biodiversity framework. The core challenge lies in addressing the complex and multiple concerns by the many stakeholders involved representing varied environmental, societal, economic and political interests to ultimately reconcile needs for people and biodiversity (Phang, 2020). This thesis advocates for the increased inclusion of local situatedness as an integral part of policy planning and implementation, given the fact that locals performed the corridor policy more actively than any other stakeholder group – interpreting and shaping it according to their positions in the corridor field. Therefore, the inclusion of situatedness represents a way to harnessing local values to build and enrich human-nature relations in the corridor.

8.5 Recommendations & suggestions for further research

The present study provided insight into the connections and disconnections between the vision and execution of the ASBC, a mixed-use corridor forming part of Costa Rica's national corridor network (PNBC) and biodiversity conservation policy. Given the findings summarized in the conclusion, the following recommendations and suggestions are made for further research:

8.5.1 Further research into local practices which contributed to conservation

To build on findings of local practices found to align with the conservation vision of the corridor, further research could be conducted targeting specific practices – such as reforestation or waste management activities – to gain a more in depth understanding of the nuances, motivations, and limitations leading to engagement in them. These focused investigations could reveal information to help consolidate existing practices which are contributing to coherence between the vision-execution of the ASBC from the bottom-up. A practice-based approach, ideally integrating field-based ethnographic methods, is encouraged for further research of corridor practices. This is because of its ability to elucidate on local's realities and situatedness, encompassing the diversity of performances and myriad factors which influence them. Given the diversity of practices occurring in the corridor contributing to conservation and community wellbeing, such as community education and outreach projects, sustainable eco-tourism ventures, reforestation and community waste management, there are numerous corridor practices which would benefit from further research. Below, two investigations into specific local practices are recommended:

Farmer performances of reforestation in the ASBC

Practices of reforestation were not performed consistently throughout the corridor. As the ASBC corridor doesn't impose formal or enforceable rules for conservation practices, the choice to reforest is an intriguing topic for further study. Based on the findings of this study it seems only farmers are participating in reforestation, which is logical given their daily livelihood practices centre around cultivation, and reason to focus on further understanding this group specifically. The reasons why some farmers in the ASBC chose to reforest were varied, ranging from emotional and sensory appreciations of nature, feelings of responsibility to future generations, to economic calculations of costs and benefits. No farmers were interviewed who chose not to reforest so the reasons for disengagement with this practice, which are likely related to a variety of economic, practical, and emotional reasons, cannot be stated with certainty. Taking a practice-based approach, the concepts of logic of practice and situated agency could elucidate the reasons for disparate performances of deforestation, such as actors' capacities to act and principles they follow in doing so. The central research question could be: *How do logics of practice and situated agencies lead smallholder farmers to perform reforestation?* This study could be conducted in the ASBC or expanded beyond this corridor and across other corridors in Mesoamerica, in a single case study or even in comparative case analyses. The study could also move beyond reforestation practices in corridors and focus on regions where policy-driven reforestation is taking place, such as PES or agroforestry systems.

Bottom-up practices of waste management in the ASBC

The growing issue of solid waste brought forward by ASBC corridor inhabitants should receive more attention in future studies in order to better understand the issue and provide solutions. What is known so far in the ASBC is that some locals wish to counteract a growing issue associated with migration, urbanisation and development in the corridor. Some grassroots groups, notably AMACOBAS, have risen to the challenge of organizing to ameliorate the issue. But, many questions remain, including deeper cultural aspects and infrastructural limitations underlining practices of waste management, which require further examination. What other individuals/groups perform waste collection and recycling? What motivates them to do it? Where do they do it? What do they need to improve its efficacy? How can the problem of littering be addressed? These are the kind of questions a practice-based approach, guided by the concepts of situated agency and logics of practice, could reveal about waste management in the ASBC. In addition to observing and interviewing ASBC locals, officials from the municipality should be included to understand state perspectives as well. This study should be targeted towards providing practical solutions to enhance current municipal planning with local knowledge, informing how the policy can better adapt to the local context and how the state can better support the community.

8.5.2 A community-centered study of corridor discourses and practices

The present study could be enhanced by addressing some of its limitations, which were, to a significant extent, caused by the travel ban imposed by WU in response to the COVID-19 crisis, which meant that fieldwork was not possible due to travel restrictions at the time of research. This restriction favoured, in turn, a methodological design which inadvertently facilitated the representation of dominant discourses over less dominant, or marginalized ones. Therefore, in order to enhance this research, it is recommended an on-the-ground ethnographic study examining the discourses and practices of the corridor is conducted exclusively for members of the corridor community. On-the-ground research would favour inclusion of all eight corridor communities and break through barriers against a diverse sample of participants. On-the-ground presence would allow for pro-active inclusion of a diverse range of genders, ages, socio-economic differences, and institutional affiliations, which would improve comparison of interest values and performances across the heterogeneous corridor community. The analysis would move beyond examining textual materials in-depth as this study has already done and focus on participant observation in the field. This study would contribute to better understanding the patterns of benefit sharing and exclusion across the communities, which is important given the findings of this project which suggested this is an issue in participation and adherence to the vision.

8.5.3 Reproducing study in other PNBC corridors to compare results

Based on findings from the ASBC, it would be of particular interest to compare the degree of community acceptance and participation across several corridors, given the finding that locals in the ASBC exhibited acceptance, pride and emotional connections to the corridor while other studies found locals were ambivalent towards corridors or rejected them altogether (Goldman, 2009; Finley-Brook, 2007). The study could examine pro- and anti-corridor

discourses, focusing on how corridors are conceptualized and what factors lead to high levels of local acceptance.

8.5.4 Advice to local committee: practical recommendations

Several issues which emerged in the implementation of the ASBC might be brought to corridor management attention, requiring measures to ensure the corridor's environmental and social integrity is not compromised in the future.

Eco-tourism, agricultural and urbanistic developments in the corridor represent a widening of the gap between the policy vision and execution. The goal of increasing habitat connectivity as articulated in the management plan remains largely unmonitored, and reports of littering and uncontrolled housing developments signal these as key threats for the objective of connectivity. Waste management especially seems to be an emerging issue which needs addressing. Recycling and waste collection initiatives are performed by local groups, yet this responsibility is in the jurisdiction of the San Isidro de El General district in Perez Zeledón. The corridor's local committee might consider to: involve locals more in the initiative to drive engagement and participation should also be a management priority for the corridor's local committee. This requires a deliberate effort to include marginalized and vulnerable perspectives and voices in decision-making and the construction of the corridor in the future. Particular attention should be paid to recognizing and preserving local cultural values in future management plans and encouraging systemically marginalized voices to participate in meetings. Practical suggestions to improve social and environmental outcomes include:

Table 5. Practical suggestions for corridor management to improve environmental and social integrity in the ASBC

Environmental	Social
Commission report to monitor environmental degradation in corridor: suggest as research project for Las Nubes or CCT research stations and other research organisations (e.g. UCR), or channel funding for environmental consultancy.	Promote transparency in decision-making to build trust
Support groups such as AMACOBAS involved in informal waste management by offering a platform to promote activities and information exchange	Diversify meeting locations and times for better accessibility, keeping in mind diverse work schedules
Partner with regional organisations with similar interests (e.g. ASADAS) to campaign for improvements in waste management to the municipality	Adopt procedures designed to balance power relations in meetings
Spread information on the corridor to broader community through outreach events, creation of promotional material, use of social media	Foster community dialogue and information exchange through workshops and similar outreach events
Integrate waste management issue in future management planning.	Diversify corridor objectives to include local situatedness
	Possible reports to commission/ further research: mapping locals' sense of place

References

Acuña Prado, E., Molina Jimenez, J., & Rodriguez Vindas, S. (2017). *Análisis de la estructura del paisaje en el corredor biológico Alexander Skutch, Pérez Zeledón, en los años 2005, 2012 y 2016.* Universidad Nacional Costa Rica.

Adams, W. M., Aveling, R., Brockington, D., Dickson, B., Elliott, J., Hutton, J., Roe, D., Vira, B., & Wolmer, W. (2004). Biodiversity conservation and the eradication of poverty. *Science*, *306*(5699), 1146–1149.

Adams, W. M., & Hulme, D. (2001). Forum If community conservation is the answer in Africa, what is the question? *Oryx*, *35*(3).

Agrawal, A., & Gibson, C. C. (1999). Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development*, *27*(4), 629–649.

Allen, K. (2018). Why Exchange Values are Not Environmental Values: Explaining the Problem with Neoliberal Conservation. *Conservation and Society*, *16*(3), 243–256.

Allendorf, T. D., Swe, K. K., Aung, M., & Thorsen, A. (2018). Community use and perceptions of a biodiversity corridor in Myanmar's threatened southern forests. *Global Ecology and Conservation*, *15*.

Anderson, A. B., & Jenkins, C. N. (2006). Applying Nature's Design. *Applying Nature's Design*. Columbia University Press

Ankersen, T. T., Regan, K. E., & Mack, S. A. (2006). Towards a bioregional approach to tropical forest conservation: Costa Rica's Greater Osa Bioregion. *Futures*, *38*(4), 406–431.

Arauz-Beita, I., & Arias-Navarro, A. (2016). Corredores biológicos como potenciadores del desarrollo local: Estudio de caso del corredor biológico Alexander Skutch. *Revista Universidad En Diálogo*, *6*(1), 67–79.

Arts, B., Behagel, J., Turnhout, E., de Koning, J., & van Bommel, S. (2014). A practice-based approach to forest governance ☆. *Forest Policy and Economics*, *49*, 4–11.

Arts, B., Behagel, J., van Bommel, S., de Koning, J., & Turnhout, E. (2012). *Prelude to Practice: Introducing a Practice Based Approach to Forest and Nature Governance*. Springer, Dordrecht.

Arts, B., & Buizer, M. (2009). Forests, discourses, institutions. A discursive-institutional analysis of global forest governance. *Forest Policy and Economics*, *11*(5–6).

Arts, B. J. M., Behagel, J., van Bommel, S., de Koning, J., Turnhout, E., & Pülzl, H. (2013). Forest and Nature Governance: a practice based approach, edited. *Critical Policy Studies*.

Barr, C. M., & Sayer, J. A. (2012). The political economy of reforestation and forest restoration in Asia–Pacific: Critical issues for REDD+. *Biological Conservation*, *154*, 9–19.

Behagel, J. H., Arts, B., & Turnhout, E. (2019). Beyond argumentation: a practice-based approach to environmental policy. *21*(5), 479–491.

Behagel, J. Hendrik. (2012). *The politics of democratic governance: the implementation of the Water Framework Directive in the Netherlands*. Wageningen University.

Behera, B., & Engel, S. (2006). Institutional analysis of evolution of joint forest management in India: A new institutional economics approach. *Forest Policy and Economics*, *8*(4), 350–362.

Bennet, A. F. (2003). *Linkages in the Landscape: The Role of Corridors and connectivity in Wildlife Conservation*. (No. 1). IUCN.

Berkes, F. (2004). Rethinking community-based conservation. In *Conservation Biology, 18(3),* 621–630.

Bevir, M., & Rhodes., R. A. (2005). Interpretation and its Others. *Australian Journal of Political Science*, *40*(2), 169–187.

Bolaños, P. A. (2020). Critical Theory and the Prospects of Radical Democracy. *Kritike*, *14*(2), 19–36.

Bonilla-Carrión, R., & Rosero-Bixby, L. (2000). *Presión demográfica sobre los bosques y Costa Rica.*

Bourdieu, Pierre. (1977). *Outline of a Theory of Practice*. Cambridge University Press.

Bourdieu, Pierre. (1990). *The logic of practice*. Polity Press.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Brockett, C. D., & Gottfried, R. R. (2002). State Policies and the Preservation of Forest Cover: Lessons from Contrasting Public-Policy Regimes in Costa Rica. *Latin American Research Revieiw,* 37(1).

Brockington, D. (2002). Fortress Conservation : The Preservation of the Mkomazi Game Reserve , Tanzania. *The International Journal of African Historical Studies*, *35*(2), 2–5.

Brodie, J. F., Paxton, M., Nagulendran, K., Balamurugan, G., Clements, G. R., Reynolds, G., Jain, A., & Hon, J. (2016). Connecting science, policy, and implementation for landscape-scale habitat connectivity. *Conservation Biology*, *30*(5), 950–961.

Bueger, C. (2013). *Pathways to practice: praxiography and international politics*. European political science review, 6(3), 383-406.

Büscher, B., & Dressler, W. (2007). Linking Neoprotectionism and Environmental Governance : On the Rapidly Increasing Tensions between Actors in the Environment-Development Nexus. *Conservation and Society*, *5*(4), 586–611.

Busenberg, G. (2004). Wildfire Management in the United States: The Evolution of a Policy Failure. *Review of policy research*, *21*(2), 145-156.

Butler, J. (1997). *Excitable speech: A politics of the performative*. Routledge.

Callion, S., Cullman, G., Verschuuren, B., & Sterling, E. J. (2017). Moving beyond the human–nature dichotomy through biocultural approaches: including ecological well-being in resilience indicators. *Ecology and Society*, *22*(4).

Canet-Desanti, L. (2005). Ficha Técnica para el Diseño y Oficialización del Corredor Biológico Alexander Skutch. *Centro Cientifico Tropical - Red de Pequeñas Reservas.*

Canet-Desanti, L., Herrera, B., & Finegan, B. (2012). Efectividad de Manejo en Corredores Biológicos: El Caso de Costa Rica. *Revista Parques*, *2*(October 2016), 1–14.

Chazdon, R. L., Brancalion, P. H. S., Lamb, D., Laestadius, L., Calmon, M., & Kumar, C. (2017). A Policy-Driven Knowledge Agenda for Global Forest and Landscape Restoration. *Conservation Letters*, *10*(1), 125–132.

Chazdon, R. L., Harvey, C. A., Komar, O., Griffith, D. M., Ferguson, B. G., Martínez-Ramos, M., Morales, H., Nigh, R., Soto-Pinto, L., van Breugel, M., & Philpott, S. M. (2009). Beyond Reserves: A Research Agenda for Conserving Biodiversity in Human-modified Tropical Landscapes. *Biotropica*, *41*(2), 142–153.

Cleaver, F. D., & Franks., T. R. (2005). How institutions elude design: river basin management and sustainable livelihoods. *Bradford: Bradford Centre for International Development*.

Cook, N., & Wagenaar, H. (2011.). *The* push and pull of the world: how experience animates practice. *Evidence & Policy: A journal of research, debate and practice,* 7(2), 193-212.

Costa, R. L. (2006). The logic of practices in Pierre Bourdieu. *Current Sociology*, *54*(6), 873–895.

Curato, N. (2012). Respondents as Interlocutors: Translating Deliberative Democratic Principles to Qualitative Interviewing Ethics. *Qualitative Inquiry*, *18*(7), 571–582.

Daugherty, H. (2005). Biodiversity conservation and rural sustainability: a case study of the Alexander Skutch Biological Corridor in Southern Costa Rica. *WIT Transactions on Ecology and the Environment*, *81*, 155–161.

Dean, M. (1999). *Governmenality.* Sage.

DeClerck, F. A. J., Chazdon, R., Holl, K. D., Milder, J. C., Finegan, B., Martinez-Salinas, A., Imbach, P., Canet, L., & Ramos, Z. (2010). Biodiversity conservation in human-modified landscapes of Mesoamerica: Past, present and future. *Biological Conservation*, *143*(10), 2301–2313.

Dryzek, J. S. (2013). *The politics of the earth: Environmental discourses*. Oxford University Press.

Echols, A., & Campbell, K. (2019). Private Lands Review Broadening Conservation Funding. *Wildlife Society Bulletin*, *43*(3), 372–381.

Elbers, J. (2011). *Las áreas protegidas de América Latina: Situación actual y perspectivas para el futuro*. IUCN.

Ervine, K. (2010). Participation Denied: the Global Environment Facility, its universal blueprint, and the Mexico-Mesoamerican Biological Corridor in Chiapas. *Third World Quarterly*, *31*(5), 773–790.

Finley-Brook, M. (2007). Green neoliberal space: The Mesoamerican Biological Corridor. *Journal of Latin American Geography*, *6*(1), 101–124.

Fischer, F., & Forester, F. (1993). The argumentative turn in policy analysis and planning. In *The Arguementative Turn in Policy Analysis and Planning*. Duke University Press.

Fletcher, R. (2010). Neoliberal environmentality: Towards a poststructuralist political ecology of the conservation debate. *Conservation and Society*, *8*(3), 171–181.

Fletcher, R., & Breitling, J. (2012). Market mechanism or subsidy in disguise? Governing payment for environmental services in Costa Rica. *Geoforum*, *43*(3), 402–411.

Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, *12*(2), 219–245.

Foucault, M. (2008). *The Birth of Biopolitics: Lectures at the Collège de France, 1978-1979* (A. Davidson & G. Burchell, Eds.).

Gardner, T. A., Barlow, J., Chazdon, R., Ewers, R. M., Harvey, C. A., Peres, C. A., & Sodhi, N. S. (2009). Prospects for tropical forest biodiversity in a human-modified world. *Ecology Letters*, *12*, 561–582.

Geddes, A., Parker, C., & Scott, S. (2018). Networking in Qualitative Social Research. *International Journal of Social Research Methodology*, *21*(3), 347–358.

Gee, J. (2014). *An Introduction to Discourse Analysis: Theory and Method* (fourth ed.). Routledge.

GIZ. (2019). *Biological Corridors Project: Implementation of the National Program of Biological Corridors within the framework of the National Biodiversity Strategy*.

Goldman, M. (2009). Constructing Connectivity: Conservation Corridors and Conservation Politics in East African Rangelands. *Annals of the Association of American Geographers*, *99*(2), 335–359.

Gorenflo, L. (2016). Beyond protected areas: defining a new geography for biodiversity conservation. In A. A. Aguirre & R. Sukumar (Eds.), *Tropical Conservation: Perspectives on Global and Local Priorities.* (pp. 7–28). Oxford University Press.

Grandia, L. (2007). Between Bolivar and Bureaucracy The Mesoamerican Biological Corridor. *Conservation and Society*, *5*(4), 478–503.

Hajer, M. A. (1993). Discourse Coalitions and the Institutionalization of Practice. In *The Argumentative Turn in Policy Analysis and Planning* (pp. 43–76).

Hajer, M., & Versteeg, W. (2005). A decade of discourse analysis of environmental politics: Achievements, challenges, perspectives. *Journal of Environmental Policy and Planning*, *7*(3), 175–184.

Harvey, C. A., Chacón, M., Donatti, C. I., Garen, E., Hannah, L., Andrade, A., Bede, L., Brown, D., Calle, A., Chará, J., Clement, C., Gray, E., Hoang, M. H., Minang, P., Rodríguez, A. M., Seeberg-Elverfeldt, C., Semroc, B., Shames, S., Smukler, S., … Wollenberg, E. (2014). Climate-Smart Landscapes: Opportunities and Challenges for Integrating Adaptation and Mitigation in Tropical Agriculture. *Conservation Letters*, *7*(2), 77–90.

Harvey, C. A., Komar, O., Chazdon, R., Ferguson, B. G., Finegan, B., Griffith, D. M., Mart, M., Morales, H., Nigh, R., Soto-pinto, L., van Breugel, M., Wishnie, M., Sur, F., Casas, S. (2008). Integrating Agricultural Landscapes with Biodiversity Conservation in the Mesoamerican Hotspot. *Conservation Biology*, *22*(1), 8–15.

Hausmann, A., Slotow, R., Burns, J. K., & di Minin, E. (2016). The ecosystem service of sense of place: benefits for human well-being and biodiversity conservation. *C Foundation for Environmental Conservation*, *43*(2), 117–127.

Hickey, S., & Mohan, G. (2005). Relocating Participation within a Radical Politics of Development. *Development and Change*, *36*(2), 237–262.

Hill, C. J. (2007). *The Ambiguities of Sustainable Development and Conflicts Within Environmental Governance in Central America: The Case of the Mesoamerican Biological Corridor*.

Hogl, K. (2013). Review of "forest and nature governance: a practice based approach." *Int. For. Rev*, 140–141.

Honey, M. (2008). *Ecotourism and Sustainable Development, Second Edition: Who Owns Paradise?* (Vol. 38). Island Press.

Horton, L. R. (2009). Buying Up Nature Economic and Social Impacts of Costa Rica's Ecotourism Boom. *Latin American Perspectives*, *166*(3), 93–107.

Igoe, J., & Brockington, D. (2007). Neoliberal Conservation: A Brief Introduction. *Conservation and Society. 5*(4), 432–449.

INEC. (2011). *Censo Poblacional de Costa Rica*.

Jara, J. V., & González Calvo, H. (1987). Movimientos Migratorios Internos En Costa Rica: Censo de Población 1984. *Revista ABRA*, *7–8*, 245–280.

Jones, G., & Spadafora, A. (2017). Creating Ecotourism in Costa Rica, 1970–2000. *Enterprise & Society*, *18*(1), 146–183.

Keeley, A. T. H., Basson, G., Cameron, D. R., Heller, N. E., Huber, P. R., Schloss, C. A., Thorne, J. H., & Merenlender, A. M. (2018). Making habitat connectivity a reality. *Conservation Biology*, *32*(6), 1221–1232.

Koens, J. F., Carel Dieperink,, & Miranda, M. (2010). Ecotourism as a development strategy: experiences from Costa Rica. *Environment Development Sustainability*, *11*, 1225–1237.

Krause, T., Collen, W., & Nicholas, K. A. (2013). Evaluating Safeguards in a Conservation Incentive Program: Participation, Consent, and Benefit Sharing in Indigenous Communities of the Ecuadorian Amazon. *Ecology and Society, 18(4)*

Kremen, C., & Merenlender, A. M. (2018). Landscapes that work for biodiversity and people. *Science*, *362*(6412).

Krott, M., & Giessen, L. (2014). Learning from practices - Implications of the "practice-based approach" for forest and environmental policy research. In *Forest Policy and Economics*, 49, 12-16.

Laclau, E., & Mouffe, C. (1985). *Hegemony and Socialist Strategy*. London: Verso.

Latawiec, A. E., Strassburg, B. B. N., Brancalion, P. H. S., Rodrigues, R. R., & Gardner, T. (2015). Creating space for large-scale restoration in tropical agricultural landscapes. *Frontiers in Ecology and the Environment*, *13*(4), 211–218.

Law, J., & Urry, J. (2004). Enacting the social. *Economy and Society*, *33*(3), 390–410.

Leipold, S. (2014). Creating forests with words — A review of forest-related discourse studies. *Forest Policy and Economics*, *40*, 12–20.

Lemos, M. C., & Agrawal, A. (2006). Environmental governance. *Annual Review of Environment and Resources*, *31*(1), 297–325.

Liftin, K. (1994). *Ozone discourses: science and politics in global environmental cooperation*. Columbia University Press.

Lincoln, Y. S., & Cannella, G. S. (2004). Dangerous discourses: Methodological conservatism and governmental regimes of truth. In *Qualitative Inquiry,* 10(1), 5-14.

Lombard, A., Cowling, R., Vlok, J., & Fabricius, C. (2010). Designing conservation corridors in production landscapes: assessment methods, implementation issues, and lessons learned. *Ecology and Society*, *15*(3).

Maanen, J., Sørenson, J., & Mitchell, T. (2007). he interplay between theory and method (editors introduction to special topic forum). *Academy of Management Review*, *32*(4), 301–314.

MacLean, L., Posner, E., Thomson, S., & Jean Wood, E. (2008). *"Research Ethics and Human Subjects: A Reflexive Openness Approach" Final Report of Qualitative Transparency Deliberations Working Group 1.2*.

Martinez, A. M., & Montoya-Greenheck, F. (2021). The Socioecological Evolution Of a Biological Corridor: A 15-year Case Study Of the Alexander Skutch Biological Corridor in Southern Costa Rica. *Journal of Rural and Community Development*, *16*(1).

McAfee, K. (1999). Selling nature to save it? Biodiversity and the rise of green development planning. *Enviornment and Planning D*, *17*(2), 133–154.

McAfee, K., & Shapiro, E. N. (2010). Payments for ecosystem services in Mexico: Nature, neoliberalism, social movements, and the state. *Annals of the Association of American Geographers*, *100*(3), 579–599.

McShane, T. O., Hirsch, P. D., Trung, T. C., Songorwa, A. N., Kinzig, A., Monteferri, B., Mutekanga, D., van Thang, H., Dammert, J. L., Pulgar-Vidal, M., Welch-Devine, M., Brosius, J. P., Coppolillo, P., & O'connor, S. (2010). Hard choices: Making trade-offs between biodiversity conservation and human well-being. *Biological Conservation*, 144, 966–972.

MINAE. (2016). *Estrategia Nacional de Biodiversidad 2016-2025, Costa Rica.* Retreived from https://www.enbcr.go.cr/sites/default/files/estrategia_nacional_biodiversidad_2017.pdf

Miranda Quiros, M. (2003). Institutional Capacities for Sustainable Progress: Experiences from Costa Rica. *Netherlands Geographical Studies. Utrecht University Denmark.*

Noy, C. (2008). Sampling Knowledge: The Hermeneutics of Snowball Sampling in Qualitative Research. *International Journal of Social Research Methodology*, *11*(4), 327–344.

Ormston, R. (2014). The Foundations of Qualitative Research. In J. et al Ritchie (Ed.), *Qualitative Research Practice: A guide for Social Science Students and Researchers*. Sage.

Ortiz Imlach, M., & Montoya Greenheck, F. (2014). *What does it mean to be peasant in the Alexander Skutch Biological Corridor? Struggles and hopes of the ASBC peasant communities.* Doctoral Thesis, York University.

Patel, R. (2021). Paper plans and possibility: A critical analysis of landscape conservation policy in the Mesoamerican Biological Corridor. *Environmental Development*, *37*.

Rands, M. R. W., Adams, W. M., Bennun, L., Butchart, S. H. M., Clements, A., Coomes, D., Entwistle, A., Hodge, I., Kapos, V., Scharlemann, J. P. W., Sutherland, W. J., & Vira, B. (2010). Biodiversity conservation: Challenges beyond 2010. *Science*, *329*(5997), 1298–1303.

Rapley, T. (2018). *Doing Conversation, Discourse and Document Analysis.* Sage.

Rapson, A. (2008). *A Landscape Analysis of Forest Loss and Land Cover Change, 1998-2008 in the Alexander Skutch Biological Corridor, Costa Rica.* York University.

Rapson, A., Bunch, M., & Daugherty, H. (2012). A decade of change: Assessing forest cover and land use trends in the Alexander Skutch Biological Corridor, Costa Rica. *Latin American Journal of Conservation*, *2*(1), 37–46.

Reed, J., van Vianen, J., Deakin, E. L., Barlow, J., & Sunderland, T. (2016). Integrated landscape approaches to managing social and environmental issues in the tropics: learning from the past to guide the future. *Global Change Biology*, *22*(7), 2540–2554.

Ritchie, J., & Lewis, J. (2003). *Qualitative research practice: a guide for social science students and researchers*. London and Thousand Oaks: Sage Publications.

Robson, E. (1997). Postgraduate Fieldwork in Developing Areas: A Rough Guide. In E. Robson & K. Willis (Eds.), *Postgraduate Fieldwork in Developing Areas: A Rough Guide.* (pp. 51–74). Developing Areas Research Group, Royal Geographical Society.

Roth, R. J., & Dressler, W. (2012). Market-oriented conservation governance: The particularities of place. *Geoforum*, *43*(3), 363–366.

Sanchez-Azofeifa, A., Pfaff, A., Robalino, J. A., & Boomhower, J. P. (2007). Costa Rica's Payment for Environmental Services Program: Intention, Implementation, and Impact. *Conservation Biology*, *21*(5), 1165–1173.

Sayer, J., Sunderland, T., Ghazoul, J., Pfund, J. L., Sheil, D., Meijaard, E., Venter, M., Boedhihartono, A. K., Day, M., Garcia, C., van Oosten, C., & Buck, L. E. (2013). Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. *Proceedings of the National Academy of Sciences of the United States of America*, *110*(21), 8349–8356.

Schatzki, T. R., Cetina, K. K., & Savigny, E. von. (2001). *The practice turn in contemporary theory*. Routledge.

Shapiro-Garza, E. (2013). Contesting the market-based nature of Mexico's national payments for ecosystem services programs: Four sites of articulation and hybridization. *Geoforum*, *46*, 5–15.

SINAC. (2008). *Sistema Nacional de Áreas de Conservación SINAC. 2008. "Guia práctica para el diseño, oficialización y consolidación de corredores biológicos en Costa Rica".* (Issue November).

SINAC. (2018). Plan de Gestión del Corredor Biológico Alexander Skutch de Costa Rica. In *Proyecto GIZ: Implementación del PNCB en el marco de la Estrategia Nacional de Biodiversidad de Costa Rica, PN 12.9218.4-001.00, 99.*

SINAC, & GIZ. (2018). *Plan de Gestión del Corredor Biológico Alexander Skutch de Costa Rica. Proyecto Implementación del Programa Nacional de Corredores Biológicos en el marco de la Estrategia Nacional de Biodiversidad de Costa Rica.*

Soedirgo, J., & Glas, A. (2020). Toward Active Reflexivity: Positionality and Practice in the Production of Knowledge. *PS: Political Science & Politics*, *53*(3), 527–531.

Solís Rivera, V., Madrigal Cordero, P., Ayales Cruz, I., & Fonesca Borras, M. (2002). The Mesoamerican Biological Corridor and local participation. *Parks*, *12*(2).

Spiteri, A., & Nepal, S. K. (2006). Incentive-Based Conservation Programs in Developing Countries: A Review of Some Key Issues and Suggestions for Improvements. *Environmental Management*, *37*(1), 1–14.

Stem, C. J., Lassoie, J. P., Lee, D. R., & Deshler, D. J. (2010). How "Eco" is Ecotourism? A Comparative Case Study of Ecotourism in Costa Rica. *Journal of Sustainable Tourism* .

Turnhout, E., Waterton, C., Neves, K., & Buizer, M. (2013). Rethinking biodiversity: from goods and services to "living with." *Conservation Letters*, *6*(3), 154–161.

Valentine, G. (2005). *"Tell me about...: using interviews as a research methodology" In Methods in Human Geography: A Guide for Students Doing a Research Projects*. Pearson Education Limited.

Valverde Costa, R., & Quesada-Román, A. (2018). Conservation Strategies, Protected Sreas, and Ecotourism ion Costa Rica. *Journay of Park and Recreation Administration*, *36*, 115–128.

West, S., Cairns, R., & Schultz, L. (2016). What constitutes a successful biodiversity corridor? A Q-study in the Cape Floristic Region, South Africa. *Biological Conservation*, *198*, 183–192.

Wetherell, M., Taylor, S., & Yates, S. J. (2001). *Discourse Theory and Practice: A reader*. Sage.

Worboys, G., Francis, W. L., & Lockwoood, M. (2010). *Connectivity conservation management: a global guide (with particular reference to mountain connectivity conservation).* (Earthscan).

Yanow, D. (2006). *Interpretation and method: Empirical research methods and the interpretive turn.*Routledge.

Yin, R. (2009). *Case study research: Design and methods (Sage, Vol. 5)*.

Zambrano, A. M. A., Broadbent, E. N., & Durham, W. H. (2010). Social and environmental effects of ecotourism in the Osa Peninsula of Costa Rica: The Lapa Rios case. *Journal of Ecotourism*, *9*(1), 62–83.

APPENDICES

A. Interview questions

Part I: Ice Breakers

¿Cómo se llama usted y cual es su oficio? (What is your name and occupation?)
¿Dónde vive y cuánto tiempo ha vivido allí? (How long have you lived in the area?)
¿Ha escuchado hablar del Corredor Biológico Alexander Skutch (COBAS)?, y ¿cómo lo describiría? (Have you heard about COBAS? And how would you describe it?)
¿Qué le gusta de vivir dentro del corredor? ¿Qué no le gusta? (What do you like about living in the corridor? What don't you like?)

Part II: Probing and situating MEANINGS behind visions (objectives)

¿Cómo le gustaría a usted que llegara a ser el COBAS? ¿Qué objetivos pondría usted para el corredor? (How would you like the corridor to be? What objectives would you place for the corridor?)
¿Cómo definiría usted/ **para usted que significa** "…"? (significado de objetivos que han hablado) (How would you define …)
¿Conoce los objetivos (oficiales) del COBAS y qué piensa usted de estos objetivos? (Do you know what are the objectives of COBAS and what do you think of these objectives?)
¿Cómo definiría usted/ para usted que significa "…" ?

Part III: Probing and situating ACTIVITIES behind visions (objectives)

¿Cómo contribuye usted a los objetivos del COBAS? (How do you contribute to the objectives of the corridor?)
¿Por qué contribuye usted de esta manera? (Why do you contribute in this way?)
... si no, **¿Por qué no?** (if not, why not?)"
(if time allows) **¿De que (otras) actividades es usted consciente que contribuyen a los objetivos del corredor?** (What (other) activities are you aware of in the corridor which contribute to its objectives?)
¿Quienes son las personas involucradas? (What persons are involved?)
¿Usted siente que hay objetivos (o activdades) que toman prioridad, o dominan en el corredor? ¿Por qué cree que pasa? (Do you feel there are some objectives (or activities) that have taken precedence over others in the corridor? Why does this happen?)

Part IV: Linking vision (meaning) to execution (activity) -> how are objectives PERFORMED?

¿Cree que se están cumpliendo los objetivos (/ideales) del corredor? (Do you believe the corridor objectives (/ideals) are being met?)
¿Cree usted que con la creación del COBAS se ha transformado/ha cambiado/ ha mejorado …
el paisaje/ la conservación de la naturaleza/las actividades socio-economicas/ el bienestar de las comunidades (the landscape, nature conservation, community wellbeing…)
¿Cómo? (How?)
Las nuevas oportunidades han sido equitativas para todos? (Have opportunities for people been equal for everyone?)
¿Qué cree usted que hace falta para que se cumplan esos ideales(/objetivos)? (What do you think is missing for these ideals to be met?
(if time allows) **¿Usted piensa que ocurren actividades en conflicto con los objetivos del corredor?** (Do you think there are activities occurring which are in conflict with the objectives of the corridor?)
¿Que opina de estas actividades? (What is your opinion of these?)

Part V: Final remarks

23. **¿Hay algo mas que le gustaría contarme acerca del tema?** (Is there anything else you would like me to know?)

B. Documents selected for analysis

Appendix Table B. List of key documents contributing to the discourse of the Alexander Skutch Bioloigcal Corridor, by time period. The time periods relate to key events in the timeline of the corridor for this study, from its initial inception in 1999, official recognition in 2006 and the current management plan published in 2018. The right-hand corridor indicates key sector group affiliation to the document, based on authorship.

Year	Authors	Title	Sector affiliation(s)
1999- 2005: PRE-DESIGNATION ERA			
2005	Canet-Desanti (*CCT, Red de Pequeñas Reservas*)	Ficha Técnica para el Diseño y Oficialización del Corredor Biológico Alexander Skutch.	NGO; State & affiliated
2005	Daugherty *(York University)*	Biodiversity conservation and rural sustainability: A case study of the Alexander Skutch Biological Corridor in Southern Costa Rica.	Academia
2006-2017: POST-DESIGNATION DEVELOPMENT ERA			
2008	Rapson *(York University)*	A Landscape Analysis of Forest Loss and Land Cover Change, 1998-2008 in the Alexander Skutch Biological Corridor, Costa Rica.	Academia
2012	Rapson et al. *(York University)*	A decade of change: Assessing forest cover and land use trends in the Alexander Skutch Biological Corridor, Costa Rica.	Academia
2016	Arauz-Beita & Arias-Navarro *(Universidad Nacional)*	Corredores biológicos como potenciadores del desarrollo local: Estudio de caso del corredor biológico Alexander Skutch.	Academia
2017	Acuña Prado et al.	Análisis de la estructura del paisaje en el corredor biológico Alexander Skutch, Pérez Zeledón, en los años 2005, 2012 y 2016.	Academia
2018-PRESENT: CURRENT MANAGEMENT PLAN ERA			
2018a	SINAC/PNBC; GIZ	Plan de Gestión del Corredor Biológico Alexander Skutch de Costa Rica.	State & affiliated
2018b	SINAC/PNBC; GIZ	Plan Estratégico 2018-2025 del Programa Nacional de Corredores Biológicos de Costa Rica (Informe Final).	State & affiliated
2018	AMACOBAS	Mujeres Activas del Corredor Biológico Alexander Skutch (AMACOBAS). Fuente de Vida y Cultura. Project Report	Community
2018	Jimenez Monge *(York University)*	Environmental problem-solving: An application of institutional theory and systems thinking to the Alexander Skutch Biological Corridor.	Academia
2019	GIZ	Biological Corridors Project. Implementation of the National Program of Biological Corridors within the framework of the National Biodiversity Strategy.	State & affiliated
2022	CCT	Centro Científico Tropical. Our Programmes. Retreived March 2022	NGO
2022	CCT	Centro Científico Tropical. Our Protected Areas. Retreived March 2022	NGO
2022	GIZ/ PNBC/ UCR/ CCT	Proyecto Corredores Biologicos. Corredor Biologico Alexander Skutch	State & affiliated; NGO; Academia
2021	Martinez and Montoya (*York University*)	The Socioecological Evolution of a Biological Corridor: A 15-year Case Study of the Alexander Skutch Biological Corridor in Southern Costa Rica	Academia

C. 2018 Management Plan Objectives

Outlines, in Spanish, the corridor mission, general objective, vision, and values. From SINAC, 2018(a) p23

9. MISIÓN DEL CORREDOR BIOLÓGICO

- Conservar la biodiversidad y contribuir con el mejoramiento de la calidad de vida de los pobladores del Corredor Biológico Alexander Skutch.

10. OBJETIVO GENERAL DEL CORREDOR BIOLÓGICO

- Mantener la conectividad biológica entre las Áreas Silvestres Protegidas Parque Nacional Chrripó, Reserva Biológica Las Nubes, Santuario de Aves Neotropicales Los Cusingos y los bosques remanentes de la Zona de Amortiguamiento de la Reserva de la Biosfera La Amistad.

11. VISIÓN DEL COBAS

- Todas las nacientes, zonas de recarga acuífera, ríos y quebradas ubicadas en el área del Corredor Biológico Alexander Skutch se encuentran protegidas y manejadas so teniblemente.
- Todos los pobladores valoran positivamente y participan en la protección de los recursos pr sentes en el Corredor Biológico.
- Toda la producción se ejecuta de acuerdo a la capacidad de uso del suelo, y se cuenta y eje uta un plan regulador que ordena el crecimiento de las comunidades.
- Los desechos líquidos y sólidos son manejados adecuadamente.
- La conectividad biológica se ha restablecido.
- Se ha conservado y valorado el patrimonio arqueológico existente en el COBAS.
- Las familias que habitan en el Corredor Biológico ejecutan actividades económicas y abiertamente sostenibles que garanticen su bienestar y posibilitan el crecimiento personal.

12. VALORES DEL COBAS

- Nuestro trabajo se basa en la búsqueda de la integración entre el ser humano y la naturaleza, mediante el desarrollo de una conciencia social y ambiental, que promueva el mejoramiento de la calidad de vida de los pobladores del Corredor Biológico.
- Creemos en el trabajo para producir bienestar y una producción ambientalmente sostenible.
- Valoramos la responsabilidad y el compromiso en nuestro trabajo.
- Consideramos que todo ser vivo tiene derecho a vivir y ser protegido.
- Impulsamos la innovación y la investigación como un medio para el logro de nuestros fines.
- Defendemos el derecho que todos tienen al disfrute a plenitud de los recursos ambientales.

D. Coding criteria:

D1. Deductive codes – sensitising concept handles

Descriptions and handles for sensitising concepts from conceptual framework

ARTICULATION OF SOCIAL DEMANDS	POLITICAL RATIONALITIES	SITUATED AGENCY	LOGIC OF PRACTICE	PERFORMATIVITY
definition				
meaning is shaped (Lacalu & Mouffe, 1985) meanings discussed or contested (Glynos & Howarth 2007) **interest values** created through production and reporduction of language demands either claimed or requested (Laclau, 2005) authority established, legitimacy created, accountability assessed (Behagel, 2012)	Narrative & argumentation actors align themselves according to interests and realities (Fischer & Forester, 1993) ...in competition with one-another distinct ways of seeing/percieving, thinking/ questioning, acting/intervening through use of particular strategy (Dean, 1999) *conceptualises power as hegemonic	choices which are available given the context what drives change is capacities to improvise & practices in which actors are situated (rather than strategic, rational individualism) a *challenge to rational choice* thinking: individual is situated > autonomous; apprehension > knoweldge; expressing capabilities > maximising gains; experiential > rational CONTEXT > AUTONOMY (social reality limits choice) **settings/ context**: (Arts et al 2013) social -- networks and organisations discursive -- language, discourse material -- bodies, artifacts, nature ideas, behaviours and identities of actors are largely determined by traditions, rules and discourses that are LOCAL (Arts et al 2013)	generative principles internal to practice >> external institutions, incentives, rules, norms (Bordieau, 1990) practical knowledge, local understanding, routine behaviour, collective sense making (Arts et al., 2013) have been **formed historically through time & space** can be conflicting, existing side-by-side (Costa, 2006) principles organise the doings, sayings, things **the 'thinking' behind the activity** local/practical knowledge & understandings routine behaviours captures improvisations (cannot be controlled, predicted) & scripts (cannot be changed overnight) = intrinsic unpredictability a *challenge to institutional* thinking: routines> rules; implicit > explicit; assumptions; internal logic>external/imposed	meaning in action (Wagenaar, 2001) explains how discourses will influence the way we act upon world, therefore has **material impacts** when meaning enters realm of reality 'discourses and knowledge constitute the reality they describe' (Law, 2009) critically scrutinises discourses and systems of knowledge operating in practices 'how discourses and knowledge are shaped, produced, and reproduced represent universal and objective reality' (Arts 2013) the way one undestands the world influences the way one acts on the world a *challenge to discourse* meaning in action > meaning; process > structure; based on repetition > based on exclusion; political identity > political economy *conceptualises power as performative
handles				
how is corridor defined, described what objectives are stated how are objectives defined, described conceptualisation of corridor	why is corridor important? why are objectives important? why is corridor a good solution? framing of issue/solution what do/dont you like about the corridor? why how would you like corridor to be & WHY (?)	What actors are able to do in this context Expression of capabilities and limitations in COBAS Why activities occur the way they do in the corridor - why do some dominate and others are ignored? how would you like corridor to be (?)	Why actors behave the way they do what actors know influcence their & others behaviours in corridor (e.g. internal thinking/ understanding/ knowledge)	what activities/actions exist in the corridor how is the practice of the policy performed What has changed in the corridor activities contribute to objectives, vision? how do individuals and/or organisations perform objectives in corridor? (/contribute or not) production, reproduction or transformation of objectives in action - showing what was gained and lost

D2. Inductive codes

Corridor objectives: categories for Table 3

Supplementary Table 3. Explanations and criteria for categorisation of articulated objectives in the ASBC. (Please note the categories were created by the author to help identify and clarify themes, however, are non-exclusive and entwined with each other given the nature of the open-ended interview style. Coloured *** show where there are overlaps)		
Code Categorisation		Criteria
for Nature		
	*Nature conservation **	Explicit use of words 'nature,' 'conservation' 'protection' and similar; and/or mentions of the environment and natural elements such as flora and fauna, ecosystems, landscape elements, and environmental issues such as climate change, recycling & waste management.
	"Connectivity"	While connectivity is a part the above code *nature conservation*, explicit mentions of connectivity are distinguished as it is more specific to the corridor concept.
	Scientific investigation	Similar to connectivity, highlighting explicit mentions of scientific investigation or monitoring distinguish these objectives from simply 'conserving' nature.
	*Environmental awareness**	When objectives articulated refer to improving environmental awareness, this includes references to environmental education, consciousness, and awareness.
for Development		
	Economic growth	When objective explicitly uses words 'economic' 'growth' or 'development' and other economic and market terminology. Includes mentions of wealth and income generation, economic incentives, investment, aid ("ayudas"), and promoting small business ventures.
	Production	When the economic objective is specifically agricultural or livestock production.
	Tourism	When the economic incentive is specifically related to tourism, eco-tourism, or student visitation.
	*"Sustainability" ***	When the word "sustainability" is explicitly used, or references to finding a 'balance' or 'equality' between development, society, and nature.
for Community wellbeing		
	*Quality of life **	References to improvement of the quality of life of the human inhabitants. Includes references to wellbeing, health, and protection and enhancement of cultural and sensory elements.
	*Ecosystem services (ES) ***	When the technical term 'ES' is used
	Community involvement	When objective references improving participation and cooperation with communities in the corridor initiative.

D3. Corridor activities: categories for Table 4

Supplementary Table 4. Explanations and criteria for categorisation of performed activities in the ASBC. (Please note the categories were created by the author to help identify and clarify themes, however, are non-exclusive and entwined with each other given the nature of the open-ended interview style.		
Code Categorisation		Criteria
for Nature		
	Sustainable agriculture	Use of the word sustainable, organic, shade coffee, community greenhouses, small-scale production of herbs and spices, fruiting trees
	Reforestation	Mentions of tree planting, restoring, rewilding, connectvity
	Scientific investigation	Mentions of monitoring, university investigations,
	Hunting	Mentions of hunting
	Waste management	Mentions of rubbish in the streets, organising and collecting rubbish, recycling
for Development		
	Agricultural production	Mentions of continued damaging practices – use of pesticides, herbicides, chemical fertilisers, monocultures, land clearing for cattle. Intensive systems aimed at maximising productivity.
	Tourism	Mentions of eco-tourism, agr-tourism, student tourism. Mentions of selling artisanal products, farming experiences, museum visits – business ventures related to tourism
for Community inclusion		
	Participatory management	Mentions of management meetings, local participation, local committee, mentions of partnerships, community corridor planning
	Capacity building	Mentions of guides, tools for improved management and practices, technical support
	Environmental education	Promoting taking care of nature, environmental consciousness, culture, mentalities, workshops

E. Stakeholder quotes: corridor objectives

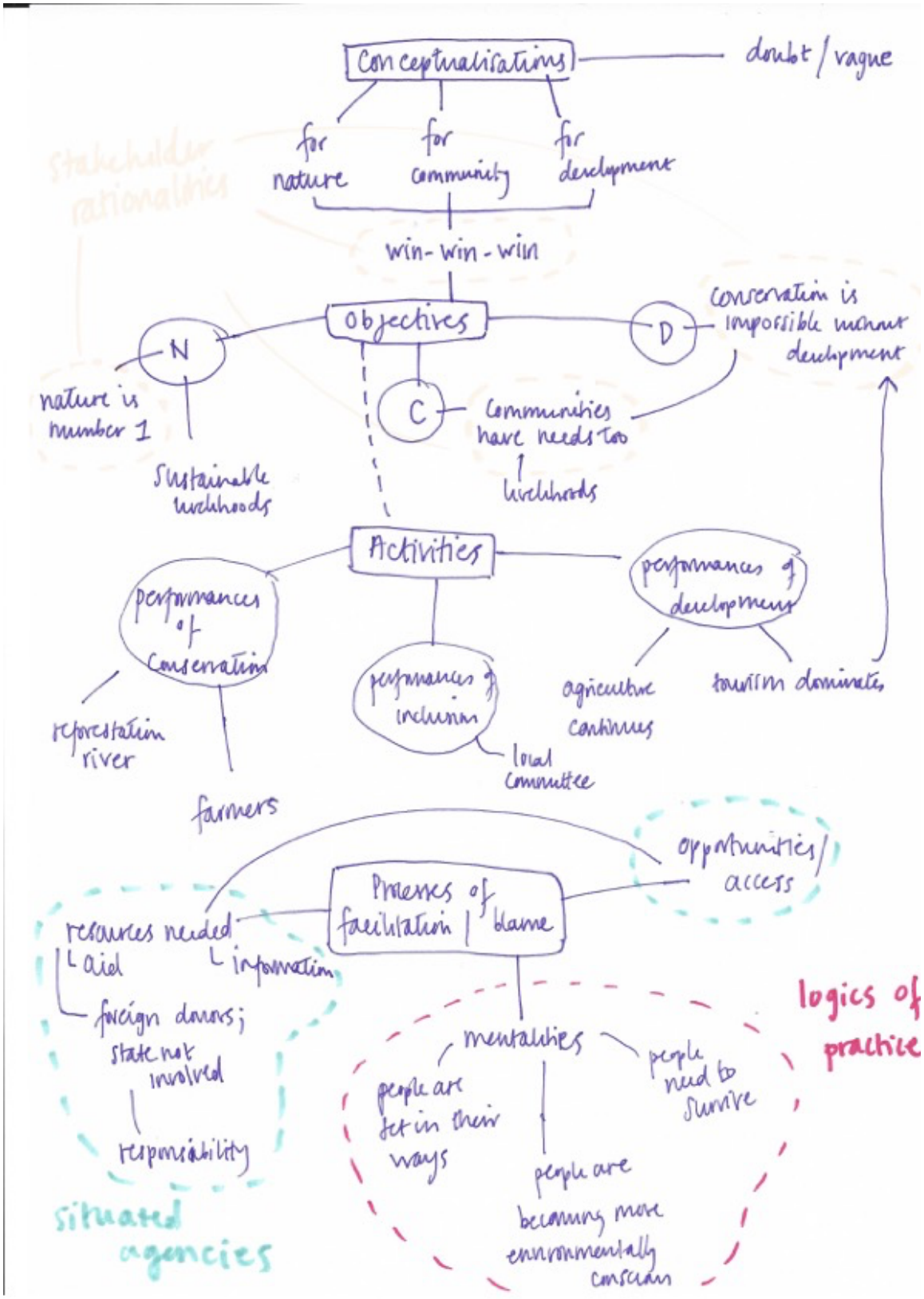
Table x. ASBC objectives statements by stakeholders. Blue quotes mark prompted responses to question; black marks comments which emerged from conversation; text in italics indicates researcher notes/observations..			
Stakeholder	Quotes related to objectives.	**Nature conservation most important (C=connectivity)**	**Interest values**
Sector: State & state affiliated			
PNBC representative	"…more than objectives of the corridor, I think of strategy of the corridor" "We want to conserve biodiversity and ecosystem services" "it's a way to minimise impacts on protected areas, but also to look for ways to improve the quality of life of the inhabitants" "The number one objective is connectivity, to connect protected areas" "…more than objectives of the corridor, I think of strategy of the corridor"	**C**	**Biodiversity conservation** **Ecosystem services** **Quality of life**
MINAE representative	"The objectives were conceived of to include different interests. Threats are identified, but people's opinions are also addressed" "…we have to improve cattle ranching for example. We must improve livestock practices to make them more productive. If we make them more productive, we will have less impact on the river basin." "The objectives were conceived of to include different interests."		**Agricultural productivity** **Multi stakeholder**
GIZ representative	The strategic objective of the ASBC is to 'maintain biological connectivity between the Chirripó National Park, Las Nubes Biological Reserve, Los Cusingos Neotropical Bird Sanctuary, and the remaining forest fragments of the La Amistad Biosfere Reserve buffer zone' The primary objective of the ASBC is from the countries legal frame through the biological corridor decree. Following this, the superior objective should be the ecological connectivity of the landscape between the protected areas and other natural or modified ecosystems, for the provision of ecosystem services and ecological processes that bring wellbeing to the population.	**C**	**Ecological connectivity** **Ecosystem services** **Wellbeing**
Sector: NGO			
CCT representative	n/a "…that was his vision (Alexander Skutch) – to preserve the area and protect it from threats like climate change. To continue his mission - through investigation, citizen science and environmental education"	**x**	**Biodiversity conservation** **Climate change mitigation** **Scientific Investigation** **Environmental education**
Sector: Academia			
AG, UCR researcher	First directed me to the strategic plan … Because he hasn't worked in the corridor since 2015 – emphasis on how objectives change over time, frustration at how many there are The nature-business integration is well engrained in society. Proclaim, like is something to be proud of, widely accepted. *Economic language* "**I don't know** what the objectives are, or what the vision or mission of the corridor is		**Ecosystem services** **Green economy** **Empowered communities**
FR, U York researcher	"I'm more or less familiar with the objectives, or I can imagine them (…) but I couldn't tell you exactly what they are" "An example could be, to improve the movement of birds from Chirripó to the Pacific" "They also had pedagogic activities to include people as well, such as community-inclusive wildlife monitoring" "I believe the intention and the objectives is to make a more equal and socially just social life, for example through the coffee initiative"		**Improve movement of birds** **Community-inclusive**
AJ, York researcher	"It's difficult to understand what the official objectives are"	**C**	**Economic motor of region**

	"To be the economic motor of the region. That is the true un-official corridor objective. On paper I assume it will still be to generate connectivity between los Cusingos and Chirripó National Park." *Expresses that I should refer to the new management plan, and that objectives are numerous, difficult to keep track of and change over time.* *Regarding the meeting of objectives – he reflects, is this truly necessary?*		**Connectivity**
MM, U York researcher	"I should know them, because I must have read them like 500 times!" (on the corridor) "An area where we try to prioritize the conservation of natural resources of a couple of important reserves where we seek to achieve connectivity between ecologically important areas and at the same time seek economic incentives for the populations that inhabit it to benefit from the conservation"	**x**	**Connectivity** **Economic incentives for community benefits**
Sector: Community			
LA, smallholder farmer	"What can I say, I'm not sure…I have been in so many meetings - over so many years – been in so many workshops, strategic plans… that sometimes we have failed to meet all our goals" "one of the objectives was to widen the cover around the river, to connect Alexander Skutch with Las Nubes and Chirripo" "the idea was to make production more sustainable, search for new markets, protect the river water – more than anything it was for the environment, for the communities – to live in a lovely, pleasant place, and also have a good economy." 'there are many things to do' *Mentions in a disparate way: searching for organised groups, sustainable systems, new productions (e.g. cocoa, pepper, curcuma, medicinal plants, organic farms). Mentions some people have cabins to host visitors. And to continue with protection of river, waste management. Also for communities to be more present. Also some people have cabins. & 'continue with protection – of rivers, and through recycling' and for the communities to participate a bit more* *Also mentioned sale of artisanal products, to continue production but make it sustainable and have accommodation to host students/tourists*		**Widen river cover** **Sustainable production** **Search for new markets** **Improve economy** **Community participation** **Pleasant place to live** **Recycling** **Eco-tourism**
ER, smallholder farmer	n/a		**n/a**
GC, smallholder farmer	"Maintaining the corridor for me is the main thing. Try to make each day better. Search for aid. For the projects to be for the good of the communities" "…more than anything what we are doing here is reforestation. Everything we do is reforestation"	**x**	**Search for aid** **Community wellbeing** **Reforestation**
KN, businessman	"Well, in terms of official … I know that it's part of that protection - the development side – because it's important for the communities to have development" "To maintain communication and a community between environment, organisations, and people living inside the corridor." Because it's no longer just about protecting nature, the trees, the animals – but there are human needs inside the corridor too"		**Address human needs** **Development for communities** **Protect nature**
PC, sales agent	"Specifically, to **conserve nature to the maximum**, and **take care of the living inhabitants**." "To promote taking care of nature. **Promote, incentivise** the visit of tourists to the corridor…" "What do we want? To improve the lives of the inhabitants of the ASBC, through sustainability. Let's talk rural tourism" (…)For example, we have this frog (…) which was understood to be extinct, and it reappeared precisely in the corridor (…Alexander Skutch) (…and to promote the growth of business within the area"	**x**	**Nature conservation** **Take care of living inhabitants** **Promote and incentivise tourism**
GF, assistant for Las Nubes	*n/a*		**n/a**
JA, shop assistant & student	"The ministry of agriculture – if im not mistaken – helped us obtain funding for farmers inside the corridor (…) to improve their agricultural practices and improve the river health" "the local committee worked to provide ideas for the Strategic Plan"		**Obtain funding** **Improve river agricultural practices**

	"Like I've told you, some of the plans have been left there unattended, but… for example… we have an endemic frog called Atelopus. We wanted to take Atelopus as a strategy for people to be motivated to protect it. Make posters, go to schools, and educate people"		**Community education**
LV, teacher	"I don't know… most importantly, the corridor has to exist to protect that part of the ecosystem, to avoid too many animals going extinct"	**x**	**Protect ecosystem and animals**
EPS, shop assistant & student	"More than anything the corridor mission is preoccupied with environmental wellbeing"	**x**	**Environmental wellbeing**
Eva Patricia Salas, shop assistant & student	"I don't know… most recently I heard that there are camaras and many parts that take care of animals. There are many animals that are arriving"	**x**	**Wildlife conservation**

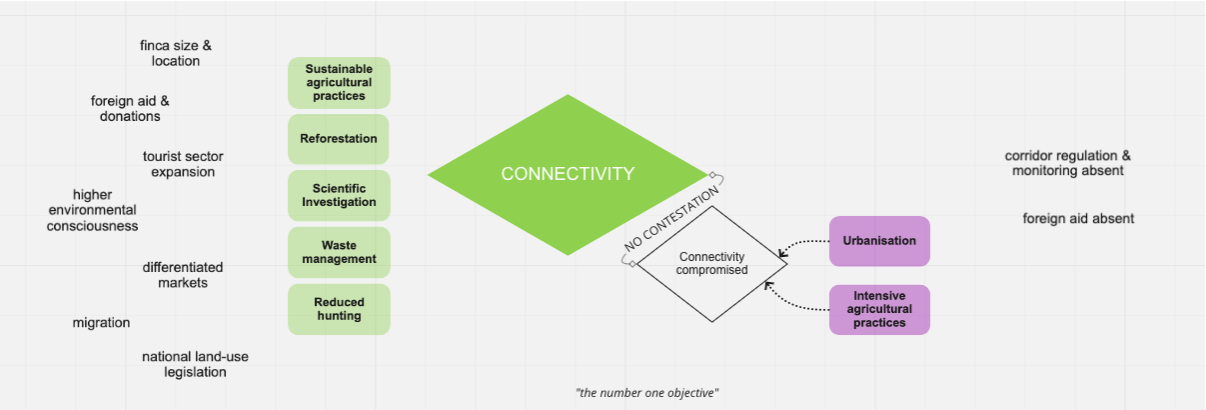
F. Thematic maps

F1. Thematic map for key discourses and practices RQ1& 2

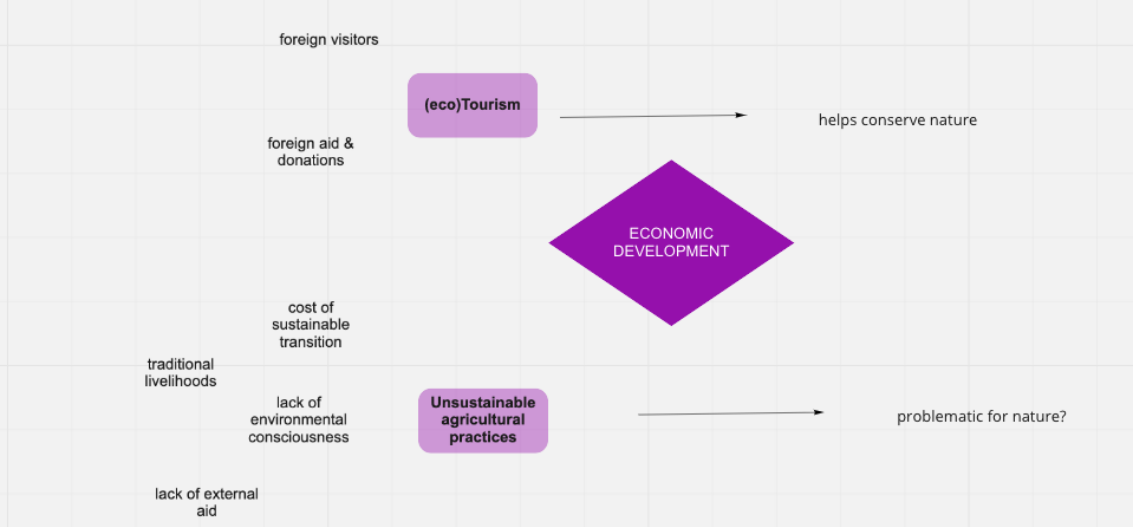


F2. Thematic maps of key (dis)connections (RQ3)

Corridor connectivity: processes of facilitation and compromise



Corridor economic development: processes of facilitation



Corridor community inclusion: processes of facilitation and compromise