The University Of Sheffield.

Entrepreneurship in Conservation and Development

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The University of Sheffield
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IV. Abstract

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Entrepreneurship and Market Based Instruments are promoted to tackle socio-environmental problems, with some authors proclaiming that the conservation sector needs to be more entrepreneurial. Yet, entrepreneurial lenses are rarely applied to projects in conservation, or researched by critical social scientists working on them. There is a lack of understanding of entrepreneurial processes and how they might be facilitated in the sector, which is surprising considering the dominant position of Market-Based Instruments in conservation practice. This thesis seeks to address this gap by applying an ethnographic approach to study entrepreneurs operating honey and baobab enterprises in central Mozambique. It first establishes the impacts of these interventions using local perceptions. It then explores the processes constituting entrepreneurship. Finally, it explores how entrepreneurs create change in rural institutions and how their initiatives adapt in the field. I find that the contribution of the focal enterprises to rural livelihoods outstrips other external interventions, with rural communities expressing a strong desire to be connected to markets. Our entrepreneurs have navigated a difficult institutional environment using a specific combination of skills and processes, which I demonstrate through an application of entrepreneurial theory.

The key argument of this thesis is entrepreneurs are important to advance conservation and development goals as they connect rural people to markets and incentivise positive institutional change. These approaches however pose risks to participating communities, e.g. due to interactions of dependency and market volatility, and require significant additional activities to influence institutional change. The exploitation of entrepreneurial opportunities in conservation is also hindered by a lack of engagement with the concept, a hostile environment, poorly structured support, and the malleability of MBIs (their rules and norms can be reconfigured and undermined).

I argue entrepreneurship is an illuminating lens for conservation, inherently relevant to MBIs. If conservation publications would pay more attention to these lenses, it would increase the visibility of these processes, potentially altering the way entrepreneurship is viewed and mediating positive entrepreneurship for people and environment.

V. Declaration

I, William Mitchell, confirm that the Thesis is my own work. I am aware of the University's Guidance on the Use of Unfair Means (www.sheffield.ac.uk/ssid/unfair-means). This work has not been previously been presented for an award at this, or any other, university.

VI. Abbreviations

AFD - Agence Française de Développement

ANC – African National Congress

BoP – Base of the economic Pyramid

BPM – Baobab Product Mozambique

CEO - Chief Executive Officer

CI – Conservation International

DFID – Department for International Development

FAO – Food & Agriculture Organisation

FFI – Fauna and Flora International

FRELIMO - Front for the Liberation of Mozambique

GDS – Global Development Support

GIZ – German Development Bank

IMF – The International Monetary Fund

KTB – Kenyan Top Bar hive

MBI – Market-based Instrument

MDG – Millenium Development Goals

MHC – Mozambique Honey Company

Mozbio – Protected Areas for Conservation and Development, Mozambique (project)

MZN – Mozambican Metical

NGO – Non-Governmental Organisation

NTFP – Non-Timber Forest Product

PEPFAR – President's Emergency Plan for AIDS Relief

RENAMO - Resistencia Nacional Mocambicana

SME – Small and Medium sized Enterprise

TFCA – Transfrontier Conservation Area

UNCTAD - United Nations Conference on Trade and Development

UNDP – United Nations Development Programme

UNICEF – United Nations Children's Fund

USD – United States Dollar

WB – World Bank

WWF – World Wide Fund for Nature

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W.T.M

May, 2023

1. Introduction

Scholars have suggested that entrepreneurship has a significant role to play in solving many environmental issues facing society (Cohen & Winn, 2007; York & Venkataraman, 2010; Hall et al., 2010). Entrepreneurs have been conceptualised as key change agents of socio-ecological systems and subsystems (Moon et al., 2014; Westley et al., 2013). They are individuals that identify, create and exploit opportunities for change in, *inter alia*, economic, political, social, and biophysical systems. There are different types of entrepreneurship, often classified by the change or value they create, e.g., economic, social, environmental, or institutional (Cohen, Smith & Mitchell, 2006). Economic entrepreneurs change economic systems and markets by creating new businesses, products and services (Eckhardt & Shane, 2010). Institutional entrepreneurs change rules, norms and beliefs, and are 'actors who leverage resources to create new institutions or to transform existing ones' (Maguire et al., 2004, p.657). Entrepreneurs, can straddle these boundaries, simultaneously creating change or value in multiple domains. The study and domain of entrepreneurship is therefore broad, but commonly aims to explain how, why and with what effect the agency of individuals leads to changes in markets and institutions.

Entrepreneurs are acknowledged to address environmental issues through a diverse array of actions. For example, environmental entrepreneurs can innovate to create more environmentally sustainable processes, products or supply chains (e.g., eco-certification; Moon et al., 2014; Dean & McMullen, 2007). Institutional entrepreneurs can galvanise required change in institutions managing natural resources, through regulatory change (Westley et al., 2013; Rosen & Olsson, 2013) or changing practices of resource use and access (Agrawal & Ostrom, 1999). Acts of entrepreneurship that deliver environmental and social value are often referred to as socio-environmental entrepreneurship (Cohen, Smith & Mitchell, 2006).

The key role of entrepreneurs in addressing environmental challenges is becoming acknowledged within the field of conservation and development. For example, the role of entrepreneurs is increasingly the focus of dedicated grant initiatives launched by international development banks (e.g., SEED, promoting entrepreneurship for sustainable development[1]). Large conservation NGOs are directly supporting entrepreneurs and enterprises: Conservation International (CI) recently established a dedicated investment fund targeting small and medium enterprises which aims to benefit

[1] https://seed.uno/about

biodiversity (Conservation Ventures)[2]; whereas Fauna and Flora International (FFI) offer tailored support for entrepreneurs and have recently invested in creating toolkits on participatory enterprise development[3]. Entrepreneurship is increasingly being linked to innovations in the conservation sector and the delivery of conservation goals and objectives (Moon et al., 2014; Appleton et al., 2021). Importantly, an increasing number of academics, conservation practitioners and conservation NGOs have suggested that entrepreneurs and enterprise development should be actively promoted to improve conservation outcomes (Biggs et al., 2010; Harris & Nelson, 2016; Buschke, 2014; Conservation International, 2022; 2023).

Yet, despite this recognition and advocacy for entrepreneurship in the conservation sector, the concept has hitherto been largely ignored by the conservation literature. Conservation journals, scientists and practitioners have not yet embraced entrepreneurship as a research domain. This is potentially unsurprising considering the well-established communication challenges that exist between natural and social scientists focused on conservation, previously referred to as a '*dialog of the deaf*' (Agrawal & Ostrom, 2006; Sandbrook et al., 2013a). Nevertheless, I argue that there are two main reasons entrepreneurship should be of interest to conservation. Foremost, influential conservation practitioners suggest there is a widespread lack of innovation in the sector (Harris & Nelson, 2016), and the lens of entrepreneurship could offer contributions on how to facilitate innovation and understand the factors limiting it. Second, commercial and institutional entrepreneurship are integral, yet largely unnoticed, processes and components of an important feature of conservation and development initiatives: Market Based Instruments (MBIs).

MBIs aim to provide livelihood opportunities for those negatively affected by conservation practice and deal with the tensions between financing conservation objectives and ensuring rural livelihood security (Dressler & Roth, 2011). MBIs exist in a diverse variety of forms, ranging from well-established approaches to conservation, such as eco-tourism to newer innovations such as carbon markets, permits and payments for ecosystem services (Sandbrook et al., 2013b). A common attribute of MBIs is that they put a price and develop markets for goods and/or services provided by nature with the aim of incentivising conservation action or sustainable behaviours (Sandbrook et al., 2013b). MBIs have gained significant support from academics and conservation practitioners and have consequently been widely implemented in the Global South—the World Bank's term for poor countries outside Europe and North America, primarily low income and with less developed economies. However, the implementation of MBIs has also generated significant dissent and critique

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[2] CI Ventures, LLC (conservation.org)

[3] https://www.fauna-flora.org/approaches/livelihoods-governance/sustainable-economic-opportunities/

(Holmes, Sandbrook & Fisher, 2017; Dempsey, 2016; Fletcher & Büscher, 2017; 2018). MBIs therefore split opinion and several debates surrounding their use continue.

Several challenges remain in understanding how MBIs work in practice and impact on the environment and society. A key challenge identified by previous research is that conceptualisations of human agency and institutional change relating to MBIs hitherto conform to overly rational or overly structural models (Van Hecken et al., 2015; 2018). Consequently, we do not adequately understand how agency shapes MBIs, or how MBIs are experienced in practice (Van Hecken et al., 2015). This gap in knowledge is important as MBIs seldom perform as intended and a better understanding of agency may provide valuable insight into how MBIs are reworked and adapted in the field, and why they succeed or fail. In turn, there is a need for studies applying analytical frameworks which can adequately capture agency and institutional change in relation to MBIs.

I argue in this thesis that entrepreneurship offers a novel and potentially useful lens to provide in-depth actor-oriented studies of MBIs for conservation and development. I argue that both commercial and institutional entrepreneurship are integral processes in the formation and implementation of MBIs. After all, MBIs commonly involve the creation of a business or the modification of supply chains (commercial entrepreneurship). They also aim to modify the institutions of communities living alongside biodiversity and, in return, are shaped and adapted by the communities they seek to influence (institutional entrepreneurship). Moreover, entrepreneurship (and its associated concepts and theories) offers a lens to understand the role of agency in MBIs as the domain of entrepreneurship is concerned with providing detailed explanations of how, why and with what consequences individuals realise economic and institutional change. Through applying this lens to the study of MBIs, this thesis provides an in-depth actor-oriented account of MBI creation and implementation, highlighting the role of entrepreneurship in conservation and development initiatives.

This research project used case studies from Mozambique, combined with theories and concepts associated with entrepreneurship, to explicate and contrast the contributions of entrepreneurs in implementing and adapting MBIs for biodiversity conservation. The study uses an ethnographic approach, consisting of stakeholder analysis, participant observation, survey data and qualitative interviews. It seeks to understand the opportunities, actions and determinants at the centre of MBI creation; the processes through which MBIs are reworked and adapted; and, to compare and contrast the impact of MBI implementation on the institutions of communities. The study seeks to make a unique contribution by first, providing an in-depth actor-oriented study of MBI creation and implementation; and second, by combining theories of entrepreneurship and bricolage from different epistemic traditions to understand the entrepreneurial process. As a result, this work hopes to extend

debates in critical geography about the role of markets in conservation and development, and the nature of institutional change in associated with MBIs.

The key conclusion of this thesis is that entrepreneurs are important to advance conservation goals as they connect rural people to markets (providing alternative livelihoods) and can contribute to positive institutional change. However, the exploitation of entrepreneurial opportunities in the sector is ultimately hindered by a hostile environment, poorly structured support, and the institutional flexibility of MBIs (the ability of external and internal actors to reconfigure the rules and norms required to make MBIs function). These approaches also carry risks for participating local communities and have limitations. I observe that MBIs can increase rural people's exposure to market volatility and cause significant temporary hardship. Moreover, although I find evidence of positive institutional change associated with MBIs, the degree of change seems to be limited and depends on additional activities running parallel to the MBI (at least in the case of gender norms). The negative impacts and limitations of entrepreneurship for conservation mean market-based instruments should be deployed with caution. There is a need to actively monitor and guard against their potential negative impacts.

This study suggests that income provided by entrepreneurial interventions takes on increased importance in remote areas such as Chimanimani and Guro in central Mozambique, where other development interventions seemingly fail to have an impact. I suggest that navigating the conservation and development sector and the wider hostile environment to generate socio-environmental gains is made easier by a specific combination of entrepreneurial traits, skills and processes. Specifically, individuals with advanced experience of the conservation/development sectors, transnational social networks, an openness to forge collaborations with commercial entrepreneurs, a willingness and determination to make do, entrepreneurial bricolage skills across multiple domains, significant intrinsic motivation, and a willingness to bear opportunity costs. This combination of traits provides an outline of factors shaping entrepreneurship linked to MBIs for conservation and development. International donors play a key role in this nexus, funding and fostering entrepreneurs and businesses with conservation and development goals. I argue that donor support to these individuals is currently paradoxical, supporting but also hindering innovation. For example, by not providing the type of investment entrepreneurs require to take businesses to scale and by insisting on inhibitory reporting regimes.

I conclude that entrepreneurship is an illuminating lens for MBIs and is inherently relevant to conservation and call for the fuller application of entrepreneurial theory to conservation and development contexts, including the application of southern epistemologies. If conservation publications would pay more attention to these lenses, it would increase the visibility of a process that

is central to conservation objectives and, potentially, help alter the way it is viewed while fostering more tailored and suited support.

The chapters of this thesis proceed as follows, after an initial literature review (Chapter 2) and method (Chapter 3), Chapter 4 reviews the Mozambican context, establishing it as a difficult environment for conservation and entrepreneurship. Chapters 5 and 6 then explore the impacts of MBIs for conservation and development, using local perceptions of the honey and baobab trades to establish what contributions NTFP enterprises make to producers´ livelihoods. While relatively few people are affected, the impact of these enterprises on rural livelihoods outstrips other development interventions, primarily due to their consistency over multiple years and the seemingly limited reach of mainstream development action. Chapter 7 examines the entrepreneurial process in conservation and development, using the entrepreneurs' experiences to confirm Mozambique as a hostile entrepreneurial environment and highlighting the combination of specific traits and external determinants which explain the focal entrepreneurs' success. Chapter 8 reveals that market based entrepreneurial innovations do not, by themselves, move obdurate institutions, such as gender norms, to be fairer and more equitable. This depends on the history and context of communities, e.g., their previous interaction and connectivity with other communities and towns and requires a significant amount of strategic and opportunistic institutional entrepreneurship. Even then, change is not certain. Chapter 9 highlights how the rules and norms of MBIs for conservation and development can be adapted to better suit local needs, but with unforeseen consequences. This thesis ends with a final discussion (Chapter 10), where I set unpack the combination of traits, skills and processes that help entrepreneurs navigate their entrepreneurial environment and shape MBIs for conservation and development.

2. Literature Review: Entrepreneurship and institutional change in the global South

The following literature review explores the concept of entrepreneurship as it relates to conservation and linked institutional change. I however identified no cohesive body of work focused on the phenomenon of entrepreneurship in the context of conservation interventions. Several interlinked and closely related areas are reviewed. For example, a significant body of literature explores entrepreneurship in the context of global development, which details how entrepreneurship has become central to development interventions in emerging economies. As conservation and development interventions have become increasingly intertwined since the 1990s—e.g. with conservation practitioners widely using common development initiatives (agroforestry, agribusinesses development, and ecotourism) to try and transform local economies and incentivise behaviour conducive to biodiversity protection (Ferraro, 2001)—an exploration of the entrepreneurship for development literature highlights key processes relevant to conservation contexts.

This literature review sets out the argument that entrepreneurship is a neglected topic in relation to conservation, both academically and practically, while exploring closely related literatures of entrepreneurship to gain insight. It identifies key concepts and theories relevant to the study of the phenomenon of entrepreneurship potentially relevant to conservation contexts.

The literature review proceeds as follows, 1) widely used definitions of entrepreneurship are provided to understand the different forms entrepreneurship can take. 2) Entrepreneurship in the context of global development is discussed, highlighting how the promotion of entrepreneurship has become central to the global development agenda alongside critiques of this agenda. 3) Informality and informal entrepreneurship are discussed, an important concept relevant to settings often associated in with conservation, i.e. emerging economies. 4) I argue that entrepreneurship is a neglected topic in conservation relevant to trends of increasing forms of neoliberal conservation, including increasing use of Market Based Instruments. 6) I explore different theories of entrepreneurship and their potential relevance to conservation, including an exploration of potential overlaps between different theories of entrepreneurship, specifically institutional and commercial entrepreneurship. 7) Finally, I conclude by summarising my key argument and highlighting potentially interesting areas of research for this thesis.

Defining entrepreneurship

Entrepreneurship is a complex and heterogeneous concept: it has many different definitions and forms and means different things to different people (Bruyat & Julien, 2001; Foss & Klein, 2012).

Traditionally, entrepreneurship has been exclusively associated with the creation of novel businesses and economic value, and this association is reflected in common understanding and prominent definitions of entrepreneurship, e.g., 'the activity of setting up a business or businesses, taking on financial risks in the hope of profit'[4]. Much research into entrepreneurship reflects this common view, having focused on understanding how novel businesses and economic value are created—e.g., through the introduction of new markets, processes, goods and services—and the motivations and actions of those responsible. The concept of entrepreneurship has however expanded beyond the boundaries of economic systems, reflecting scholarly interest in understanding change beyond businesses (Thompson et al. 2011)[5].

The contemporary study of entrepreneurship generally involves understanding the how, when and why of opportunity creation, recognition and utilisation. Widely cited definitions of entrepreneurship include 'the discovery, creation and exploitation of opportunities' (Shane and Ventakaraman, 2000), and 'as one of discovering and evaluating opportunity as well as creating new opportunities and possibilities' (York and Venkataraman, 2010; 451). The term 'entrepreneur' has therefore evolved from being exclusively used for those with the skills to create new businesses which generate economic value (profit), to being used to describe key change agents in a range of systems. For example, commercial entrepreneurs, institutional entrepreneurs, policy entrepreneurs, norm entrepreneurs, social entrepreneurs, environmental entrepreneurs and even 'sustainable' entrepreneurs. A review of all forms of entrepreneurship is outside the scope of this proposal. Here, I discuss three broad forms of entrepreneurship relevant to biodiversity conservation: commercial entrepreneurship, institutional entrepreneurship and socio-environmental entrepreneurship.

Commercial entrepreneurship

To define commercial entrepreneurship, I draw upon Scott Shane's (2003) Individual Opportunity Nexus, a widely cited, general theory of entrepreneurship. The Individual Opportunity Nexus defines entrepreneurship as the activity of discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organising, markets, processes and raw materials through organising efforts that had previously not existed (Shane, 2003). In accordance with this definition, the domain of commercial entrepreneurship is focused on explanations for how, by whom, when and with what effects entrepreneurial opportunities to create future goods and services are exploited (Venkataraman, 1997; 2019; Shane, 2003). For example, the sources and forms such opportunities take, how these

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[4] Oxford Dictionaries https://en.oxforddictionaries.com/definition/entrepreneurship

opportunities are discovered and exploited, and the strategies and actions entrepreneurs undertake to exploit opportunities.

Institutional entrepreneurship

The concept of institutional entrepreneurship is strongly associated with the work of DiMaggio (1988, p.14) who argued that 'new institutions arise when organised actors with sufficient resources see in them an opportunity to realise interests that they value highly'. These actors or 'institutional entrepreneurs' seek institutional change through varied actions. For example, an institutional entrepreneur may identify political opportunities, frame the problem domain, link dispersed actors, build alliances, mobilise resources, and invent new policy options (Hardy & Maguire, 2008). Ultimately, institutional entrepreneurs are those that spearhead efforts to modify existing or create new institutions (Biggs et al, 2010).

Socio-environmental entrepreneurship

Social entrepreneurship, like entrepreneurship generally, has a significant body of literature dedicated to its definition and conceptualisation. A widely-cited definition is provided by Mair and Marti (2006, p. 37), "a process involving the innovative use and combination of resources to pursue opportunities to catalyse social change and/or address social needs". However, definitions are diverse. Some authors, for example, focus on how social entrepreneurs discover and exploit opportunities with the intention of improving social wealth through the establishment of new ventures or the recombination of existing resources or institutions (Zahra et al., 2009). Other authors emphasise social entrepreneurs' ability to provide goods and services to marginalised sectors of society within developing economies (Prahalad, 2011). Nevertheless, despite this variety, a commonality between the definitions is their emphasis on the creation and achievement of social value and goals over the creation of financial wealth. Environmental entrepreneurship (Hardoy et al., 2001) and ecopreneurship, (Schaltegger, 2002) are associated terms which generally refer to the creation of ventures whose core objective is to earn money whilst contributing to solving environmental problems, such as the erosion of biodiversity. In the face of failure of the state to conserve biodiversity, many private initiatives have arisen to address this issue, for example eco-tourism, sustainable forest enterprises, NTFPs, and even private protected areas. These enterprises, according to Dean & McMullen (2007), create or expand markets for resources or services, such as sustainable tourism. Finances generated through these ventures are intended to incentivise the protection of the biodiversity directly or indirectly. Environmental entrepreneurs, unlike social entrepreneurs, are mainly driven by business opportunities capable of improving environmental conditions (Gutberlet et al., 2016).

Entrepreneurship for development

A significant shift occurred in global development thinking at the start of the 21st century, with neoliberal strategies (e.g. privatisation, free markets, entrepreneurship) being advocated over state-led approaches as a more efficient and effective means to alleviate global poverty. Core to this shift was the ambition to enhance the ability of the private sector to contribute to poverty alleviation and global development through the creation of businesses / products that generate employment and wealth (UNCPSD, 2004), and the attractive proposition that businesses could create products and services for people at the Base Of the economic Pyramid[6] (BoP; those with a per capita income of less than $1,500; see *Prahalad, 2004; Prahalad & Hart, 2002)*, facilitating profits while simultaneously combating poverty. Entrepreneurship was therefore framed as a key solution to development challenges in emerging economies due to its ability to increase employment and stimulate economic growth through the introduction of new goods, services, markets (Hart, 2007; Sutter et al., 2019). Entrepreneurship was not only posited as a mechanism for economic development but as a way to stimulate innovations across diverse domains to deliver local economic, social, and environmental gains (Marshall, 2011; Lumpkin et al., 2018), and emerging economies were identified as replete with opportunity for innovation and entrepreneurship, e.g. in food supply, education, employment, women's empowerment, environment and healthcare (Zahra et al., 2008).

Governments of emerging economies, policy makers and international institutions subsequently embraced entrepreneurship as a vehicle for sustainable development (Mair and Marti, 2006, Battilana et al., 2009). The United Nations Sustainable Development Goals (SDGs) reference entrepreneurship (SDG targets 4.4 and 8.3) as part of their blueprint for peace, prosperity, and global sustainable development. International development organisations have pivoted in their approaches to provide focused support to entrepreneurs in emerging economies (Ebrahim and Rangan, 2014; Pandey et al., 2017). Frameworks have been created to help emerging economies develop national policies conducive promoting entrepreneurship. For example, the UN Conference on Trade and Development (UNCTAD) developed the entrepreneurship Policy Framework in 2012 (UNCTAD, 2012), which suggest policy options and recommended actions for six priority areas that directly impact entrepreneurship[7] .

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[6] In 2004, the United Nations Development Programme branded the 4 billion people at the base of the pyramid as an 'attractive market' for the goods and services of multinationals and local companies (UNCPSD, 2004: 30)

[7] Formulating national entrepreneurship strategies; optimizing the regulatory environment; enhancing entrepreneurship education and skills development; facilitating technology exchanges and innovation; improving access to finance; and promoting awareness and networking

Support for social entrepreneurship is a particularly popular mechanism for promoting development and positive change in the Global South in the context of the Sustainable Development Goal financing gap and decreased development funding (Scheyvens et al., 2016).

After two decades of entrepreneurial and BoP focused approaches for development, there is a sizeable literature focused on this phenomenon, its processes and impacts. Key research themes have emerged, including the impact of entrepreneurship on macro economic development, entrepreneurial determinants and support networks, the role of entrepreneurship in promoting women's empowerment in rural settings, and impacts on the environment. According to Neumann (2021), the majority of studies on the macroeconomic impact of entrepreneurship provide empirical evidence that entrepreneurship has a significant and positive impact (e.g. Atems and Shand, 2018; Audretsch and Keilbach, 2004; Fritsch and Mueller 2004, 2008). Some authors determine that this also applies to emerging economies in Africa; Adusei (2016) concludes that entrepreneurship promotes macroeconomic growth in emerging economies as differing levels of entrepreneurship across twelve African countries explain differences in macroeconomic growth. However, entrepreneurship has also had no or negative impacts on macroeconomic performance in certain contexts (e.g. Carree and Thurik, 2008; Andersson and Noseleit, 2011), and the empirical evidence on the macroeconomic impact of entrepreneurship in emerging economies is therefore mixed (Easterly, 2006; Neumann, 2021).

Research has also focused on understanding the determinants of entrepreneurship in development contexts. There is increased recognition that diverse contexts—social, cultural, and economic—strongly influence how entrepreneurship is perceived (Dodd et al. 2013), how it is practiced (McKeever et al. 2014), and the consequences and outcomes of entrepreneurship. There are large differences between countries in the orientation, nature and structure of entrepreneurship (Autio & Arcs, 2007). For example, the relative quantity of necessity and opportunity entrepreneurship in a country differs significantly (Acs and Varga, 2005). It is now well established that the dynamics of entrepreneurship will be shaped by combinations of diverse factors specific to a given country, inter alia, the institutions related to economic behaviour, quality of governance, access to capital and perceptions. Understanding why entrepreneurship takes different forms in different contexts requires an understanding the nexus between entrepreneurship, economic development and institutions (Acs et al., 2008).

A segment of literature also tracks and explores how support for entrepreneurship in emerging economies has evolved. Authors identify that entrepreneurs in emerging economies face the dilemma that, despite a plethora of opportunities for innovation and entrepreneurship because of inadequate provision of basic services (e.g. in education, healthcare, employment), the realisation of these

opportunities is severely constrained by the lack of resources and support (Manning and Vavilov, 2023). In more advanced economies, entrepreneurship is supported through a range of institutions and mechanisms, e.g. government agencies, incubators, venture capitalists, angel investors, universities and science parks (Ratinho et al., 2020; Clayton et al., 2018; Bergman and McMullen, 2022). In emerging economies, such institutionalised support for entrepreneurship is regarded as much less advanced (Biru et al., 2021). Some scholars argue that these forms of institutionalised support for entrepreneurship, stemming from the Global North, are not directly applicable to the Global South (e.g. Jiménez and Zheng, 2018), and that the main form of entrepreneurial support in emerging economies are family and kinship networks (Khayesi et al., 2014; Zelekha and Dana, 2019). Nevertheless, institutionalised forms of entrepreneurship support are apparently spreading in emerging economies, such as tech hubs in sub-Saharan Africa (e.g. Jiménez and Zheng, 2021; Littlewood and Holt, 2018), and accelerators in India (Goswami et al., 2018). Although, entrepreneurs often lack effective local support (e.g. capital or training; Kolade et al., 2021) encounter issues associated with corruption (e.g. nepotism, see Biru et al., 2020); or the support fails to promote scalable solutions (Jiménez and Zheng, 2021). Overall, raising capital and support for development-focused entrepreneurship in emerging economies remains a significant challenge (Lall et al., 2020; Karanda and Toledano, 2018).

Scholars have become increasingly interested in entrepreneurship and its potential as an emancipatory mechanism for women from endemic poverty, discrimination, and patriarchal constraints (Rindova et al. 2009; Al-Dajani et al. 2015; Ojediran & Anderson, 2020). Empirical studies document the benefits that women gain from engaging with entrepreneurship, e.g. financial gains, empowerment and social recognition. For example, Sharma and Varma's (2008) study of self-help groups in Haryana state, India, conclude that entrepreneurial activities for rural women in India have led to increased social recognition of self, status of family, size of social circle, self confidence, and independence. Other authors argue that women's entrepreneurship is crucial to a nation's social and economic development, and strongly advocate for collaborations and policies that can 'find ways of unlocking the potential of women entrepreneurs' (Derera et al., 2020, p. 11). More critical perspectives however question the impact of women's entrepreneurship on empowerment and development in the Global South. Studies indicate that Women's engagement with entrepreneurship in development contexts is already high—e.g. in sub-Saharan Africa rates of women's entrepreneurship rank as the highest globally (Kelley et al. 2017) with women more likely to engage in business than other regions (AfDB et al. 2017)—but that these contexts reflect gender normative environments, where patriarchal societies subjugate the role of women and ultimately restrict women's engagement with entrepreneurship and control its benefits (Ojediran & Anderson, 2020; Derera et al., 2020). Women's entrepreneurship in emerging economies is consequently limited, existing mostly at the micro level,

informal and unlikely to grow (Ojediran & Anderson, 2020). Moreover, authors point out that women are frequently driven to entrepreneurship out of necessity, e.g. during economic crises in Zimbabwe (Derera, 2015), and this should not be considered emancipatory (Ojediran & Anderson's 2020). Other studies highlight how women engaging in business also face significant negative impacts, including uncertainty, concerns for their own personal safety, criticism, stress, limited social life and fear of indebtedness and poverty (e.g. Cummings and Lopez's (2022) study of entrepreneurship in Ethiopia). Considering these impacts, Cummings and Lopez (2022) conclude that framing entrepreneurship as a solely positive activity for women is absurd. They appeal to development professionals and policy makers to reflect on the limitations of entrepreneurship as an approach for development and as a mechanism for women's empowerment. They warn that entrepreneurship programmes that do not directly engage with gender normative issues will potentially fail to support women.

Overall, a sizeable body of critical scholarship has emerged, concerned with the apparent limitations of entrepreneurship as an approach for development and highlighting conceits and paradoxes with mainstream thinking. Authors highlight how the boundaries of entrepreneurship have grown over time—from a purely economic vehicle to one that can address the world's economic, social, cultural and environmental challenges (Lee, 2023)—cautioning that entrepreneurship has become a '*panacea*' (Hall et al., 2018; Dhahri & Omri, 2018) or *'universal solution'* Ojediran & Anderson, 2020) for problems in the emerging economies. Studies have consequently aimed to test the extent and limit of entrepreneurship's contributions across different domains. For example, Dahari and Omri's (2018) study of entrepreneurship across twenty developing countries questions the compatibility of entrepreneurship with environmental objectives, indicating that while entrepreneurship can contribute positively to the social and economic development, it usually has negative environmental impacts.

Other authors have questioned the overarching logic of promoting entrepreneurial approaches in emerging economies or at the BoP on the basis that entrepreneurs face exacerbated barriers when compared to developed economies—e.g. access to finance, colonial legacy, political instability, weak institutional/regulatory environments, corruption and a shortage of well-educated staff (Mirvis & Googins, 2018)—and suggest it is paradoxical to promote entrepreneurship models dependent on market logics in countries exhibiting poor market performance (e.g. Zambia; Kerlin, 2010). Others point to the narrow focus of entrepreneurial approaches and their tendency to frame development predominantly purely in economic terms, disregarding the multidimensional nature of development and rendering other matters invisible (e.g Sen, 1999), seeing 'social, cultural and political benefits at best as by-products of economic gains' (Karnani, 2007, p. 106; Calas, 2009).

Authors have also interrogated the consequences of extending new forms of entrepreneurship and markets into rural communities. Arora and Romijn (2011) highlight how BoP approaches depoliticise

the incorporation of the poor into global markets and warn that these approaches function to entrench inequality. Hall et al (2012) argues that policies promoting entrepreneurship at the BoP can encourage destructive outcomes and, in the case of Brazil's tourism industry, has marginalise and excluded the poor. Du Toit (2009) unpacks how attempts to incorporate the rural poor into agricultural markets in South Africa has in some cases exacerbated insecurity relative to farm worker's livelihoods and land tenure. Reardon and Timmer (2007) warn of the displacing impact that new markets and increased entrepreneurship can have on local firms unable to withstand greater competition. Empirical studies document a myriad of negative impacts on marginalised people—e.g. encouraging entrepreneurship among the most vulnerable can lead to greater indebtedness (Calas et al., 2009, Ahl and Marlow, 2012, Alsos et al., 2013, Cummings and Lopez, 2022). In the case of spread of microfinance in the Indian state of Andhra Pradesh, over-indebtedness among poor borrowers caused at least 30 cases of suicide (Ashta, Khan, & Otto, 2015; Haldar & Stiglitz, 2014). Finally, a central criticism of entrepreneurship as a mechanism for development and poverty alleviation is that it focuses on the self -reliance of marginalised groups and individuals getting themselves out of poverty (Moradi et al., 2021). This position is not only conveniently compatible with neoliberal logics that dominant development discourses but shifts responsibility away from the state and institutions.

Entrepreneurship and Informality

A prominent concept for both commercial and institutional entrepreneurship in the emerging economies is *informality* (Hart, 1973; King, 1996; Meagher, 2007) and a significant literature explores how entrepreneurial activity occurs outside the formal sector. The following section examines informal entrepreneurship in relation to commercial, institutional and socio-environmental entrepreneurs.

Institutions, in the broadest sense, are the rules or constraints that govern human behaviour (North, 1991; Brown, 2003). They are structures that influence the behaviour of individuals and groups (De Konning, 2011). A common constituent of definitions of institutions is rules or regulations. One of the most widely used definitions of institutions is the 'rules of the game' (Lowndes, 2002). Rules often relate to formalised or written-down laws and regulations. When examining institutions much emphasis and attention has been given to the formal rules and regulations that structure human behaviour. In relation to conservation, relevant formal institutions are the laws that guide access, control and management of common-pool resources, and which are enforced or backed up by the state (Leach et al., 1997). For example, the formal institutional characteristics of conservation initiatives clearly include the demarcation of protected areas, accompanying legal frameworks (including fines

and rules of access), and the formal property rights that govern the use of biodiversity and natural resources.

Formalised rules are not the only institutions that influence human behaviour. Informality is an important concept in relation to both institutional and commercial entrepreneurship impacting natural resource management. In addition to these formalised rules, Scott (2001) defines two other types of institutions, norms and beliefs. These institutions are less formal than rules and regulations and are not always written down (Hall & Taylor 1996). These informal institutions relate to social relations, culture, normative conventions, and cognitive beliefs (Scott, 2001). Generally, informal institutions are those not dependent on the state for enforcement (Colding & Folke, 2001). In relation to conservation, informal institutions are the norms and beliefs that guide use, access and management of common-pool resources, and which are not enforced or backed up by the state.

For example, informal institutions relevant to conservation relate to family or community level taboos which restrict harvesting of certain species or areas, either entirely or at specific times of year (e.g., Jones et al. 2008). Equally, informal norms and beliefs, established over generations, can conflict with formal rules intended to conserve wildlife, making formal rules out of sync with the realities on the ground. Nana (2022) illustrates how norms and beliefs around bushmeat lead people to consume it irrespective of the law – bushmeat connects people with tradition, rejects imperialism, forms part of their identity, is preferred by their families and view law enforcement as disregarding customary rights. Defining the role of informal institutions in relation to conservation and development is not straightforward. Diverse use of the term has led to blurring of what is meant by an informal institution (Meagher, 2007; 2010). It is clear that different perspectives on informal institutions exist, and that these perspectives are shaped by, *inter alia*, disciplinary differences and debates on the role of structure versus agency (Meagher, 2010). Four main perspectives are the evolutionist perspective, legal pluralist, structuralist, and post structuralist (see Meagher, 2007). These different perspectives on informal institutions combined with the political realities in the global South have given rise to different views on their implications for conservation and development: new institutionalists view informal institutions as mechanisms to fill gaps in formal service provision: the synergy perspective argues that informal institutions are mechanisms to improve the performance of formal institutions; whereas another view suggests that informal institutions can undermine formal institutions (Meagher, 2010). In this study, I will analyse the role of entrepreneurs and MBIs in modifying both formal and informal institutions.

Regarding institutional entrepreneurship, specifically in relation to conservation and development, some perspectives suggest that informal institutions have increased importance in the global South when compared to the North (Meagher, 2007). For example, formal institutions (rules and regulations)

related natural resource use may be lacking or poorly enforced, which increases the role of informal institutions in governing natural resources. Informality is thus an important concept to this study and will be discussed in detail in the proceeding sections of this chapter.

With respect to commercial entrepreneurship, informality relates to the creation of businesses or ventures that participate in the "informal sector" or informal economy. In development studies, the concept of the 'informal sector' was first introduced by Keith Hart (1973) in his seminal paper, 'informal income opportunities and urban employment in Ghana'. The informal economy is defined here as the paid production of goods and services that are legitimate in all respects besides the fact they are unregistered or hidden from the state for tax and/or benefit purposes (European Commission, 1998; Evans et al., 2006; Katungi et al., 2006; Marcelli et al., 1999; Volkov, 2002; Webb et al., 2009; Williams and Windebank, 1998). In the global South , a significant amount of employment occurs in the informal economy—e.g., the ILO (2002) estimated that 72% of employment in sub-Saharan Africa is informal—and thus entrepreneurs commonly engage in the informal economy (Williams & Nadin, 2012). Informal (commercial) entrepreneurs are individuals that actively engaged in starting a business or is the owner/manager of a business who participates in the paid production and sale of goods and services that are legitimate in all respects besides the fact that they are unregistered by, or hidden from, the state for tax and/or benefit purposes (Williams, 2006, 2007, 2010). For informal commercial entrepreneurs the only illicit aspect of their activity is that some or all of their monetary transactions are hidden from the state (Williams & Nadin, 2012).

A significant body of work explores the informal economy indicating that it is highly innovative and creates diverse value. For example, Armstrong and Kraemer-Mbula (2022) explores different types of value created by informal economic activity. They apply Wenger et al.'s (2011) value creation cycles to maker communities in south Africa, concluding that participation in the studied communities had strong potential to create value for the participant as well as being a pathway to social inclusion. Kraemer-Mbula et al. (2019) explores innovation in the informal economy, challenging the dominant perception in the literature that small and micro enterprises operating in informal economies are not innovative, providing evidence that SMEs in Nigeria, South Africa, Tanzania and Uganda continuously innovate. Whereas Avenyo & Kraemer-Mbula, explores product innovation in informal enterprises through a gendered lens, suggesting female-owned enterprises in Ghana sell more innovative products than their male counterparts.

Social entrepreneurship can also be informal. A common assumption of the literature has been that informal entrepreneurs are purely profit driven commercial entrepreneurs (Williams & Nadin, 2012). However, recent research suggests that informal entrepreneurs can range from those pursuing entirely commercial ends to those pursuing entirely social ends. Williams & Nadin's (2012) study of informal

entrepreneurs in England suggest that the degree to which informal entrepreneurs are commercially or socially driven temporally and spatially varies, with those operating in deprived areas being more socially oriented.

Informal environmental entrepreneurship seems to be a seldomly explicitly discussed topic in the academic literature. Nevertheless, if entrepreneurs participate in the informal economy to achieve social objectives, it is highly probably that entrepreneurs participating in the informal economy can also generate environmental value. For example, informal eco-tourism enterprises could theoretically incentivise conservation in the same way as formal versions. However, the extent that informal environmental entrepreneurship occurs, especially in the global South and in relation to biodiversity conservation, is not a topic that has been extensively discussed, hitherto.

Entrepreneurship for conservation, a neglected topic

Despite entrepreneurship's posited use as a tool to realise economic, social and environmental goals (Cohen & Winn, 2007; York & Venkataraman, 2010; Hall et al., 2010), it is a largely neglected topic in the field of conservation, both from the perspective of implementation and academia.

From a implementation perspective, there is a common opinion that the field of conservation lacks entrepreneurship. For example, high-profile conservation practitioners, Fred Nelson and Alistair Harris, suggest that 'entrepreneurial thinking and practice does not characterise the conservation field today, by and large' (Nelson & Harris, 2016). This perspective is reinforced by Shah (2016), 'the pace of innovation in conservation has been too slow to address the growing scale of environmental problems'. Similarly, Buschke (2014) suggests that a few large organisations dominate conservation action, which, due to their scale, struggle to realign their strategies and seize entrepreneurial opportunity. Buschke (2014) argues that there is a need for entrepreneurship in the field in the form of small conservation start-ups, capable of promoting a diversity of objectives and addressing local conservation problems. Similarly, Morais et al. (2018) suggest that a specific form of entrepreneurship—tourism micro-entrepreneurship— should be researched and incubated as a means to improve conservation outcomes. The authors argue that strategies adopted by conservation authorities to protect rhinos in South Africa have alienated gateway communities living close to national parks, and that the promotion of tourism micro-entrepreneurship is a potential strategy to involve those communities and foster a sense of stewardship among them to be protectors of natural resources. In short, some conservation practitioners and academics suggest that the field lacks entrepreneurship, and that action is required to promote it as a means to improve both environmental and social outcomes of conservation.

Academically, mainstream conservation journals rarely mention the concept. *Oryx* has two and six articles which reference 'entrepreneurship' and 'entrepreneur', respectively over the last three years. Whereas *Conservation Biology* has thirteen references in all volumes. The ways in which various forms of entrepreneurship interact with (e.g. create, support, modify, or inhibit) contemporary conservation objectives and initiatives seems to be poorly understood. For example, limited empirical studies use an entrepreneurial lens to explore and understand conservation interventions, i.e. few studies focus on the processes and skills key individuals employ to discover and exploit opportunities to establish new institutions or businesses. Currently there are limited theoretical studies that conceptualise the entrepreneurial process in conservation-relevant contexts. Moreover, there have been no explicit examinations of the determinants that support the emergence of entrepreneurship in the field of biodiversity conservation, and no studies seem to exist which link multiple forms of entrepreneurship to changes in conservation governance. Thus, from an academic perspective, the relationship between entrepreneurship and biodiversity conservation has not been adequately explored, and the entrepreneurial process in the context of conservation is currently opaque.

Neo-liberal conservation, MBIs and entrepreneurship

The neglect of entrepreneurship by the field of conservation is surprising because studying entrepreneurship offers a potentially useful lens with which to approach important debates on the impacts of neoliberal conservation and associated Market-Base Instruments. Neoliberal conservation is considered part of the more widespread process of neoliberalisation occurring throughout the global economy since the 1980s. Neoliberal conservation relates to the process whereby influential organisations concerned with biodiversity conservation have gradually integrated strategies and mechanisms aiming to balance the tensions of conservation and economic development by utilising markets as mechanisms for financing conservation (Fletcher, 2020). The phenomenon has been identified by a range of literatures researching environmental policy and given a variety of labels including "neoliberal nature," "neoliberal environmentalism," "green neoliberalism," "green capitalism, and "market environmentalism" (e.g., Heynen et al. 2007).

MBIs are how neoliberal conservation is commonly implemented. They are acknowledged to take diverse forms, ranging from well-established approaches such as eco-tourism to newer innovations such as biodiversity offsetting, wetland banking, carbon markets, biodiversity credits, permits and payments for ecosystem services (Sandbrook et al., 2013b: Fletcher & Büscher , 2020). MBIs seek to provide livelihood opportunities for those most affected by conservation practice and seek to deal with the tensions between financing conservation objectives and ensuring rural livelihood security

(Dressler & Roth, 2011). Nevertheless, what constitutes a market-based instrument is not always clear, nor is their overlap with other policy instruments (Pirard & Lapeyre, 2014). Pirard's (2012) study of market-based instruments critiques the term as a catchall for heterogenous instruments with price components, making it difficult to make a collective judgements about their use. Taking stock of this heterogeneity, Pirard (2012) classifies MBIs into six broad categories based on exclusive characteristics and their relation to markets (See Table 1).

Table 1. Market-based instruments for biodiversity and ecosystem services: a lexicon (Source: adapted from Pirard, 2012)

Category	Exclusive characteristics	Relation to markets	Examples
Direct markets	A market where an environmental product can be directly traded between producers and consumers (or processors)	Proximity to the market definition depends on cases and the degree of commodification	Genetic resources, non-timber forest products (NTFP), ecotourism
Tradable permits	An ad hoc market where users of an environmental resource need to purchase ''permits'' that can be further exchanged among resource users, thereby creating artificial scarcity	Creation of a specific market for a given environmental objective, information are expected to be revealed	Mitigation banking for biodiversity, emission quotas in the European ETS, Individual Transferable Quotas for fisheries, tradable development rights for land, voluntary carbon marketsa
Reverse auctions	A mechanism whereby candidates to service provision set the level of payment (if accepted) in response to a call by public authorities to remunerate landholders	Creates an auction-based market that favours competition among bidders for achieving cost-efficiency	Payments for ecosystem services (e.g. BushTender in Australia, CRP in the US)
Coasean-type agreements	Ideally spontaneous transactions (free of public intervention) for an exchange of rights in response to a common interest of the beneficiary and the provider	Usually not following market rules, more of a contractual nature	Payments for ecosystem services ala Wunder, conservation easements, conservation concessions
Regulatory price signals	Consists in regulatory measures that lead to higher or lower relative prices	Based on an existing market	Eco-tax, agro-environmental measures
Voluntary price signals	Consists in schemes whereby producers send a signal to consumers that environmental impacts are positive (in relative terms) and consequently gain a premium on the market price	Uses existing markets to identify and promote virtuous activities	Forest certification, labels for organic agriculture, norms (selfproduced before certification)

Conservation practice over the last decade has been characterised by the extensive uptake of MBIs (McAfee 1999; Büscher et al., 2012; Pirard, 2012). Some authors suggest MBIs are now the dominant

form of conservation practice (Büscher & Fletcher, 2020). The appeal and proliferation of MBIs is partly explained by their compatibility with neoliberal logics, and the win-win rhetoric within which they are framed (i.e., that it is possible to alleviate poverty and conserve ecosystems simultaneously). Sandbrook et al. (2013b) suggests that the uptake of MBIs in conservation has been treated with cautious pragmatism by conservationists overall, identifying two distinct groups among conservation professionals: one ideologically opposed to MBIs and the other cautiously enthusiastic for the potential benefits increased conservation funding markets may bring.

The proliferation of neoliberal conservation and MBIs has gained significant attention from academics. A substantial body of critical social science literature has emerged, seeking to understand their functioning and consequences for society and the environment (e.g., Büscher, Dressler & Fletcher, 2014; Büscher et al., 2012; Fletcher, 2010; Fletcher et al., 2016; Igoe & Brockington, 2007). In turn, significant advances have been made in understanding MBI use and impacts. For example, it is widely acknowledged that PES initiatives often play out in variegated ways in the field, far removed from their original, theoretical designs (Van Hecken et al., 2015). Moreover, a range of issues associated with MBIs have been identified. For example, Dressler and Roth (2011) have questioned the impact of MBIs on marginalised or less powerful actors. Brockington, Duffy & Igoe, (2008) warns that the implementation of MBIs and their associated polices risks forgetting local rights and livelihoods, like previous conservation imperatives. Büscher (2010) points to the dubious reasoning of using markets to solve social and environmental issues that are arguably a consequence of markets' own making, that MBIs might legitimise further unsustainable exploitation of nature and that MBIs in conservation are framed as 'anti-political', technical fixes to what are ultimately political problems. Gómez-Baggethun & Muradian, (2015) suggest there is little evidence that MBIs can bring effective conservation outcomes. Sandbrook, Gómez-Baggethun & Adams (2020) suggest that MBIs look vulnerable as tools for conservation given their dependence on private sector actors and the limited capacity of businesses to continue public action without state support during recent global crises (i.e., COVID-19). Moreover, Collins et al. (2021) argues that MBIs reinforce and extend the temporalities and geographies of colonialism, and therefore perpetuate uneven and exploitative power dynamics in relation to the governance of natural resources. MBIs and neoliberal conservation split opinion, revealing profound disagreement about what conservation is or should be (Sandbrook, 2015).

NTFPs and their commercialisation represent one type of MBI for conservation and development (direct markets, see table 1). Like other MBIs, there has been huge interest in the potential of NTFPs to reinforce livelihoods and incentivise conservation. This is due to multiple reasons. NTFPs make important contributions to rural livelihoods, especially to people living adjacent to forests that are dependent on NTFPs as sources of food, medicine and fibre. Exploitation of NTFPs tends to be less ecologically

destructive than harvesting timber and therefore provides a surer foundation for sustainable forest management. Moreover, developing a market for NTFPs should increase the perceived value of forests and thereby incentivise their conservation (Arnold and Perez, 1998). A consensus has seemingly formed around NTFP commercialisation as incapable of providing a pathway out of poverty for a large number of rural poor (Angelsen et al 2014; Shackleton & Pullanikkatil, 2019). Nevertheless, the process of the development of NTFP enterprises and their implementation provides an interesting case study for entrepreneurship and the adaption of market-based instruments.

MBIs, entrepreneurship and their effects can influence the institutions of rural communities. For example, NTFP commercialisation and social entrepreneurship can play a vital role in empowering women in rural communities (Agrawal, Gandhi & Khare, 2021). Researchers have pointed out how the subsequent improvement in women's economic freedoms can increase their mobility, improve their position in household decision-making, their ownership of assets, their political and legal awareness among other positive outcomes (Hashemi et al., 1996). However, the benefits of enterprise do not necessarily reach women and can even increase their vulnerability, as is demonstrated by value chain developments (Shackleton et al., 2011a). Previous studies have explored the contestations that occur between men and women in the face of crop/NTFP commercialisation, documenting how women lose out because their positions in value chains are often subordinate to men (Marshall & Schreckenberg, 2006; Hasalkar & Jdahave, 2004). They also show how men commonly seize control of women's crops that become valuable (Orr et al., 2016) or how men appropriate valuable crops when they lose their own source of income (Brockington, 2001), and how successful male-controlled cash crops are built on the back of female labour (Noe, Howland & Brockington, 2021).

Several challenges remain in understanding how MBIs work in practice and impact on society and the environment. A key challenge identified by Van Hecken et al. (2015; 2018) is that conceptualisations of human agency and institutional change relating to MBIs hitherto conform to overly rational or overly structural models. For example, Van Hecken et al. (2018) are critical of an article by Fletcher & Büscher (2017), which focuses on how the promotion of PES diffuses and potentially internalises neoliberal rationalities. Van Hecken et al., (2018) suggest that, *inter alia*, their analysis presents an abstract, structuralist perspective that 'overlooks how actors intertwine theory and practice in ways which cannot be explained by dominant structural theory' (p. 314). Moreover, the authors suggest that Fletcher & Büscher (2017) make 'little attempt' to understand how the neoliberal structures they critique are constituted and coproduced through agency of diverse actors. While acknowledging that these two groups of authors seem to have different epistemological views, Van Hecken et al. (2018) suggest that a consequence of these structuralist perspectives is that we do not adequately understand how agency shapes MBIs, or how MBIs are experienced in practice. Van Hecken et al.,

(2018) therefore argue that a key question in understanding MBI performance—specifically the failure of PES to make human-nature relationships perform as ex-ante theorised—is how and why actors interpret and shape MBIs in diverse ways? In other words, understanding the agency of local actors is crucial to untangle how and why MBIs (and neo-liberal environmental governance) work in practice, fail or succeed, and generate unexpected outcomes.

To address this gap, Van Hecken et al. (2018) explicitly advocate actor-oriented analysis of MBIs, capable of revealing the myriad of ways in which MBIs are formed, adapted and reworked to local contexts. Moreover, the authors argue that actor-oriented studies need not obscure structures, as Fletcher & Büscher (2019) suggest. On the contrary, such actor-oriented studies will provide crucial insight into how neoliberal structures are reproduced. Structures and institutions are of course embodied and perpetuated through the conscious and non-conscious actions of individuals (Cleaver, 2012). Moreover, seminal actor-oriented studies exist which have effectively demonstrated how structures are perpetuated, such as Willis' (1977) *Learning to Labour*, which details how culture guides working class males into working class jobs.

Entrepreneurship offers a potentially useful lens to understand how MBIs for conservation and development are shaped and to settle this disagreement between prominent scholars. Entrepreneurial frameworks provide detailed accounts of how agency of individuals creates value, while unpacking the structures influencing success (Shane, 2003). Thus, modern theories of entrepreneurship integrate the two poles of structure and agency, providing in-depth actor-oriented studies, addressing the gap identified by Van Hecken et al. (2015, 2018) regarding MBIs, while simultaneously taking account of the institutional structures which facilitate or inhibit the formation and adaptation of MBIs.

I argue that entrepreneurship provides an appropriate lens for two main reasons. Foremost, commercial and institutional entrepreneurship are domains which focus on providing detailed explanations of how the agency of key individuals leads to changes in markets or institutions, respectively. Thus, the concepts and constructs used in entrepreneurship should provide an adequate framework to capture the agency involved. Second, entrepreneurship theories conceptualise the environmental characteristics which facilitate and inhibit entrepreneurship, providing a frame to understand the interaction between structure and agency. Third, the establishment of commercial businesses and new institutions are integral processes involved in the conception and implementation of MBIs. Commercially, MBIs often involve the production and sale of products, and, in turn, involve the establishment and exploitation of commercial business opportunities. Thus, the actions and strategies of commercial entrepreneurs are central to the implementation of MBIs and a key component of understanding how agency shapes a given MBI. Institutionally, MBIs are both mechanisms for institutional change and can be reworked and adapted through institutional

entrepreneurship or bricolage. In sum, I suggest that entrepreneurship is a domain that offers in-depth actor-oriented studies of key processes inherent in the formation and adaptation of MBIs. This requires a more in-depth examination of theories of entrepreneurship to which I now turn.

Theories of Entrepreneurship

The are multiple theories dealing with entrepreneurship and innovation. For example, theories of institutional entrepreneurship have evolved from two concurrent but unlinked research streams; sociology based institutional theory and economics based institutional economics (Pacheo et al., 2010). Previous comparisons of these theories highlight the difference between them in terms of the types of institutions they focus on (informal vs formal), the determinants of (political and social pressures vs economic pressures) and their empirical focus (process of institutionalisation vs outcomes of institutionalisation) (Pacheo et al., 2010). With commercial entrepreneurship, there are a wealth of theories relating to distinct parts of the entrepreneurial process. Theories commonly discussed include effectuation and causation (Sarasvathy, 2001). Two theories which seek, and claim, to offer a full understanding of entrepreneurship are the entrepreneurial value chain creation theory (Mishra & Zachary, 2015) and the individual-opportunity nexus (Shane 2003).

The traditional theoretical model of commercial entrepreneurship, often referred to as **causation**, (Sarasvathy, 2001, 2008; Fisher, 2012), suggests that entrepreneurship is a directed and ordered process, involving discrete phases of opportunity recognition, evaluation and exploitation (Shane & Venkataraman, 2000; Shane, 2003). It represents a rational model, whereby entrepreneurs identify new means-end frameworks before they act, and will choose between potential, alternative frameworks to achieve their goals, usually by selecting the framework that will maximise returns (Sarasvathy, 2001). Important concepts central to the process of causation are, *inter alia*, intentionality or strategic action (Katz & Gartner, 1988), opportunity identification and evaluation, planning and goal setting to exploit opportunities, and resource acquisition (Shane & Venkataraman, 2000; Shane, 2003). Key behaviours associated with causation include the identification of an opportunity before venture development, calculating the value or returns of opportunities, developing business plans, and gathering information about competitors (Fisher, 2012). Furthermore, research into causation suggests that a range of determinants will influence the process, i.e., an individual's ability and/or decision to exploit a given entrepreneurial opportunity. For example, education, career experience, age, social position, the economic environment (e.g., personal wealth, capital availability) the political environment (e.g., taxes, property rights) and the socio-cultural environment (e.g. societal attitudes toward entrepreneurship and the presence of entrepreneurial role models). Shane (2003) combines multiple dimensions of

entrepreneurship into one complete theory intended to cover the full entrepreneurial process, the individual-opportunity nexus (Figure 1).

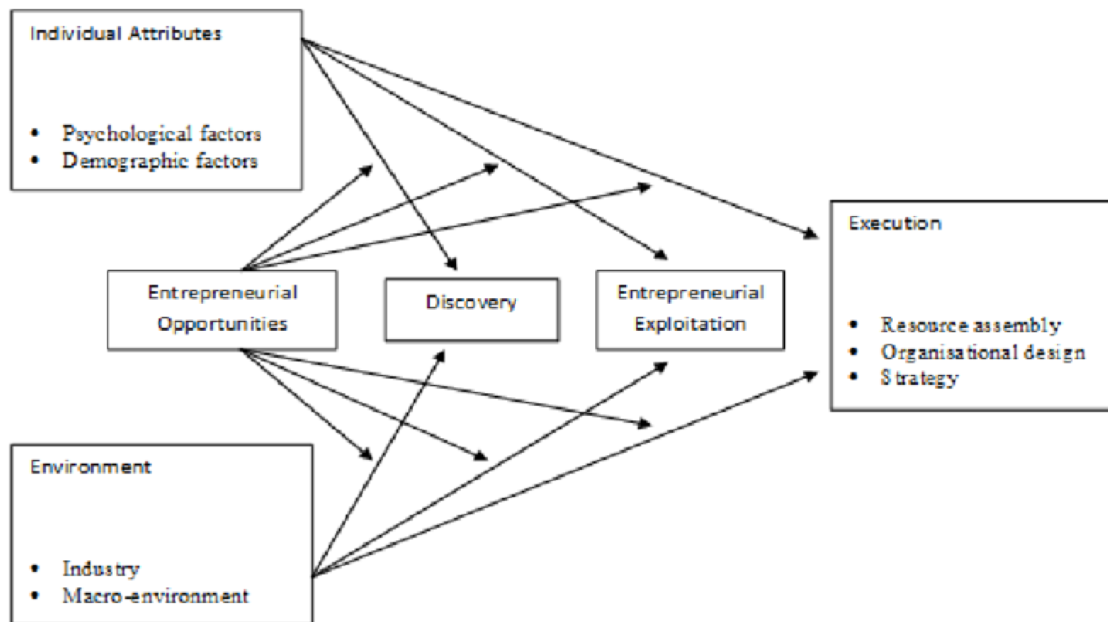

Figure 1. The individual-opportunity nexus – a general theory of entrepreneurship

Entrepreneurial bricolage is another model of commercial entrepreneurship. It seeks to understand the entrepreneurial process in penurious environments and was initially developed due to dissatisfaction with rational models of entrepreneurship (i.e., causation; Baker & Nelson, 2005; Fisher, 2012). Resource limitations for entrepreneurs can stem from various sources, such as the customers, internal resources, and the business environment (Fisher, 2012; Witell et al., 2017). Traditional models of entrepreneurship suggest that when entrepreneurs face resource-scarce environments then they will try to procure resources from others, or, alternatively, abandon the opportunity, downsize or disband (Fisher, 2012). Entrepreneurial bricolage rejects this traditional thinking, suggesting a third option is available to entrepreneurs: to engage in bricolage by utilising the resources at hand. For example, by re-cycling or repurposing materials for a function they were not originally intended. Therefore, resource scarcity induces the bricolage process, and entrepreneurial bricolage represents an active engagement with problems by a combination of available resources (Baker & Nelson, 2005). Baker & Nelson (2015) suggest that entrepreneurial bricolage occurs within five domains: 1) physical, 2) labour, 3) skills, 4) customers/market, 5) regulations (see Table 1). Thus, the central concept behind entrepreneurial bricolage is creating something from nothing by making do with what is at hand to solve problems and uncover opportunities (Baker & Nelson, 2005)

Table 2. Description of the bricolage domains entrepreneurs can engage in when faced with penurious environments

Bricolage domain	Description
Physical	By imbuing forgotten, discarded, worn or presumed "single-application" materials with new use value, bricolage turns valueless or even negatively valued resources into valuable materials
Labour	By involving customers, suppliers, and hangers-on in providing work on projects, bricolage sometimes creates labour inputs
Skills	By permitting and encouraging the use of amateur and self-taught skills (electronics repair, soldering, road work, etc.) that would otherwise go unapplied, bricolage creates useful services.
Customers or markets	By providing products or services that would otherwise be unavailable (housing, cars, billing system, etc.) to customers (because of poverty, thriftiness, or lack of availability), bricolage creates products and markets where none existed.
Regulatory environment	By refusing to enact limitations with regard to many "standards" and regulations, and by actively trying things in a variety of areas in which entrepreneurs either do not know the rules or do not see them as constraining, bricolage creates space to "get away with" solutions that would otherwise seem impermissible

Source: Adapted from Baker & Nelson (2005)

Institutional entrepreneurship and transformative agency

Westley et al's (2013) theory of transformative agency seeks to improve understanding of the ways in which institutional entrepreneurs reform institutions and transform environmental governance. The theory posits that successful institutional entrepreneurs will act in concert with the evolving context of the system they aim to influence. More specifically, as socio-ecological systems proceed through discrete phases described by the adaptive cycle (Holling, 1986; see figure 2), so does the opportunity context (Dorado, 2005) for institutional entrepreneurs, and the strategies they employ will match these separate phases of opportunity. Overall, transformative agency prescribes that institutional entrepreneurship in natural resource management can be better understood if we consider how strategic actions link to the condition or state of socio-ecological systems. Key concepts behind this theory, therefore, are strategic action, the adaptive cycle/ state of the field, and opportunity context.

In short, transformative agency suggests that in situations where institutional structure is established and resistant to change (conservation phase/ opaque opportunity contexts), institutional entrepreneurs will pursue strategies that involve anticipating, preparing for, and helping to create disturbances that break down established institutions. Following a disturbance (e.g., political, economic, or social), institutions may be questioned or collapse, creating space for institutional innovation. During this release phase/ hazy opportunity context, communication and interaction will intensify before resources are mobilised for action or change. Here, institutional entrepreneurs will employ various communication strategies (such as convening and sense making) connecting groups and individuals and creating a platform around a narrative or common vision for alternative institutional forms. The reorganisation and exploitation phases of the adaptive cycle, which both constitute the 'transparent opportunity context', is a period of intense activity for institutional entrepreneurs. Key to this phase is experimentation and the recombination of resources into novel forms. At this point, some ideas for institutional innovation will inevitably be abandoned, but resources may be consolidated around a specific innovation. Finally, during the exploitation phase, institutional entrepreneurs will leverage resources in favour of a particular innovation that then becomes consolidated/ institutionalised, which, in turn, signals the start to a new cycle.

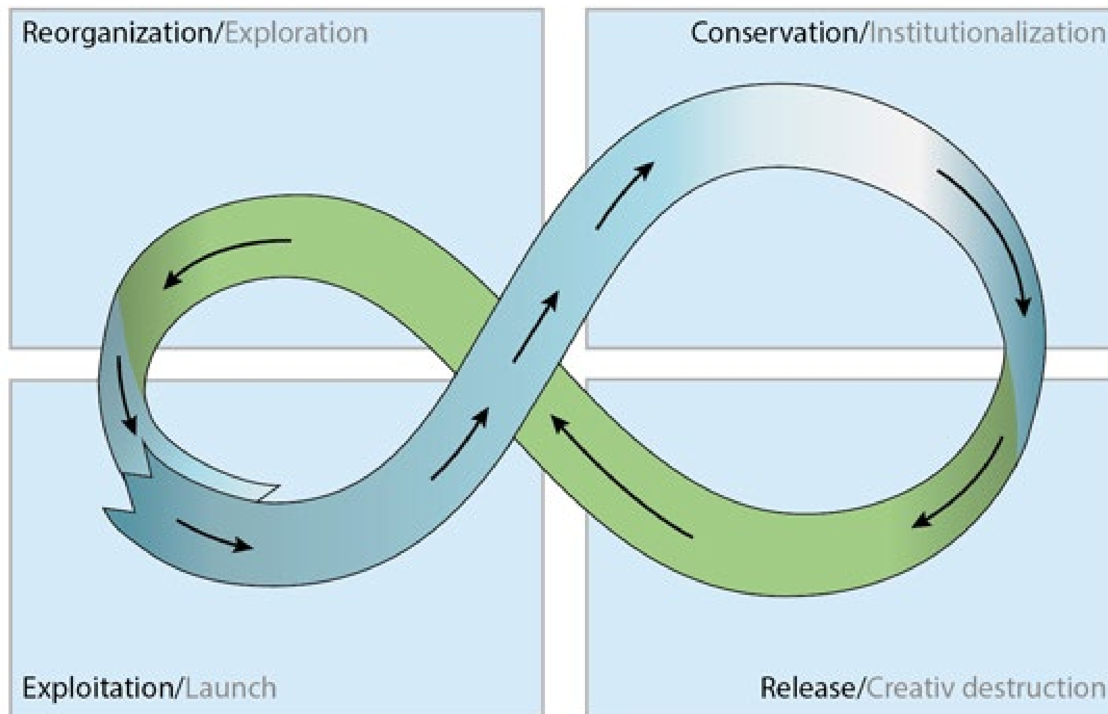

Figure 2. The adaptive cycle. Source: adapted from Westley et al., (2013), adapted from Holling (1986)

Critical institutionalism and institutional bricolage. Critical institutionalism is a school of thought that unpacks how institutions mediate relationships between people, natural resources and society (Cleaver & de Koning, 2015). It emerged partially as a response and critique of mainstream institutionalism (as exemplified by the work of Elinor Ostrom) and incorporates insights from a wide range of scholarship providing insight into the formation, perpetuation and modification of institutional norms. For example, community-based development approaches (Dill, 2010); hybrid economic institutions in informal economies and the politics of access to goods and services (Jones, 2015); and the nature of property and access (Sikor and Lund, 2009). The primary focus of critical institutionalists is to query the assumptions that commonly underpin institutional thinking (Cleaver & de Koning, 2015) and they frequently question the pervasive thinking that institutions can be purposely designed (e.g. De Koning 2011; Chowns 2014). Cleaver and de Koning (2015) provide a sketch of critical institutionalism, suggesting it consists of 1) and emphasis on multi-scalar complexity of institutions. 2) the historic and dynamic formation of institutions as shaped by creative human actions. 3) the interplay between the traditional and the modern, formal and informal arrangements. Critical institutionalists therefore view institutions as dynamic and *fuzzy* arrangements that are not always designed for a specific purpose but are commonly appropriated and modified from other arrangements. Institutions therefore evade design and there is no simple relationship between institutional configuration and outcomes.

Institutional bricolage is a concept linked to critical institutionalism and relating to how institutions are formed and expressed in the context of natural resource management. Developed by Frances Cleaver (2002; 2015; 2017), institutional bricolage is a process whereby bricoleurs (entrepreneurs) create and reshape institutions utilising the 'resources at hand' (De Koning & Cleaver, 2012). Institutional bricolage is a dynamic process involving the re-use, reworking, or repurposing of existing institutional elements or components to perform new functions (Sehring, 2009; Clever, 2012). The theory presents a number of core concepts. Foremost, institutional bricolage results in multipurpose institutions. More specifically, the piecing together of institutional components means that institutions emerging from bricolage are rarely oriented toward a single purpose. Second, integral to institutional bricolage is the naturalisation of the institutional arrangements emerging from the process. That is, institutions emerging from bricolage must be legitimised by, for example, calling upon tradition, meaning or analogy. Third, conscious and non-conscious action. Institutional bricolage suggests that both strategic actions and habituated everyday practices shape institutions. Forth, bricolage is an authoritative process, whereby the ability of individuals to shape and reshape institutions is dependent on their social positions and access to authoritative resources, such as authority, reputation, status and assets (Cleaver, 2012). In addition, the process of institutional bricolage has three alternative processes: aggregation, alteration and articulation. These processes describe the alternative ways in which bureaucratic institutions interact with local practices and socially embedded intuitions. Aggregation relates to the recombination of various institutional elements; alteration refers to the adaptation or reshaping of both bureaucratic and socially embedded institutions; and articulation occurs when local rules, norms and beliefs do not align with bureaucratic institutions (De Koning & Cleaver, 2012; Cleaver & De Koning, 2015).

Analysing how actors use their power, their authoritative and allocative resources, to shape institutions is a central part of critical institutional analyses and an important part of understanding why MBIs function in specific ways and with what impacts. Although critical institutionalism is power sensitive, it tempers the view that powerful actors are champions of change, (a view commonly found in adaptive governance and entrepreneurial frameworks) and suggest that to understand how power shapes institutions we must take account of how power is embedded in wider societal relations (Cleaver & Whaley, 2018). Critical institutionalism however acknowledges that '*the poor and marginalised often find it difficult to shape the formal rules and the rules in use, to negotiate norms, and experience the costs and benefits of institutional functioning differently to more powerful people*' (Cleaver & Koning, 2015, p.10).

Application of entrepreneurship theory across contexts

The application of entrepreneurship and closely related theories of innovation across new contexts has drawn criticism and for some authors to appeal for reflection. For example, Callegri & Nybakk (2022), have recognised the increasingly widespread application of Schumpeterian theory of innovation to the forestry sector, suggesting that spurious theoretical understanding hinders the field's development. The authors argue that this has led to two main issues: uneven application of theory, with some elements receiving heavy attention while others are ignored; and past mistakes in understanding being replicated in subsequent publications. Callegri & Nybakk (2022), appeal for more holistic application of Schumpterian theory that is better anchored in its origins.

Previous research recognises that definitions, conceptualisations and theories of entrepreneurship and innovation are heavily based on Western epistemologies and ontologies (Jiménez & Roberts, 2019). Some authors suggest models of entrepreneurship originating from developed economies are less useful at explaining the phenomenon in emerging economies, primarily due to the marked difference of emerging economies institutional development (Foo et al., 2020). Whereas others have criticised the application of entrepreneurial models from developed economies to emerging economies as inadequate, based on values stemming from capitalist economies—such as individualism, competition and growth—and serving to deepen inequalities while perpetuating unsustainable models of extraction and consumption (Jiménez & Roberts, 2019; Jiménez et al., 2022). Jiménez and Roberts (2019) underscore that these models should not be uncritically adapted but that alternative models of innovation should be explored, incorporating indigenous knowledge and values from the global South. Indeed, efforts have been growing to better understand innovation through the lens of bottom-up innovation (Kaplinsky, 2011), incorporating epistemologies of the South and arguing that another form of innovation is possible to those depicted by Western models (e.g. Jiménez & Roberts, 2019).

This criticism creates a need to reflect on the relevance of Western theories of entrepreneurship and their application to outside contexts, specifically emerging economies such as Mozambique. I see multiple factors which potentially gives Western theories of entrepreneurship more purchase in emerging economies than one might expect. Foremost, one factor influencing the applicability of Western theories of entrepreneurship is the degree to which they have been the focus of historical knowledge transfer, and how influential any transfer of ideas has been in shaping practices of entrepreneurship in the focal context. Despite recent questioning of the utility of Western concepts and practices transferred to other cultures (e.g. Jiménez & Roberts, 2019; see also Kao et al.1999, which questions transfer of Western management theories to Asia), and acknowledgement of the challenges this can create, knowledge transfer between developed and emerging economy settings

has been common practice and extensive. Consequently the influence of the west's entrepreneurial ideas and practices in non-western countries can be strong (Sinha, 1999).

Multiple authors suggest Western forms of knowledge can be dominant in emerging economies and offer diverse views to explain this. For example, Greenfield and Strickon (1981) suggest that emerging economies are reliant on Western knowledge because: a) their own knowledge creation relating to development is limited; and b) emerging economies are eager to develop and see Western theories as advanced or the only way to success. Gupta and Govindarajan (1991) suggest that aid agencies and multinational corporations are responsible for significant knowledge transfer between Western and emerging economies. Adler (1997) explores patterns in education, suggesting that emerging economies have been dependent on the west, primarily America, for professional management training, which has led to the infusion of Western systems and theories as they are viewed as superior. Thus, if the focal country has been highly influenced by western ideas of entrepreneurship due to historical knowledge transfer, through aid agencies and formal education, this has likely structured the phenomenon of entrepreneurship in those contexts potentially making elements of Western entrepreneurial theory relevant. Moreover, a given individual's entrepreneurship might be heavily influenced by Western ideas and practices, despite operating in an emerging economy. For example, if an entrepreneur from a developed economy moves to a developing economy, as is the case with two of the entrepreneurs discussed in this study (Andrew Kingman and Andre Vonk; see Chapter 3), their pathway to innovation may be better, or at least partially, explained by Western theories than those originating from an emerging economy. Nevertheless, if Western ideas or models of entrepreneurship are strong in Mozambique it does not mean they should be. The dominance of Western ideas over ideas from Mozambique itself potentially relates to the imposition of political, economic and military interventions, e.g. colonialism and capitalism. These ongoing processes are acknowledged to subordinate and stifle indigenous knowledge opposed to dominant interests representing a form of epistemic takeover (see Sousa Santos, 2015).

The degree to which western theories of entrepreneurship can be applied may also depend on the type of entrepreneurship observed, e.g. formal or informal entrepreneurship. On one hand, theories of entrepreneurship developed in the Global North are closely associated with formal entrepreneurship. That is, these theories have been developed primarily by studying the emergence of officially registered businesses that are visible to the state and occurring in high income country contexts. On the other, theories of entrepreneurship developed in emerging economies are often associated with informal entrepreneurship, activity that is unregistered and invisible to the state in low-income contexts. This trend is partially explained by the dominant form of entrepreneurship in each context.

Schneider, (2002) estimates that informal activities contribute between 10-20% of gross domestic product in developed economies, and as much as 60% in emerging economies.

This thesis focuses on formal entrepreneurship: the businesses studied are officially registered and visible to the state, pay taxes, undergo inspections by government departments, comply with certification standards, and satisfy due diligence processes of multilateral development banks that invest in their model. Theories of entrepreneurship from developed economies may provide a useful lens to understand processes associated with formal entrepreneurship in emerging economies because they focus on factors associated with formal innovation. For example, influence of the entrepreneurial environment and resource mobilisation processes are concepts applied in Western models of entrepreneurship that also influence innovation in emerging economies. Of course, the relationships or influence of these factors on entrepreneurship in emerging economies could be significantly different. It is possible that some Western theories of entrepreneurship are more useful for studying formal entrepreneurship in the Global South when compared to some theories originating from the appropriate culture and context. For example, theories of informal entrepreneurship originating from an emerging economy applied to study formal entrepreneurship in the same context might not be entirely appropriate, obscuring important processes such as interactions with the state, something informal entrepreneurs largely avoid. Theories of formal entrepreneurship that feature concepts to explain interactions with the state could have more explanatory power in this case.

Western theories of entrepreneurship are potentially applicable to emerging economies as the income gap between western economies and other countries has recently narrowed. Shifting patterns related to contemporary globalised capitalism has led income inequality between developed and emerging economies, after two centuries of increasing (Pritchett, 1997), to shrink over the last two decades (Bourguignon, 2015; Milanovic, 2016). Many low income countries have been reclassified as middle income countries (as classified by the World Bank), whereas absolute numbers of people living in extreme poverty have fallen (Sumner, 2016).

This narrowing of the north – south income divide can be attributed primarily to rising economies, e.g. China and India, but Africa has also gone through a period of significant economic growth and change, with the rapid expansion of African economies leading to the adoption of the 'Africa rising ' narrative by businesses and policy makers (Taylor, 2016). Mozambique, perhaps above any other country in Africa, represents this narrative (UN News Centre, 2013) as businesses grew and new construction projects occurred across Maputo during the first decade and a half of the 21st century (Barros, Chivangue, & Samagaio, 2014). Although Mozambique's development has been highly uneven (see Brooks 2018; Chapter 4), this economic growth has likely influenced the form of

entrepreneurship occurring, in Maputo at least. This is because a nation's increased financial development is associated with increased rates of formal entrepreneurship compared to informal (Omri, 2020). This narrowing of the north – south divide, and associated shift toward formal, may potentially increase the suitability of aspects of western theories to emerging economies.

The applicability of Western theories of entrepreneurship to emerging economies will potentially depend on the type of research and how aspects of the theory are applied. Western theories will likely be more useful if they are critically applied with space allowed for concepts to be challenged and modifications explored. For example, if research is guided by key determinants of entrepreneurship defined in western theories, it is potentially appropriate to use these as a starting point to explore determinants in emerging economies while also allowing the influence of these determinants to be questioned and alternative relationships defined. The application of Western theories may be more problematic if the research design makes key assumptions based on Western theories and leaves little room to challenge these assumptions. For example, quantitative research that tests the strength of influence of determinants defined by Western studies on rates of entrepreneurship in an emerging economy. This research could draw false conclusions if the relationships between determinants and innovation are different in the focal context compared to the original context where the theories were defined. Or influential determinants could even be excluded from the study completely if they were not observed in the original context. Therefore, if Western theories of entrepreneurship are applied to study emerging economies, a researcher should acknowledge that components of Western theories may not hold and ensure the research design creates adequate space to question underlying assumptions, to be deductive, and explore alternatives.

Even if the growth of the formal sector, international value chains and sharing of international practices that are becoming more prevalent in Mozambique means that these theories explain more than expected, it does not mean these theories can offer complete explanations. Adopting or incorporating theories based on Southern epistemologies would steer attention to different, potentially more influential, concepts. Ubuntu is one lens used in entrepreneurship research and is a philosophy held across several African countries that positions and explains an individual's humanness relative to others. It roughly translates to 'I am because we are' or 'I am what I am because of others' (Abubakre, Faik, and Mkansi 2021, 2). Using ubuntu as a lens would lead the researcher to focus, for example, on the role of trust, respect, responsibility, fairness, compassion and good citizenship as principles and their influence on business strategy (Machi & Kunene, 2018), and how entrepreneurs attempt to / are expected to uphold the ubuntu values of inclusivity, humility and reciprocity. It has been used as a lens to help understand the different forms of value derived from entrepreneurship (as Du Toit (2021) demonstrates for educational entrepreneurship), and to explain the community focus

of digital innovators in Africa (Abubakre et al., 2021), contrasting with the prevalent heroic narratives of Western ideas of entrepreneurship.

Overall, applying theories of entrepreneurship to contexts similar to where they were developed should of course add significant explanatory power, steering researchers toward variables, relationships and ways of knowing that shape the form entrepreneurship takes, its outcomes and how it is perceived. However, the growth of the formal sector, international value chains, sharing of international practices, integration of Western entrepreneurs into emerging economies does not make it a simple case of Western theories of entrepreneurship for developed economies and local theories for emerging economies. There is potential that these ideas of entrepreneurship interact, continuously merge and give rise to hybrid forms. Further studies could test how Western ideas of entrepreneurship and philosophies such as ubuntu interact, and the types of businesses this gives rise to with what impacts, both in developed and emerging economies. This potential overlap is not explored in this thesis as I found exploring overlaps between institutional and commercial theories considerable work (see next section). Making connections with other bodies of theory, e.g. ubuntu, is important work, but I leave this to subsequent research.

Similarities, differences and combining theories

It is, at first sight, odd to have two sets of theories to explain institutional change on the one hand and commercial change on the other. The social phenomenon behind these theories may not be so different. After all, in what sense is a firm *not* an institution of some sort? Is a profit motive the only possible driving force underpinning theories of commercial entrepreneurship? Why could these not be applied to change of non-commercial organisations? Ultimately, both groups of theories seek to explain how and why change occurs, and to differing degrees, articulate the role of agency and structure.

I see no *a priori* reason to separate these two bodies of knowledge. Moreover, as I have already outlined, there is much overlap in their theories. Moreover, the two different groups of theories use many of the same central concepts. However, there is curiously little overlap between the two bodies of work in practice in the sense that authors working in both fields do not really cite each other. This lack of conversation makes uniting the two bodies of work a challenging task. Seminal research from 30 years ago decried how such a diverse set of entrepreneurship scholars, from a broad range of academic disciplines, could contribute to the knowledge of entrepreneurship but tended to ignore research from different disciplines (in Bull & Willard 1993; Wortman, 1992). My review suggested that the tendency of one discipline to ignore another, despite a common field of study, persists today. I

outline below some of the similarities and differences between these seemingly disparate theories of entrepreneurship and explore potential areas of integration. Before discussing these theories, I provide an overview of each theory, including their intellectual origins and views on agency and power (Table 2).

Table 3. Theories of entrepreneurial process

	Individual Opportunity Nexus	Transformative agency	Entrepreneurial bricolage	Institutional bricolage
Overview	A general theory of how individuals identify and exploit opportunities to create change in economic systems	A theory of how individuals identify and exploit opportunities to create change in institutions, particularly toward adaptive governance structures.	A general theory of how individuals identify and exploit opportunities to create change in economic systems, specifically in resource limited environments	A theory of how Institutions change and are expressed, particularly relevant when formal institutions meet informal institutions.
Origins	Economics / entrepreneurship	The institutional turn / new ecology / institutional entrepreneurship / adaptive governance	Economics / entrepreneurship (causation) / bricolage	The institutional turn / critical institutionalism
Complexity and scale	Focuses primarily on economic systems. Usually small businesses. Does not include analyses of other systems unless they directly impact the economic subsystem.	Social-ecological systems are inherently complex. This complexity arises from interactions within and across spatial and temporal scales. AG operates best at bioregional scales where ecosystems and institutional arrangements are compatible.	Focuses primarily on economic systems. Usually small-scale resource limited businesses. Acknowledges that entrepreneurship is a more complex process than causation.	Complexity is an inherent feature of social systems, and of the interface of people with the environment. It manifests in multifaceted identities, institutional plurality, and the intersection of local and global domains. The unintended consequences of human actions cause further complexity.

	Individual Opportunity Nexus	Transformative agency	Entrepreneurial bricolage	Institutional bricolage
Resilience	Resilience relates to the capacity of economic sub-systems to persist.	The capacity of a social-ecological system to absorb natural or human shocks and to reorganize or adapt while retaining essential functions and characteristics. Resilience promoted as a normatively good trait.	Resilience relates to the capacity of economic sub-systems to persist. Resilience of firm is increased if the participate in bricolage to mobilise resources	Resilient institutions have temporal endurance and the capacity to adapt to changing circumstances. Resilience not necessarily good or bad because a resilient institution may be one that perpetuates inequalities
Networks	Self-organising. Networks of buyers and sellers. Support networks play a key role for entrepreneurs, enabling information transfer, resource mobilisation and shared visions.	Self-organizing, multilevel networks of actors enable learning, trust, power sharing, information transfer, and shared visions. “Shadow” (informal) networks allow for experimentation that may facilitate desirable system transformation.	Self-organising. Networks of buyers and sellers. Networks and relationships a key source of resources allowing entrepreneurs to engage in bricolage.	Dynamic webs of relationships, loyalties, and dependencies shape people’s engagement with governance. Formal and everyday social networks intersect in practice. The plurality of networks offers multiple channels for accessing resources and for the exercise of power

	Individual Opportunity Nexus	Transformative agency	Entrepreneurial bricolage	Institutional bricolage
Institutions, adaptation and social learning	Institutions as a system of rules, laws, policies and norms that both facilitate and constrain entrepreneurs and their ventures. Informal entrepreneurs can ignore or subvert institutions	Institutions as a system of rules, laws, policies, and norms that incentivize individuals to behave in certain ways. AG requires a structure of diverse, nested, cross-scale institutions that facilitate experimentation, learning, and change. Institutions can be designed for purpose.	Institutions as a system of rules, laws, policies and norms that both facilitate and constrain entrepreneurs and their ventures. Institutions are a key domain for entrepreneurs to engage with. Institutional components can be combined and recombined in entrepreneurial bricolage.	Institutions as bundles of norms, practices, and rules. Institutions are hybrids, blending the old and new, formal and informal, formed through bricolage (improvisation and adaptation) in everyday settings. History, social structure, power relations, meaning, and legitimacy are key to how institutions work. Institutions partially elude design

Source: Original table adapted from Cleaver and Whaley (2018). Additional information from Shane (2003) and Baker & Nelson (2005).

Overlaps between theories of institutional and commercial entrepreneurship

Individual opportunity nexus and transformative agency

Causation and transformative agency share a number of key concepts, such as intentionality and strategic action. Both theories emphasise that understanding the strategic actions of entrepreneurs are key to understanding how new businesses or institutions form. Examining these theories in parallel suggest that many of these strategic actions are similar. For example, resource mobilisation, planning and building partnerships are key strategic actions undertaken by entrepreneurs in both theories. However, there are also key differences. Causation suggests that some of the key strategic actions undertaken by commercial entrepreneurs will revolve around defending their innovation (Shane, 2003). For example, commercial entrepreneurs will often keep the information they utilised to discover their opportunity secret as a means to prevent others exploiting the same opportunity; alternatively, they may seek to control the resources required for their innovation in an attempt to prevent competition. Transformative agency, on the other hand, does not explicitly incorporate strategic actions that institutional entrepreneurs undertake to 'defend' their innovation. I suggest that this is a potentially interesting area of expansion for the theory of transformative agency. What strategic actions do institutional entrepreneurs engage in to defend their innovations once they have been introduced?

Similarly, both theories suggest that entrepreneurship is a process composed of discrete phases. Although each theory conceptualises these phases in different ways there are similarities between them. For example, the organising phase of the opportunity nexus and the conservation phase of transformative agency are analogous: both these phases involve planning and stimulating support for a given innovation. There are also key differences between these theories; for example, the opportunity nexus considers opportunity discovery and the decision to exploit an opportunity to be key phases of the entrepreneurial process. Transformative agency does not include phases analogous to these in its process. Thus, where a key phase of causation relates to how entrepreneurial opportunities are discovered and the factors that lead entrepreneurs to exploit these opportunities, transformative agency does not concern itself with how entrepreneurs discover opportunities to introduce innovation or why they decide to exploit these opportunities. Comparing the phases of entrepreneurship therefore provides an area of potential crossover. Specifically, transformative agency could be a richer theory and help us better understand institutional change if it included 'opportunity recognition' and 'decision to exploit' as key concepts.

Entrepreneurial and institutional bricolage

Entrepreneurial and institutional bricolage share their intellectual origins and present both areas of overlap and key differences. A clear area of overlap between entrepreneurial and institutional bricolage occurs in relation to the rejection, subversion or bending of rules and regulations. Entrepreneurial bricolage posits that regulations and institutions are a key bricolage domain, i.e., the theory suggests that entrepreneurs are able to solve problems and/or deliver novel services or products through the bending of rules and regulations. Baker & Nelson (2005) provide the example of a mechanic who deviates from standard industry practice to provide a service tailored to a customer that is unavailable elsewhere for terms unavailable elsewhere. Similarly, institutional bricolage, posits that the subversion of rules, regulations and norms in everyday practice is a key process through which institutions simultaneously replicate and change. Cleaver (2012) provides the example of water management in Nkayi, western Zimbabwe, where flexibility surrounding water usage norms has allowed those norms to simultaneously persist and change. Compromises and rule bending are thus important processes for both institutional and entrepreneurial bricolage, and it is here that institutional and entrepreneurial bricolage are inextricably interwoven. Individuals engaging in entrepreneurial bricolage in the institutional domain (as a way to deliver novel services or products) are also engaging in institutional bricolage, perpetuating and changing regulations and norms. Combining these theories is a potentially interesting way to better understand how and why entrepreneurs concomitantly create economic value and shape institutions. This raises the question, how do entrepreneurs engaging in bricolage within the institutional domain contribute to the wider process of institutional bricolage?

One area where the focal bricolage theories differ are in their conceptualisation of determinants, i.e., factors which influence a given individual's ability to undertake these processes. Institutional bricolage casts a lens on authoritative resources as key determinants of its process. As previously discussed, authoritative resources are those that justify institutional position and influence, and the more authoritative resources an individual possess the more capable they are of shaping institutions (Cleaver, 2012). Entrepreneurial bricolage, on the other hand, does not explicitly discuss determinants of its process. It suggests that individuals can recombine various resources to create products and solve problems, but it does not focus on the skills, strategies or resources that influence an individual's ability to engage in bricolage. This is a potential gap in entrepreneurial bricolage; it will surely aid understanding of the bricolage process if theories incorporate and the factors which make individuals successful bricoleurs.

Finally, the theory of entrepreneurial bricolage has evolved the concept of bricolage traps, which may be useful to institutional bricolage. Previous research in the field of management warns against the

potential negative impacts of too much bricolage (Senyard et al., 2014). For example, Lanzara (1999, p. 347) suggests that bricolage is often associated with "second best solutions, maladaptation, imperfection, inefficiency, incompleteness, slowness" where "the outcomes of it are hybrid, imperfect, transient artefacts". Baker & Nelson (2005) suggest that when firms partake in bricolage within several domains simultaneously, then they may get caught in a bricolage trap, restricting their growth. The argument to support this assertion is that that widespread use of bricolage hampers a firm's ability to capitalise on emerging innovations generated through bricolage (Baker & Nelson, 2005). Thus, bricolage traps are an interesting concept used in the theory of entrepreneurial bricolage that could be explored in scenarios relevant to institutional bricolage.

Conclusion

In this review I identify that the conservation literature neglects entrepreneurship, and that the relationship between entrepreneurship and biodiversity conservation has not been adequately explored. I highlight that this is surprising considering the general emphasis on Market-Based Instruments as an approach to conservation. This observation builds on those from key figures in conservation, suggesting that the sector lacks entrepreneurship overall, and that innovation should be fostered within the sector. When examining entrepreneurship, searching for common ground between theories and their applicability to the conservation and development sector, an important set of questions and issues emerge that are relevant to the field of biodiversity conservation.

First, should the conservation and development community care about fostering or mediating entrepreneurship? If MBIs do help advance conservation and development goals relative to other approaches, e.g., protected areas and conservation agriculture, and are preferred by people targeted with these interventions (those living alongside biodiversity) then it is likely that supporting entrepreneurship within the sector is worthwhile.

Second, what are the key processes and determinants that describe entrepreneurial creation of MBIs for conservation and development. Are there entrepreneurial skills, traits or processes that are fundamental when it comes to navigating firm/MBI creation with conservation and development goals? Are there macro-institutional factors that complicate the entrepreneurial process in the conservation and development sector, and does this explain why the sector lacks entrepreneurship as some practitioners suggest? If so, what does this tell us about how the conservation and development sector can foster entrepreneurship?

Third, entrepreneurial theories are divided, meaning multiple entrepreneurial theories have been devised, stemming from diverse academic disciplines, covering only part of the entrepreneurial

process or describing different pathways to value creation and change. This review suggests that these studies and resultant theories persistently exist in academic silos, rarely discussing or referencing each other, 30 years after this problem was initially identified (Wortmar, 1992). This complicates applying an entrepreneurial lens to conservation and development interventions. A key challenge is therefore determining which entrepreneurial theories are most important/best describe entrepreneurship in conservation and development contexts. For example, does MBI creation closer represent entrepreneurial bricolage, or the individual-opportunity nexus? Or is it that these theories do not apply to the case study context, suggesting that alternative models of innovation are needed. As the reader will see, diverse forms of entrepreneurship populate the chapters of this thesis. I will return to the issue of how these forms and theories might be combined in the concluding chapter.

Fourth, how do entrepreneurial practices associated with distinct theories interweave or overlap? Conservation and development interventions fundamentally try to provide alternative livelihoods while altering institutions to more equitable and sustainable configurations. At this stage I hypothesise that commercial and institutional entrepreneurship are inextricable interwoven in conservation and development and are potentially part of a single process of change. Understanding how commercial entrepreneurship creating MBIs is then supported or not by institutional entrepreneurship is a key challenge.

3. Method, Conceptual Framework and Research Questions

Project provenance and research collaborations

I developed the ideas for this research project in collaboration with Professor Dan Brockington and Dr. Bryce Stewart. My motivations for applying to an entrepreneurship focused study of the conservation sector were several. It appealed to my experiences of conservation as a sector. I had spent five years working on large-scale conservation projects across Africa, most of which were seemingly out of touch with realities on the ground. During this time I witnessed a large artisanal fish processing centre built in a location inaccessible to the small-scale fishers it was meant to support. I was paid to teach fisheries models to the staff of governments that lacked the resources to gather the data required or the political will to enforce any form of conservation measures. Unsurprisingly, similar activities have since been a focus of stinging academic critique (see Okeke-Ogbuafor, Gray & Stead, 2020). My first role in conservation was working for a marine voluntourism project in Madagascar which I have frequently accredited with showing me how not to do conservation. Where I have witnessed apparent successful initiatives, I had always met dynamic and committed people at the centre. My experiences left me wondering why so many of the projects and initiatives I crossed paths with seemed so ineffective, and why did the sector not have more of these dynamic individuals.

Dan and Bryce had existing connections with entrepreneurs that had established MBIs for conservation in Mozambique. Dan was connected with Micaia, a network of for and non-profit organisations working together to alleviate poverty and incentivise conservation in central Mozambique. Bryce had connections to Blue Ventures, a well known conservation organisation working on marine conservation issues in several countries and running sizeable voluntourism projects.

Before the project began, I encountered issues with the project partners which changed the shape of the research. In early 2018, Alasdair Harris, executive director and founder of Blue Ventures, informed me his organisation could no longer accommodate my research as they were unfortunately pulling out of Mozambique. He referenced in-country challenges they had experienced launching several projects. This setback was disappointing. Having previously collaborated with Blue Ventures in Madagascar I had met Alasdair Harris and viewed their inclusion in the project as a major draw. Nevertheless, Micaia provided an interesting case study for entrepreneurship. They were actively implementing multiple large-scale projects, operating several conservation enterprises and working across multiple landscapes. I looked for other organisations and market-based instruments operating in central Mozambique, reaching out informally but also conducting a stakeholder analysis with Micaia staff. Unfortunately, my searches came back with few opportunities; my connections in major

conservation organisations (including Fauna and Flora International, Wildlife Conservation Society, World Wide Fund for Nature) all reported only minor activity in central Mozambique. Experienced Micaia field staff told me that other organisations work in Chimanimani, but only for short periods.

This project was therefore established as a collaborative project between the University of Sheffield and Micaia. Micaia is a family of organisations comprising a Mozambican foundation (Fundacão Micaia), a social enterprise (Eco Micaia Ltd.), and three inclusive businesses on tourism, honey and baobab value chains (Ndzou Camp, Mozambique Honey Company and Baobab Products Mozambique respectively), as well as a UK based charity (Micaia UK). Micaia's general mission is to help Mozambican people develop their capabilities to prosper. The organisation adopts a multifaceted approach. For example, Micaia has recently focused on the promotion of sustainable agriculture, natural product enterprises and value chains (including beekeeping and baobab), eco-tourism, practical conservation, and youth led micro-enterprise[1].

Micaia is led by two entrepreneurs, Andrew Kingman and Milagre Nvunga, who are a focus of this research. Milagre is the organisation's CEO and focuses on project implementation and outreach, working closely with communities on a range of issues related to natural resources and livelihood support. Andrew is Managing Director of Eco-MICAIA Ltd and is responsible for business strategy and providing management services to Micaia's portfolio of inclusive businesses. Before establishing Micaia in 2008, both had extensive careers in conservation and international development, Milagre with the Ford Foundation and before that in the Mozambican government, and Andrew as the founder of two development NGOs.

This research focuses on Micaia's beekeeping (the Mozambique Honey Company (MHC)) and baobab (Baobab Products Mozambique (BPM)) enterprises. MHC has been active for over 10 years and started as a collaboration between a Dutch businessman, Andre Vonk, and Eco-Micaia. With support from international funders, e.g., Comic relief and AgDevCO, Vonk and Micaia established a socially inclusive business that trained, provided equipment, and bought honey from rural beekeepers. Beekeepers were written in as co-owners of the business from the outset, with a beekeeping association established to legally hold shares in the company, and a plan to handover more of the business as capacity developed. Today, MHC provides honey to the national market and can be found in supermarkets across Mozambique, with its honeys winning awards at international fairs. BPM was founded in 2015 and was established to provide a fairer market to female baobab collectors. BPM has grown to become one of the largest producers of organic certified baobab from southern Africa. Like

[1] https://micaia.org/

MHC the business is inclusive, with part of the business owned by the collectors. Through these businesses, Micaia claim to have made progress incentivising conservation of forests where they work (Chimanimani and Guro), with participation in beekeeping and baobab being attached to conservation agreements (see assumptions).

Research aims and questions

To explore the entrepreneurial process in the context of MBIs for conservation and development in Mozambique, I will use case studies combined with theories and concepts related to entrepreneurship (informality, institutions, entrepreneurial bricolage, the individual opportunity nexus, transformative agency, institutional bricolage) to explicate and contrast the formation and implementation of MBIs contributing to conservation goals, to understand the actions and determinants involved in these processes, and to investigate the different ways in which MBIs and entrepreneurs are influencing the institutions of communities they target.

1. How do components of Mozambiques macro-institutional environment, support or hinder entrepreneurship within the conservation and development sector?
    a. What economic, political or socioeconomic institutions (rules, practices or beliefs) influence entrepreneurship and how?
2. What impact have the focal entrepreneurial interventions for honey and baobab had on local livelihoods?
    a. How have participants perceptions of the focal resources changed?
    b. How are these interventions perceived by participants compared to other forms of conservation or development intervention?
    c. What do these perceptions reveal about the challenges associated with entrepreneurial interventions for conservation and development in Mozambique?
3. How is the entrepreneurial process relative to the creation of MBIs for conservation and development in Mozambique structured?
    a. What traits and experiences contributed to the entrepreneurs' ability to identify their opportunities and take the decision to create MBIs for conservation and development
    b. What skills have the focal entrepreneurs relied on to create and manage successful MBIs for conservation and development
    c. How have these traits, experiences and skills helped entrepreneurs to navigate institutional barriers to entrepreneurship identified in question 2?
    d. Which entrepreneurial theory, or mix of theories, does the process represent?

4. How do MBIs create change in local institutions and how are MBIs adapted by local actors and with what effect?
    a. What local institutions have been changed or transformed by/alongside the focal MBIs?
    b. What factors support MBIs to create change in local institutions and how do entrepreneurs support their interventions to create change.
    c. How do MBIs participants shape the working components of MBIs through everyday practice and how does this impact on MBI function, especially in relation to their socio-environmental goals
5. How can key theories of entrepreneurship be combined to explain entrepreneurial processes and institutional change in the context MBIs for conservation and development?
    a. How do key concepts from theories of entrepreneurship overlap?
    b. Can these theories be combined to explain the emergence of institutions or businesses intended to deliver environmental benefits?
    c. How can insights from combining these theories be used to illuminate current debates about conservation and market-based solutions?

Research design and methods

The research project used an ethnographic approach to explore the relationship between entrepreneurship, conservation and development. I worked in collaboration with MICAIA, to investigate the interaction of entrepreneurs and their initiatives in two landscapes across the Mozambican province of Manica, Chimanimani and Guro. I used four methods to gather data on entrepreneurship. First, I used stakeholder analysis to try and identify entrepreneurs and different forms of entrepreneurship that have contributed to conservation and development outcomes across the focal provinces. Second, I used qualitative interviews with identified entrepreneurs and key individuals/groups participating and/or effected by entrepreneurial innovations to gather data on the the entrepreneurial process and outcomes of entrepreneurial action. Third, I used participant observation to gather data on the focal MBIs, observing how staff in charge of implementing these initiatives in the field. Fourth, I used a household survey, focused on the communities interacting with the focal interventions, to gain an understanding of the impact of entrepreneurship and MBIs on rural communities.

The research project formed an intensive study using participant observation and interviews to research a small number of participants. Research was conducted during 2019. This approach sought to extensively study how entrepreneurs interact with their MBIs and businesses to understand how the processes of entrepreneurship work in particular cases (Sayer, 1984) and shape MBIs. In 2021, I had

the opportunity to collaborate with Micaia further, working with them on a 14-month post-doc project focused on NGO accountability. The following section discusses the study sites and collaborating organisations before discussing each method in turn.

Micaia, the focal entrepreneurs, MBIs and study locations

As previously discussed, this project was established as a collaborative project between the University of Sheffield and Micaia. As a collaborative project, the partner organisation facilitated the research project in several ways. For example, by acting as entry points and facilitating community acceptance, providing a source of background information through their existing reports and data, and as a source of local language skills. In return, Micaia staff had several expectations of the research project, and a direct interest in the objectives of the project. For example, Micaia had not undertaken a formal evaluation of the determinants that have fostered or constrained entrepreneurs working with them. Micaia staff were also interested in identifying new micro-entrepreneurs to collaborate with in the future. Therefore, Micaia expected to gain insight on key individuals identified as entrepreneurial by this project. Moreover, Micaia had a general interest in a qualitative evaluation of the impact of their MBIs on local communities. Until this project their monitoring was based around quantitative indicators focused on outputs (such as numbers of meetings conducted, number of hives distributed, money paid to beekeepers), and they were therefore interested in in-depth evaluations which can illuminate the ways their initiatives are influencing the communities they work with. To ensure I satisfied the expectations of the partner organisations I undertook the following actions: 1) a formal consultation with the staff of the partner NGOs to establish the questions they would like answered from a research project on entrepreneurship. 2) Reported all findings back to the conservation NGOs through presentations and a tailored technical report. The post-doctoral research focused on accountability provided a key opportunity for me to feedback findings from my research with Micaia. This led to significant reflection by Andrew, Milagre and their staff on their businesses and the way Micaia interacts with rural communities.

The research sites were located in two districts, Sussundenga and Guro, in Manica province in Mozambique. Manica province is located in Central, Western Mozambique and borders Zimbabwe to the west. Sussundenga district is located in the south of the province and has a tropical climate with an annual rainfall of 1,200 mm[2]. Guro is located in the north of Manica and borders Tete province to the north. It has a semi-arid climate with average annual rainfall of 632 mm[3]. I collected focused information on the impacts of the honey and baobab trade from six communities. Two communities in

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[2] Sussundenga District - Wikipedia
[3] Guro District, Manica Province - Wikipedia

Guro (Nhamassonge and Cabermunde) involved with BPM's baobab trade, and four communities in Sussendenga (Mussapa, Mpunga Centro, Mucawaio and Muoco) involved with MHC's honey business (Figure 3; for more information on how communities were selected see Research methods). The four communities in Sussendenga are located at the base of the Chimanimani mountains, in the west of Manica province and are part of the buffer zone of the Chimanimani National Reserve.

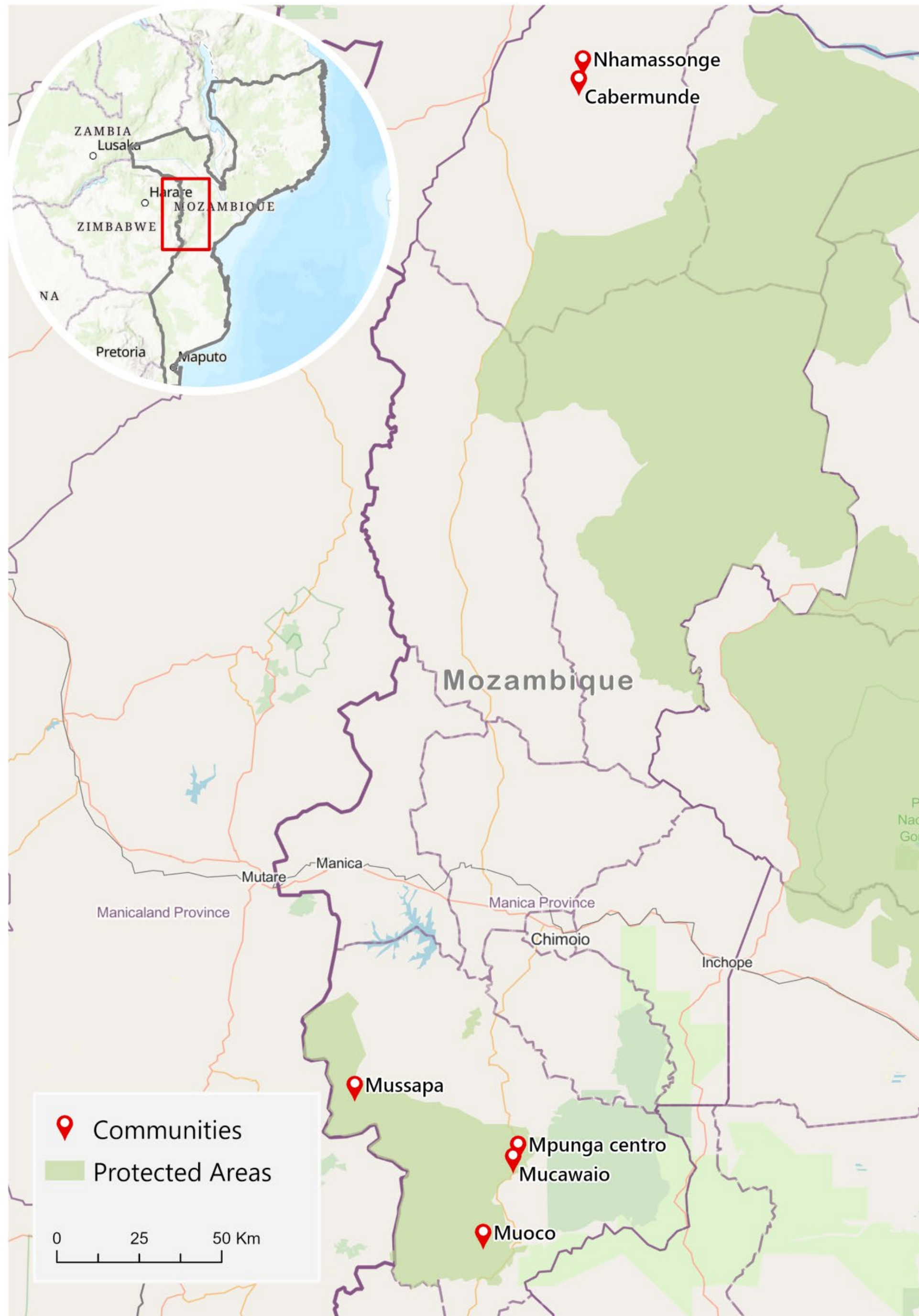

Figure 3. Map showing primary study sites: six communities across Sussedenga and Guro districts, Mozambique

During my time in Mozambique, I visited approximately thirty rural communities across both landscapes. I visited many of these communities as part of the participant observation process, where I accompanied Micaia field staff dispensing their core activities related to the businesses or NGOs. For example, I visited the communities of Matoe (Chimanimani) as I travelled with Micaia field staff to deliver beekeeper training and equipment. I visited Zomba, a large, isolated community in the south of Chimanimani during Micaia's efforts to provide emergency support in the aftermath of cyclone Idai. I also visited other communities as part of additional research I conducted. For example, I visited eight communities between Chimoio and Chimanimani to conduct a survey on charcoal value chains supplying the city of Chimoio. I visited twelve villages across Guro and Tambara as part of single, week-long survey focused on household incomes and gendered roles relating to money. I participated in both these activities for multiple reasons: I was keen to participate in Micaia activities as part of the participant observation process; I was keen to practice my research skills as a novice social scientist; and, I felt it was important for me to be of some practical use to Micaia and to help build rapport.

MICIAIA implements a range of MBIs with the dual goals of developing the local communities and conserving the Chimanimani national park. Processes of commercial entrepreneurship are highly relevant to MICAIA's MBIs as, first, they have involved the creation of several new businesses and supply chains, such as MHC, BPM, and Ndzou camp (tourism). Second, MICAIA has sought to promote socio-environmental entrepreneurship within their focal communities, not only recruiting individuals to participate in MICAIA-led MBIs, but equipping individuals with the skills they need to become entrepreneurs themselves. Thus, these communities should exhibit examples of socio-environmental micro-entrepreneurship which are independent of Micaia main initiatives. Institutional change and entrepreneurship are also highly relevant as Micaia's initiatives and communities. Foremost these initiatives seek to alter communities' norms and beliefs surrounding livelihoods (e.g., appropriate roles of women) and natural resource management (e.g., attitudes toward uncontrolled fires and the value of biodiversity). Second, the collaborative nature of these MBIs means that the local communities have shaped and adapted these initiatives in a variety of ways, making these MBIs highly relevant to the research agenda proposed by Van Hecken et al. (2015, 2018, see chapter 2). In sum, MICAIA's activities and field sites offered an interesting focus for the study of the processes of institutional and commercial entrepreneurship in relation to MBIs and address key gaps remaining in the MBI literature.

I engaged with, interviewed and observed a number of different respondent groups. Andrew and Milagre were of course key informants as the focal entrepreneurs of this project. I interviewed Micaia staff across the businesses, primarily field staff that had spent time working with communities. I interviewed people throughout six communities (see below) where Micaia worked. These included participants of the businesses; beekeepers or baobab collectors that produce and sell to MHC or BPM.

Within communities, I spoke to Micaia's lead beekeepers and lead baobab collectors. Individuals that help Micaia to organise their annual buying campaigns, spread messages and train others. In return, these individuals receive a payment proportional to the volume of baobab or honey their community produces (0.5 MZN / 0.0079 USD per kilo sold by their community). Other key informants included the Regulos or Mambos (leaders or chiefs) of each community and other influential elites.

To conduct the research project, it was necessary to learn Portuguese. Mozambique is part of the Lusophony where English is not widely spoken. To learn Portuguese, I had lessons through The University of Sheffield before field work began. I also successfully applied for a funding extension which gave me the required time in country to learn the language. The extension was essential as I did not find learning Portuguese intuitive or easy. The grant therefore gave me the time I personally needed to immerse myself in Mozambique and develop my language skills. It was a necessary step as the majority of the interviews I conducted were in Portuguese. Household survey interviews were conducted in local dialects, but responses were translated into Portuguese as I could not find a research assistant that spoke English.

Epistemology & Ontology

Epistemology relates to the various ways we can know and learn about the social world (Ritchie, 2013), and how we try to ensure knowledge produced is adequate (Maynard, 1994). Different epistemological positions have evolved with social research, e.g. positivism, interpretivism, pragmatism and critical realism. Each of these standpoints relate to different views regarding the nature of the social world and how research on the social world should be conducted. For example, different stances what can be considered as truth (real or observed world), the impact of the researcher on the research process (objectivity), the ways knowledge should be generated (inductive or deductive), and the methods that should be used (qualitative or quantitative) to study the social world (Ritchie, 2013).

Reflecting on my epistemological leanings entering this study, my preferences could be characterised as positivist, prioritising and putting a higher value on quantitative research, considering reality to be fully observable, and underplaying or even failing to acknowledge the impact of the researcher. This leaning was however not due to any specific beliefs I held about knowledge or how it should be obtained. This was primarily due to my education in the natural sciences and conservation, which had not promoted engagement with the concepts of epistemology and ontology. A positivist standpoint however suffers from several critical flaws, e.g. its objectivist epistemology assumes that we can simply observe the real world as is, which fails to recognise the ways people, theories, experiences and views can influence observations.

For this study I adopted a critical realist epistemology, which is much more closely aligned with my views on truth and knowledge. Ontologically, critical realism 1) acknowledges and distinguishes between the 'real' and 'observable' world. 2) acknowledges the causal powers of human agency and social structures. For the critical realist position, the known world is constructed from what is 'observable', filtered through our perspectives and experiences. The 'real' world, or most of reality, is invisible to the observer. Unknown and unobservable structures exist below the surface and can cause observable events. The position therefore assumes independent structures exist that can hinder and facilitate the agency of actors in a focal setting (Tao, 2016). A critical realist position seeks to understand the interplay of structure and agency (Bhaskar, 1998), searching for the causal mechanisms through a focus on the effects of human agency within their contexts. Causal mechanisms can be identified through a process of inference from a position of judgemental rationality, which allows the fit of different theories to be tested and the theories with most explanatory power to be selected based on their fit to the domain of real life. (Hu, 2018). As this studies research questions relate to illuminating patterns, underlying structures, and embedded power relationships that constitute entrepreneurship in rural Africa, critical realism fit as an appropriate philosophy for this study. Moreover, testing the fit of different theories of entrepreneurship to explain observations of entrepreneurship aligns with the strengths of critical realism.

Positionality statement

There are multiple dimensions to my positionality which influenced my research. I am a white British male. At the time of the research, I was in my early thirties. I grew up in post-industrial Central Scotland. I had previously worked in various roles in conservation that had shaped my perceptions of international conservation and development, including multiple years working on conservation projects overseas and for a consultancy in London. I was therefore an outsider of a different nationality and race to almost all of the subjects of this research. My positionality influenced my research and created several ethical and practical dilemmas while conducting my research.

As a social scientist studying the rural poor, one of the fundamental issues relates to the benefit gaps and extractive relations between myself as a researcher and the participants. The benefit gap is related to when field research establishes a unidirectional flow of information which benefits the researcher far more than the researched (Mitchell, 2013). When planning this research, I did not see the benefit gap as an issue. I envisaged that project and interactions with research participants would be relatively unintrusive, requiring relatively short interviews about uncontroversial topics. Nevertheless, I met several people that spoke candidly about their interactions with western development workers and projects in the past. They were generally weary of people repeatedly asking questions about

environmental and development related issues, all the while their lives did not change. They spoke explicitly of the ineffectiveness of research and development, a constant stream of seemingly important people sent to gather information but with the overarching objective of designing projects to alleviate poverty. This changed my perspective of the benefit gap. Suddenly I was acutely aware of the benefit gap I created between myself and the researched and its contribution to a much larger gap that had grown between my focal communities, researchers and development practitioners over many years. The words of one person from Muoco have haunted me, '*despite all these projects little changed. It is mostly talking and more talking…We are still poor…they must be eating [stealing the money meant for rural communities]*[4]'. In that moment all I could think was that the resources from my project could have been better spent.

My position as an outsider to rural communities had both advantages and disadvantages. Merton's long-standing definition of insiders and outsiders is that 'Insiders are the members of specified groups and collectives or occupants of specified social statuses: Outsiders are non-members' (Merton, 1972). It is clear that my position as an outsider prevented people speaking honestly about certain subjects or shaped what they wanted to discuss with me. For example, it was only those that I got to know well (interacted with on multiple occasions) that spoke about sensitive topics related to agriculture expansion and hunting in the Chimanimani buffer zone. Chapter 8 is potentially where my positionality has had the most impact, where I asked communities about changing gender norms and its links to honey and baobab enterprises. Given the agenda of Micaia and other NGOs or agencies to promote gender equality in rural communities, it is likely that change toward less patriarchal practices was overstated. Similarly, in chapter 1, which discusses the impacts of beekeeping, a small number of people gave enthusiastic accounts of the transformational impacts of beekeeping on their livelihoods despite having sold not a single drop of honey. As I discuss in chapter 5, some people were afraid that reporting negative realities of beekeeping to an outsider, believing this would somehow result in project support being withdrawn. Many viewed me as a link to Micaia and development organisation in general. Someone to relay messages through about their wants and needs, e.g., community members in Mpunga asked me why they had been left out of projects while their neighbours benefit. Paradoxically, to the rural poor of Chimanimani and Guro I was someone that should not be complained to, but simultaneously someone that presented a rare opportunity to have their voices heard. On reflection, this dual position is clear in my research, with some respondents opening up and presenting candid accounts while others remained guarded.

[4] Source 1

Before fieldwork began my research was subject to an ethical review process. The ethics application included a summary of the research objectives, the methods, personal safety precautions, as well as a description of the potential participants, recruitment processes, consent and potential harm to participants. Key issues flagged in the review related to consent and gatekeepers. Gaining consent is an essential part of the research process but is somewhat complicated when research is focuses on vulnerable or marginalised people. I created comprehensive consent forms in English and translated them to Portuguese (Appendix 2. Consent Form), but as previously discussed, only a small number of participants accepted the consent forms. The majority of my participants could not read, necessitating verbal consent. Furthermore, people that could read were wary of documents requiring a signature. During the household survey, only a handful of people failed to provide consent and terminated the interview before it began. I however encountered multiple respondents that were seemingly unwilling participants, individuals that gave curt answers and refused to elaborate. This may have been some misunderstanding between myself and the respondents, but my interpretation was that they were only participating in the interview out of politeness or obligation.

Gatekeepers were a reality of conducting research in Mozambique. Generally, I experienced few issues with gatekeepers within the communities. I ensured that I took the time introduce myself to community leaders before starting research. The biggest issue I had with gatekeepers was within Micaia itself. Some staff working on beekeeping and baobab collection clumsily tried to steer me towards certain communities. These staff were helpful and open to connecting me with communities they had good relationships with, but frustrated my attempts to make connections with other communities where cordial relationships were absent. This manifested in Micaia staff trying to steer me toward the communities that were the best performance in terms of honey and baobab production, and away from communities that had tense relations or conflicts. For the poorer performing communities such as, Mpunga and Muoco, I made my own connections with the community leaders (Regulos) during a training event for beekeepers.

Research methods

Phase 1. Stakeholder analysis

I used methods associated with stakeholder analysis in an attempt to identify entrepreneurs contributing to conservation and development outcomes in Manica provinces of Mozambique. Stakeholder analysis takes a variety of forms. Reed et al. (2009) suggests that stakeholder analysis involves three core steps: Identifying stakeholders, differentiating stakeholders, and investigating relationships between stakeholders.

Following the stakeholder analysis approach detailed in Prell et al. (2009), I conducted focus groups with staff MICAIA Staff to identify entrepreneurs, NGOs and associated MBIs operating in Manica province. During the focus group, I explicitly asked NGO staff to identify entrepreneurs involved in the field of conservation and development, providing illustrative examples. Then, I categorised the identified individuals according to the sorts of institutions in which they work. Categories included international conservation NGOs, community conservation organisations, government bodies, private businesses, key community members.

Phase 1. Qualitative interviews

I conducted fifty-one qualitative, semi-structured interviews (Appendix 8. Interview questions – adaptation of MBIs and entrepreneurship) with the focal entrepreneurs and their staff. Interviews ranged from 15 mins to 160 mins and covered diverse topics aimed at illuminating the entrepreneurial process. For example, I interviewed Andrew and Milagre on the events and decisions that led them to start their own organisations, and I interviewed almost all Micaia staff on their roles and their work with rural communities. Semi-structured interviews can be defined as interviews which follow a checklist of topics, but where the order can be modified based on flow, and unplanned questions can be asked (Bryman, 2016; Robsen & McCarten, 2016). Semi-structured interviews are an appropriate method to answer the research questions for two reasons: 1) Follow up questions will allow different dimensions of the entrepreneurial process and impact to be discussed in detail; 2) Using interviews allows participants to discuss their past actions as entrepreneurs/ as employees during a relatively short time span. This is a distinct advantage of using interviews over observations, which would require considerable time to gather the equivalent data (Bryman, 2016). Free, prior and informed consent was gained from all the interviewees

For many of the interviews I used an interview guide to steer the process, but most interviews were ad hoc and opportunistic, focusing on topics or events that emerged suddenly in the field. For example, I conducted a two-hour interview with Milagre on the functioning of community organisations within Chimanimani when I encountered her unexpectedly in the field. All interviews with entrepreneurs started by asking the focal entrepreneurs to provide a general account of their entrepreneurship and MBI. Building on this general description, I asked interview participants to discuss, in turn, their key actions in founding the focal MBI, the conditions that have aided or hindered their success or failure. I recorded interviews using a Dictaphone, when consent was given, and transcribe interviews into English to facilitate analysis. Analysis of the interview transcripts followed a framework approach to thematic analysis (Bryman, 2016). I conducted interviews with Andrew and Milagre in English and with Micaia staff in Portuguese.

Phase 2. Observation/Participant observation

I used participant observation to gather primary data and triangulate information gathered through the qualitative interviews. Participant observation is a qualitative research method that involves directly watching and interacting with the researched in their natural environment (Spradley, 2016; Bryman, 2016). Participant observation therefore necessitates that researchers immerse themselves in the social setting of the researched. Through this immersion, an in-depth and nuanced understanding of the social setting can be developed (Bernard, 2011; 2017). For the participant observation process, I observed focal entrepreneurs responsible for the creation of MBIs, and also their staff charged with executing the essential functions MBIs.

I first established rapport with the Andrew and Milagre entrepreneurs and their staff and gained consent to conduct research and observations. I conducted observations on two main levels. First, I immersed myself in Micaia by using their office space and observing and interacting with the entrepreneurs and staff during their daily routines. I made an applied effort to observe events and behaviours that could provide insight into the management and functioning of the organisations. For example, when staff had feedback meetings or when they entertained donors; Second, I observed Micaia staff in the field Informal conversations with the entrepreneurs and staff were also invaluable to gain further insight into the entrepreneurial process and impacts. I recorded data and observations primarily using field notes. To consolidate the data I transcribed it, using NVivo (Lumivero, 2020) to apply a framework approach to thematic analysis. I added to this dataset with my postdoctoral research data (see data processing and analysis section).

The participant observation had several objectives. Foremost it sought to observe the processes and agency behind the creation and/or implementation of MBIs. Second, to observe how MBIs are reworked and adapted by individuals following implementation through everyday practice. Third, to gain insight into the impact of MBIs on the institutions of the communities they have been implemented in. Throughout the research I made observations of staff from all of Micaia's organisations, collaborating with them on several small projects and tasks. Observations of staff and entrepreneurs therefore took place at two levels:

The first observations focused on the founding entrepreneurs and primarily occurred within the headquarters of MICAIA. This group of observation sought to understand the actions and strategies these entrepreneurs, to create and guide the implementation of the MBI, the determinants of this process, and also how they are reworking and adapting their organisations. During my time at MICAIA, I participated in both formal and informal meetings associated with various development

projects, such as Mozbio[5] . The second level of observations focused on the field, Micaia staff and their interactions with local communities. This sought to understand how the MBI functioned in the field, as represented by the everyday agency of Micaia staff, and to also understand the role of local communities in reworking and adapting the initiative.

Phase 2. Household Surveys

I used household surveys to gather data on the impacts of MBIs on livelihoods and gain an understanding of local perceptions toward MBIs and the focal businesses. In total I conducted 257 interviews across six communities.

Four questionnaires were initially developed, each focusing on a different group characterised by their participation in the focal businesses (Appendices). One questionnaire focused on beekeepers in Chimanimani, people that did not participate in beekeeping in Chimanimani, baobab collectors in Guro, and people that did not sell baobab to BPM. I initially piloted questionnaires with beekeepers and collectors that had good relations to Micaia, facilitating candid views of the questions and rapid adaptation. The first questions on all questionnaires were filter questions to determine if individuals were participants or non-participants of Micaia's businesses. Each questionnaire was split into four sections. The first section focused on livelihoods and entrepreneurship. It asked respondents about the range of livelihood activities they engaged in and asked them to reflect on the relative importance of different livelihoods to them. For beekeepers and collectors this included targeted questions on the importance of beekeeping and if their perceptions of beekeeping, baobab and the resources have changed over time. Where respondents identified businesses as a main livelihood, I asked for histories of those businesses; how they first entered into that business and how the business had changed and grown. The second section focused on gender, if and how gendered roles had changed in relation to work and household activities, with focused questions on gender roles n relation to beekeeping and baobab at the end of the section. The third section focused on interactions with NGOs and businesses, their satisfaction with NGOs and businesses and perceptions of the impacts of these groups. The fourth section focused on environmental governance, asking about practices relating to environmental management and forest use. Topics commonly discussed related to fire management, activities of community environmental groups and the rules around use of natural resources in Chimanimani, both formal and informal. I frequently adapted the questionnaire, focusing on sections that were most relevant to the individual respondent.

[5] https://www.worldbank.org/en/news/press-release/2018/09/20/world-bank-approves-45-million-to-strengthen-mozambiques-conservation-areas-and-increase-rural-resilience

I selected the communities for the household survey based on production and accessibility. When designing the survey, I wanted to understand the perceptions of communities that effectively engaged with MHC and BPM and had high honey/baobab production. I thought it would be interesting to compare and contrast these perceptions with those that had seemingly not engaged as well and where production was consistently low. I aimed to understand what drove the disparity. Mucawaio, Mussapa and Nhamasonge were all high performing communities, i.e., those that sold the most baobab and honey to MHC. Muoco, Mpunga and Cabermunde were all poorly performing communities. However, I had to wait until the results of my post doctoral research to understand the factors affecting production between communities.

Before beginning the survey work, I first tried to establish rapport with community leaders and members through meetings during the participant observation process. Accompanying Micaia staff on field work and to trainings gave me several opportunities to present my research to people and ask if they were interested in hosting my research.

Sampling design involved sampling households on transects, walking from household to household over multiple days. To prevent bias toward sub communities or specific areas within each village I walked in a different direction each day to ensure I was not sampling from the same area on multiple occasions, and that I visited each distinct neighbourhoods in a community. The intention was to conduct sixty interviews in each community, 30 participants and 30 non-participants. I however fell short of this target in several communities where there were not enough participants or non-participants. For example, in Mpunga it was impossible to find thirty individuals actively involved in beekeeping as the majority of hives had been destroyed in a fire. In the northern, baobab collecting communities it was not possible to find thirty individuals that did not collect and sell baobab to BPM.

I began each interview by gaining consent. As most respondents did not read or write I obtained consent verbally and recorded it on a Dictaphone. A translator conducted the interviews in Ndau and Chewa through a translator. Ndau is a Bantu language similar to Shona, widely spoken in Zimbabwe. Chewa is a Bantu language spoken in Malawi and a recognised minority in Mozambique.

Responses were recorded directly using kobo toolbox which saved responses to the cloud automatically.

Despite asking the same overarching research questions of the honey and baobab enterprises I adopted different approaches to conducting the household survey and researching the communities between the two study sights, Chimanimani and Guro. I.e. I focused on different topics and questions in interviews between the two sites. This shaped the data available and explains why my write up of the same research questions on the impacts of honey and baobab in chapters 5 and 6 present

different forms of data and slightly different structures. The differing approaches were adopted for several reasons. Foremost, my objective was to be inductive and avoid shaping the research with preconceived ideas. The questionnaires I created were split into broad topics relevant to impacts of entrepreneurship and provided significant space for the researched to guide interviews towards the factors they viewed as important. My research was therefore heavily guided by the researched. For example, in Guro I spent a significant amount of time discussing the informal market for baobab that had existed before MHC, and how MHC's market had interacted and competed with that market because people had stories about their interactions with this previous market. On the other hand discussions of the previous market were comparatively brief as no significant market for honey had existed before. Similarly, in Guro, people wanted to discuss the negative impacts the baobab market had when there was a temporary drop in demand (see chapter 9). Second, Micaia had different quantitative data available on the honey and baobab markets. For honey, buying records were well organised, computerised and accessible for analysis, which allowed me to perform more quantitative analysis and breakdown of payments between communities across years. The same information was not available for BPM and baobab market. Despite my best attempts to access buying records for this information, I encountered a gatekeeper that did not want to share this information. Third, I had limited time with the baobab collecting communities in Guro due to my research coinciding with national elections (see assumptions and challenges below). If I had more time in these communities it is possible I would have discovered a greater number of smaller impacts (both negative and positive). This would have permitted a more comprehensive account of the everyday challenges similar to chapter 5.

Data processing and analysis

All data from interviews, household surveys and key observations were coded using NVivo software. Coding occurred after I returned from fieldwork and generally followed a four-step process:

1. I first read through the data to become acquainted with the material, taking general notes on interesting, significant or unexpected points.
2. I started with initial coding giving codes to small portions of text by asking three general questions, e.g. what is this item of data about, what are people doing, what do people say they are doing. This lead to a large number of nodes, sub-nodes and duplications/similar nodes.
3. I then reviewed codes to remove duplications, bring in key concepts from entrepreneurship, and sketch initial connections between codes. Several concepts / terms from theories of entrepreneurship replaced codes, e.g. separately coded stories discussing different types of skill shortages at Micaia, difficulties with recruitment and subsequent

promoting within the ranks were recoded under Bricolage – Labour; interactions with banks, donors and fundraising events were recoded as resource seeking. I also drew connections between codes, e.g. I linked blatantly exaggerated accounts of the impacts of interventions on livelihoods to discussions of culture within communities and their fear of being excluded from future interventions.

4. I queried and visualised the data, using word frequency checks and NVivo visualisation tools to see if key words had been left out of the coding.

Following this initial coding, I used framework approach to thematic analysis, commonly referred to as a matrix approach to thematic analysis (Ritchie & Lewis, 2003), to help determine key themes and narratives associated with my main codes and determine sub themes. Thematic analysis is a flexible approach to the analysis of qualitative data. The framework approach is not exclusively linked to a theoretical framework (Robsen & McCarten, 2016), but has been extensively used for qualitative data analysis in social research (see Wood et al., 2014; Brooks & Waters, 2015). Following coding, I used the following steps for thematic analysis as detailed in Bryman (2016),

1. I grouped codes into key themes relevant to each research question. This reduced the number of codes in the analysis.
2. I then wrote summaries of each of the key themes, taking note of the strength of individual codes relative to others under the theme. I marked significant cases which seemed to either exemplify themes / subthemes, or where conflicting information was provided
3. I examined possible links and connections between each theme grouped under specific research questions, but also between themes
4. Finally I wrote narratives for each theme, which provided the bulk of the empirical sections of this thesis.

To provide deeper analysis and insight for discussions, I applied theoretical lenses associated with commercial and institutional entrepreneurship to the narratives and themes. Where narratives or themes related to theories, or components of theories, I interrogated these further, testing theoretical relationships defined in the literature testing their degree of fit to the context observed. Where theoretical relationships held or differed these were noted.

Quantitative information was analysed using exploratory statistics in SPSS (IBM,2020). Associated graphics were also produced in SPSS.

Assumptions and challenges

I experienced several difficulties and challenges that impacted the shape of my research. One challenge related to the refusal of important informants to participate in my research. Andrew and Milagre were always forthcoming and never refused my continuous questioning about their interventions and actions. I am lucky this was the case. Some of their staff were however hesitant to participate in my research and many refused to be formally interviewed, or agreed but continually evaded my attempts to pin them down. It is clear the consent and formality of the process put many of these respondents off the research as they did not want to sign a consent form or give recorded consent. For others they consented to be interviewed on some topics but not others. One staff member stopped our interview when I questioned about the processes of land delimitations, suggesting that mistakes had been made and they consequently did not want to discuss it. I attribute other refusals to participate in interviews to their perception of me reviewing and assessing their work. My interpretation is that I was viewed by a small number of Micaia staff as an auditor or appraiser, there to police their work and report it back to the heads of the organisations.

A second dimension that limited but also informed my research was an apparent lack of NGOs operating / working with communities in the same communities / areas of Micaia. When conducting stakeholder analysis with Micaia staff, they could name few organisations, NGOs and entrepreneurs working with the communities. This was later confirmed in informal conversations with staff working with the German Development Bank where they suggested that Micaia and MHC were the only organisations doing more than occasional projects in the area. This was one reason I refocused my study to include a household survey.

Cyclone Idai hit Mozambique on the 4th of March 2019. It was a devastating tropical cyclone, leaving 1,500 people dead across the Southwest Indian Ocean Basin and causing a humanitarian crisis across Mozambique, Zimbabwe and Malawi[6]. It directly impacted the communities I was researching and led Micaia to stop work and engage in disaster relief, raising funds and distributing food and supplies to the communities most effected. I stopped my research for several weeks and provided as much support to Micaia as I could. I helped to load trucks and organise goods. I also designed several surveys and conducted interviews with some of the people most impacted. This information was used by Micaia and other NGOs, such as Save The Children, to target their disaster relief.

The timing of national elections also created challenges for my fieldwork and led me to truncate my research in the northern communities, reducing the household survey from four communities to two.

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[6] https://www.theguardian.com/world/cyclone-idai

After spending several days in Cabermunde, I was summoned into the Regulo's compound late one afternoon. He was clearly drunk and proceeded to accuse me of being a spy, sent by Renamo to gather information on his community and to influence the upcoming election. I responded by suggesting that was ridiculous and did my best to demonstrate, using my phone pictures, that I had a life in another country and therefore could not possibly be part of Mozambique's opposition. After the Regulo became bored of my photo tour of my family and walks in the Peak District, I had seemingly allayed his fears and he permitted me to continue my research. I was a little unsettled by the encounter and struggled to process it. I was unsure if he seriously believed what he said, if he was just drunk, or if he had an ulterior motive and wanted to leverage me for some sort of pay off. The political divide in Mozambique casts a long shadow and is at the forefront of people's minds, especially in central Mozambique.

After spending a few more days in Cabermunde, my local guide confirmed that these rumours were widespread. '*People are saying that you are Renamo. They are not sure what you are doing. Some suggest that you are getting people to vote against the government*[7]'. It was, admittedly, not an ideal time to be asking questions. Violence was escalating across Mozambique[8], culminating in the high-profile assassination of an election observer[9]. I had been relatively unphased by the election and associate violence, choosing to continue my work in remote northern communities as I was seemingly far removed from any disturbance. I informed Micaia staff of my experience with the Regulo and the apparent rumours. They were quick to warn me to leave the community. When shootings started to occur on my main route to the study sites, the issue was seemingly settled, and I chose to wrap up my time in Mozambique.

A key assumption of my work relates to the link between the focal enterprises and conservation. I argue throughout this thesis that the entrepreneurship on display and subsequent findings occur in a setting relevant to and thus have implications for conservation. I assume these enterprises are relevant to conservation as they have explicit objectives of incentivising conservation and reducing land degradation, occur in conservation priority landscapes (areas of relative high biodiversity value and forest cover), and organisations such as the World Bank accredit Micaia's interventions with reduced land degradation[10]. Enhanced conservation is apparently achieved through the provision of improved incomes and conservation agreements, which make it explicit that the income and other support

[7] Source 13
[8] https://www.dw.com/en/violence-threatens-mozambican-elections/a-50678227
[9] https://www.hrw.org/news/2019/10/09/mozambique-police-linked-killing-election-observer
[10] https://documents1.worldbank.org/curated/en/396531619165338914/pdf/How-Mozambique-s-Conservation-Areas-Can-Support-Ecosystems-Increase-Economic-Development-and-Improve-Community-Livelihoods.pdf

communities receive from Micaia, including access to the baobab and honey markets, are contingent on abiding by specified rules. For example, beekeepers living in the buffer zone are of Chimanimani have signed agreements that they will respect the rules associated with the buffer zone (no new expansion of crops or settlements in the buffer zone), whereas collectors in Guro sign contracts committing them to the long-term preservation of the areas baobab forests (e.g. through responsible fire management). As the objective of this work was to understand the underlying processes of entrepreneurship, relationships and local attitudes to entrepreneurial interventions in conservation contexts, I did not attempt to verify the conservation claims of these initiatives by studying their effectiveness in generating conservation outcomes.

As the enterprises intend to have an impact on conservation, they are relevant to the study of entrepreneurship in conservation. However, it was beyond the scope of this work to chart precise conservation impact. That is a task for further research. Nevertheless, this study is relevant to conservation more generally because it precisely through the sort of enterprises I have studied–community-based natural resource-based enterprises—that many conservation organisations and initiatives are hoping to have a positive impact. This work focuses on communities living in areas acknowledged for their conservation value and the communities there are the focus of national and internation conservation efforts. Future work could seek to verify the conservation claims of Micaia and establish links between specific impacts on natural resources and entrepreneurial processes on display.

Conclusions

Overall, components of my research worked well whereas other components failed and required drastic adaptation or ended in poor quality data. One aspect that worked well was the collaboration between myself and Micaia that developed and grew stronger during the post-doc. Andrew, Milagre and their staff engaged with me and were helpful in facilitating my research. Apart from a select few that were previously discussed. The relationship was truly collaborative: I helped the organisation conduct several pieces of research that helped them complete project work or inform their adaptive learning (e.g., charcoal research). The relationship therefore felt reciprocal and balanced. In total I spent 12 months in Mozambique and, several months in the communities which maximised my ability to understand the context.

The interviews with Andrew and Milagre and their staff worked extremely well. I talked to Andrew and Milagre both formally and informally about their work for dozens of hours. I was lucky to have such willing participants for my PhD. Most of the staff members were the same, happy to talk about their

work and the role they played at Micaia and in the field. Staff not only spoke about what worked well but also what did not work so well, with several candid accounts of mistakes. The semi-structured nature of the interviews was the correct choice of method as conversations often strayed from the intended topic to important activities in the field. On the occasions that I overprepared for interviews, i.e., had too many questions, this restricted my ability as an interviewer as I tried to move the subject on or was worrying about not asking the questions. One aspect relating to the interviews that I found difficult was the transcription process. I began transcription as covid took hold and lock down began in 2020. This should have been an ideal time to focus and transcribe my interviews. After a strong start I found the process excruciating and made slow progress.

The household survey was a high point in my research, resulting in much interesting data about livelihoods in Mozambique and the focal MBIs. Parts of the household survey worked well whereas others did not. Initially the questionnaires were too long, leading to the initial respondent's slight frustration. I adapted the questionnaire in the field, and, after a tricky start, I had tailored the questions so they generated some interesting and thoughtful responses. As previously discussed, multiple respondents were guarded and did seemingly not want to discuss livelihoods and their interactions with Micaia. The collaboration with my research assistant worked well. He was hard working but originally struggled with my desire to elicit descriptive and lengthy responses from the interviewees.

An area of difficulty was trying to understand environmental institutions. Asking people in the communities about environmental institutions yielded rich answers about how they managed fire, the rules associated with the buffer zone of Chimanimani versus traditional rules, and the actions of community natural resource. Unfortunately triangulating the accounts was difficult. They were contradictory and inconsistent. I directly observed people doing the opposite of what they said they do. I listened to seemingly passionate accounts of the activities of village natural resource committees only to have this dismantled by the next respondent claiming that these committees were no longer active due to a lack of incentives. I therefore found it difficult to piece together a coherent account of natural resource management institutions and subsequently dropped this from my analysis.

4. The Mozambican context: the entrepreneurial environment and NTFP commercialisation in a donor darling

The overarching aim of this chapter is to provide the historical and institutional context required to help answer my study's overarching research questions. To provide context for the analytical and empirical investigation to follow, this chapter reviews Mozambique's transition from colonialism to independence, the emergence of its major political players, its relationship with development donors, the modern economic, political and socio cultural environment and its influence on entrepreneurship, NTFP commercialisation in Mozambique, specifically the two focal NTFPs of this study, honey and baobab. The chapter has the following three objectives:

1. to provide an overview of Mozambique's modern history and development.
2. to explore the modern institutional environment in Mozambique and provide a summary of how this may influence entrepreneurship.
3. to understand the current state of exploitation / degree of commercialisation of NTFP enterprises in Mozambique, specifically the two NTFPs that are the focus of this study, Baobab and Honey

Through these objectives this chapter will contribute to answering my first research question of my thesis alongside empirical data presented in Chapter 7.

How do components of Mozambiques macro-institutional environment, support or hinder entrepreneurship within the conservation and development sector?

Mozambique's transition from war to post conflict donor darling

Mozambique borders Eswatini, Malawi, South Africa, Tanzania, Zambia and Zimbabwe. It has a long coastline on along the Indian Ocean of over 2,500 kilometres facing Madagascar to the East. The country boasts a significant area of arable land coupled with vast mineral resources, including the Africa's largest offshore natural gas deposit[11]. The country is strategically positioned, adjacent to four landlocked countries which are dependent on Mozambique for their access to international markets via their ports.

[11]https://news.mongabay.com/2021/04/gas-fields-and-jihad-mozambiques-cabo-delgado-becomes-a-resource-rich-war-zone/#:~:text=In%20the%20early%202010s%2C%20the,corruption%20scandal%20involving%20Credit%20Suisse.

Independence, war, and Mozambique's political players

Portuguese colonialism (1891–1975) in Mozambique was retrograde and cruel, characterised by forced labour, forced crop cultivation, high taxes, poor wages (Hanlon, 2010; Isaacman et al., 1980), combined with a gradual and violent curtailment of access to land (Direito, 2013). In the 20th century, Portugal resisted the decolonisation approaches followed by other colonial powers, i.e., France and Britain. War followed in all African Lusophone colonies in 1964, eventually contributing to regime change in Portugal in 1974 and independence for its colonies (Hanlon, 2010; Newitt, 2017)).

Following a decade of armed resistance, Mozambique became independent in 1975. While different movements engaged in Mozambique's anti-colonial struggle, by the arrival of independence these groups had coalesced into one, the Front for the Liberation of Mozambique (FRELIMO). FRELIMO became the only political party in Mozambique following independence and they enjoyed widespread popularity for bringing an end to colonial rule, allowing free movement and increasing the provision of health care and education (Hanlon, 2010). In these early years Frelimo was home to diverse ideological perspectives, but its left wing became increasingly powerful, and Frelimo formally embraced a Marxist-Leninist doctrine in 1977 (Newitt, 2017). This turn toward communism, combined with Frelimo's support to the liberation movement in Southern Rhodesia and the African National Congress (ANC) in South Africa, sparked strong regional reactions.

Renamo (Resistencia Nacional Mocambicana), Mozambique's counter-revolutionary movement, was born in this context. Post-independence, Mozambique was neighboured by two countries with white minority rule, Rhodesia and South Africa. Rhodesian independence fighters operated within Mozambique with the tacit approval of FRELIMO, which led to Ian Smith's Rhodesian Government attacking Mozambique in 1976. Mozambique sanctioned Rhodesia in response. Rhodesia, in turn, created an anti-Frelimo guerrilla force, Renamo. Fighting between FRELIMO and RENAMO lasted until peace in Zimbabwe brought a short hiatus to the conflict in 1980. War quickly resumed in Mozambique in 1981; Renamo had become a tool of the destabilisation machine of the apartheid government of South Africa. Seventeen years of war ended when the Mozambique General Peace Agreement was signed in 1992. Renamo transitioned into a political party; however, having been born out of a guerrilla movement, RENAMO had no policies of its own and built an identity opposing Frelimo. Frelimo, on the other hand, had 17 years of experience as a strong, centralised and extremely organised hierarchic ruling party, and consequently dominated over RENAMO in national politics.

When peace came to Mozambique, FRELIMO therefore kept control of the government and Joaquim Chissano became president in 1994. RENAMO became FRELIMO's main political opposition. International geopolitical conditions are argued to have played a substantial role in Mozambique's

transition to democracy. Specifically, the collapse of the Soviet Union and fall of apartheid in South Africa are seen to have removed external pressures responsible for Mozambique's turmoil during the 1980s.

The civil war between Frelimo and Renamo however took a profound toll on Mozambique's social and physical infrastructure. South Africa and Renamo targeted Mozambique with a destructive, long drawn-out terrorist campaign, where one million people died (seven percent of the 1980s population estimate) and a third of people fled their homes. Renamo targeted schools, health posts, economic infrastructure and transport to undermine Frelimo's progress and popularity (Hanlon, 2010). In one of the biggest attacks on transport during the war, approximately eighty vehicles were burned and 278 people killed when armed rebels assaulted two convoys near the February 3 Communal Village in Maputo province on October 29, 1987 (Maier et al., 1992). Such attacks instilled a widespread fear to travel. Schools were raided, and teachers and students taken and killed, creating fear to participate in Frelimo's education system. Economic damage to the Mozambique was estimated at 20 billion USD (Hanlon 2003), with UNICEF (1989) estimating that the war shrunk the nation's GDP was 50% . Sixty per cent of all primary schools were destroyed or closed (Hanlon, 2003).

Mozambique's recovery and its stuttering reputation as donor darling

After the peace accord was signed in 1992, Mozambique was championed by donors as one of Africa's most successful stories of post-war reconstruction and economic revival (IMF, 2007; UNDP, 2006). It has been referred to by international policy makers as a 'beacon of hope'; a model to be replicated in post conflict societies (Phiri, 2012).

The amount of donor aid offered to Mozambique has been substantial. In 2014, the total aid given to Mozambique reached over 2 billion USD (Newitt, 2017). For example, in 2007, Mozambique received $162 million for PEPFAR (President's Emergency Plan for AIDS Relief) from the United States (Government of Mozambique, 2006). This equalled approximately half of the Mozambican health sector's entire 2008 budget (Phiri, 2012). In 2008, the Global Fund to Fight against AIDS, Tuberculosis and Malaria provided approximately $58 million. Whereas the Millennium Challenge Account for Mozambique provided $500 million over five years from 2008 (Government of Mozambique, 2006).

Much of this aid has been conditional and Mozambique has had little choice but to follow, or appear to follow, the prescriptions of the World Bank and IMF, and the changing trends of the international donor community. Prescriptions that Mozambique has followed include, the adoption of the Millennium Development Goals (MDGs), the creation of Transfrontier Conservation Areas (TFCAs), and the adoption of the 'good governance' agenda (Newitt, 2017). Mozambique's dependency on donors however

contrasts with other lusophone states in Africa, such as Angola, whose oil wealth has allowed them to largely ignore donor demands. By 2010, there had been significant progress with regards to development indicators, an outcome noted by several agencies and organisations (Phiri, 2012). For example, in 1992, the country was ranked as the poorest country in the world, but by 2009 its GDP ranked 169 out of 177 countries (UNDP, 2009).

However, over the last decade Mozambique's reputation as a donor darling and paragon of post conflict reconstruction has weakened due to corruption and increasing violence. In 2010, Maputo witnessed popular revolts during a cost-of-living crisis. Diseases such as malaria, HIV and tuberculosis have increased (Phiri, 2012). In 2013, the conflict between RENAMO and FRELIMO reignited and is still simmering today. In 2016, a corruption scandal dragged the country into a recession and led the IMF and other donors to withdraw their support, although this has recently been reinstated with $465 million USD of support[12]. In October 2017, a conflict broke out in the northern most province of Mozambique, Cabo Delgado, when an Islamist sect morphed into a violent jihadi insurgency (Morier-Genoud, 2020). The group occupied the town of Mocímboa da Praia for 48 hours and stole weapons, only fleeing when police reinforcements arrived. Since then, the insurgency has spiralled into a guerrilla style war. In 2020, the town of Palma witnessed a horrific attack leaving dozens dead and forcing thousands to flee their home; the conflict has hitherto killed over one thousand people and displaced 250,000 [13] The development of Mozambique's offshore Liquid Natural Gas fields has been put on hold ever since. In what are now prophetic articles, Hanlon (2009; 2010) analyses the beginnings of increasing discontent and violence in Mozambique, warning of the increasing panic and rage of the poor:

> *'In the aftermath [of the civil war] there was an intense feeling of 'never again'— everything must be done to avoid violence. But 17 years later, there has been a subtle mood change. Those who fought gained nothing, while their leaders have become comfortable and prosperous. Furthermore, there is now a new generation of young people who do not remember the war. With a basic primary education, they are moving into towns and cities to try to earn a living in the 'informal sector' on the margins of the law. Lynching in poor urban neighbourhoods is increasing, and violent crime is increasingly an issue in the media and in public meetings with President Armando Guebuza' (Hanlon 2010, p78).*

[12] www.clubofmozambique.com/news/imf-approves-456-million-dollar-credit-for-mozambique-watch-216472/
[13] https://www.bbc.co.uk/news/world-africa-61029991

Mozambique's modern entrepreneurial environment

Today, Mozambique remains one of the least developed countries in the world, ranking 181 on the Human Development Index[14]. To understand how the contemporary institutional environment in Mozambique currently influences entrepreneurship, we can unpack three dimensions of the institutional environment—economic, political and socio-cultural. Previous research linking Mozambique's institutions with entrepreneurship suggests that the institutional environment represents a profound challenge to entrepreneurial endeavour (e.g., Limbobo & Dinis, 2015; Newitt, 2017; Pereira & Maia, 2019).

Economic

It is accepted that entrepreneurial activity is more viable in stable, strong or expanding economies because the demand for goods and services and the ability to secure credit or investment is higher during times of economic expansion than during economic contractions (Campbell, 1992). Moreover, strong and stable economies increase entrepreneurial motivations and confidence to engage in entrepreneurial activities, i.e., the confidence of potential entrepreneurs in their decision to exploit entrepreneurial opportunities increases (Harper, 2003).

Mozambique has made significant progress in maintaining economic stability and the World Bank suggested that the country had consigned economic volatility to the past (Mahdi et al, 2018) until a hidden debts scandal destabilised Mozambique in 2016. Economic growth surged following the end of the civil war, averaging 8.1% between 1995 and 2012, hitting a peak of 11.9% in 2001, which represented one of the highest growth figures in the world (in Limbobo & Dinis, 2015). Household earnings subsequently increased and the number of Mozambicans living in absolute poverty in 2004 had been reduced to 54% from 70% in 1997 (Massingarela et al., 2004 in Hanlon, 2010). Since 1992, Mozambique has enjoyed a favourable degree of internal stability compared to many of its neighbours (Newitt, 2017). In 2020, the pandemic caused a sudden stop to Mozambique's good economic performance and the country experienced its first economic contraction in 28 years (World Bank, 2021). Real GDP shrank by approximately 0.5%, primarily driven by a stalling demand for construction, tourism and transport. As previously mentioned, economic activity has been severely hindered by the outbreak of a violent conflict in the country's northern territory of Cabo Delgado, causing Mozambique's GDP per capita to slip down international rankings, to 191 out of 194 countries, representing a GDP per capita of 448.5 USD. Nevertheless, a modest economic recovery is under way driven by growth in agriculture and service (World Bank, 2021). Growth forecasts are positive due to predicted natural gas production. Together,

[14] https://hdr.undp.org/en/content/human-development-index-hdi

despite recent challenges, Mozambique's post-civil war economic performance and stability should have created favourable conditions for entrepreneurship.

Despite Mozambique's historic macroeconomic success, previous work questions the distribution of its economic growth and its contribution to poverty reduction (e.g., Hanlon and Smart, 2008; Hanlon, 2009; Hanlon, 2010; Cunguara, 2012; Newitt, 2017[15]). Economic growth has been concentrated in a small number of sectors and primarily in 'mega projects' in the energy and mineral sector (gas, aluminium and coal). For example, the Mozambican Aluminium foundry (Mozal) accounted for 60% of the country's total exports in 2010 (Cunguara, 2012; Hanlon, 2010). Whereas growth in labour demanding sectors (agriculture, agro-industry, manufacturing) have not exhibited significant growth, meaning lacklustre job creation overall (Cunguara, 2012). Worsening socio-economic indicators indicate a paradox. Although the government of Mozambique boasts remarkable progress regarding the number of people no longer living in poverty, there is a contradictory increase in children suffering from poor nutrition (Hanlon & Smart, 2008; UNICEF, 2020 reports that 46% of children under five are nutritionally deprived) and increasing prevalence of disease (Phiri, 2012). Hanlon's (2010) analysis suggests that this contradictory picture of decreasing poverty and increasing child malnutrition is explained by two factors: first, the decline of poverty is exaggerated as the government's figures are based on a change to the poverty line, i.e., the baseline has shifted. Second, the real gap between the rich and the poor in Mozambique is widening, with the poor struggling to nourish their children. This is demonstrated through rural income surveys showing increases in the incomes of rural households were concentrated among the top 20 % of households in terms of incomes, whereas the poorest 20 % of households showed paltry income increases (Hanlon & Smart, 2008). In addition, Hanlon & Smart (2008) demonstrate the precarious position of people living above the *so-called* poverty line in Mozambique, with half of the rural families classified as 'not poor' in 2002 having fallen into poverty by 2005. In 2012, the Economic Intelligence Unit highlights Mozambique's skewed development in effective terms when it asked, why has '*Mozambique's outstanding economic performance…failed to benefit the poor*'? (EIU, 2012 in Newitt, 2017). Considering this, the macro economic improvements that should benefit entrepreneurship seemingly do not reach to a large proportion of the country.

Similar to the links between improved macroeconomic performance and poverty reduction, previous work has questioned the impact of Mozambique's economic growth on entrepreneurship. The country still has a low ranking in the international indicators of competitiveness and business environment (Limbombo & Dinis, 2015), and multiple studies conclude that the economic environment is an obstacle

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[15] https://www.theigc.org/project/developing-vocational-training-in-the-mozambique-labour-market/

to entrepreneurship, primarily due to the poor access to finance (Limbombo & Dinis, 2015; Pereira & Maia, 2019). Bank loans are almost inaccessible to most due to unfavourable interest rates and conditions. Micro-credit schemes offer insufficient capital over inadequate timeframes. Although incubation strategies and projects (to provide both resources and skills to entrepreneurs) exist, they remain difficult to access (Limbombo & Dinis, 2015; Pereira & Maia, 2019). The formal sector employs only 11.1 percent of the total labour force, 4.1 percent of which is in the public sector. Limbombo & Dinis (2015) estimate that Mozambique has a total labour force of 10.1 million, 52.3 percent of which are self-employed informal workers, and 11.5 percent are family workers without remunerations (Limbombo & Dinis, 2015).

The inhibitory economic environment toward entrepreneurship and the significant percentage of self-employed informal workers in Mozambique highlights an important tension. Specifically, how can Mozambique's institutional environment be considered hostile to entrepreneurship when so many people are evidently self-employed and engaging in entrepreneurial behaviour? The answer is that Mozambique is simultaneously a hotbed of informal entrepreneurship and is hostile to formal entrepreneurship. Studies discussing Mozambique's institutional environment and its impacts on entrepreneurship are primarily concerned with formal entrepreneurship and neglect informal entrepreneurship. This is predictable given tendencies to view informal entrepreneurship as unproductive and unimportant, despite considerable evidence to the contrary. For example, Hart's (1971) ground-breaking study on the informal sector in Ghana demonstrates how large numbers of people operate outside the formal labour force, deliver essential services, and forge a better living in the informal sector than is available in the formal.

My study does not hinge upon any denigration of informality. However, I have focussed on more formal forms of entrepreneurship because I am studying value chains which require elements of formality (product standards, hygiene ratings, certification, labour practices etc) to generate the incomes which we hope will benefit conservation. As we will see they also hinged upon relations with larger donors which again required formalities such as accounts, audits and project reviews. The analysis here, therefore, primarily focuses on formal entrepreneurship as the case study entrepreneurs operate in the formal arena. Their enterprises are visible to the state and comply with formal national and international institutions. Nevertheless, I aim to approach this study with an awareness of informal entrepreneurship, its importance, and potential interactions of the informal with the focal enterprises. In some respects, the formality we observe here is only possible because of the efforts of thousands of less formal entrepreneurs whose baobab fruit collection and beekeeping responded to these new market demands.

Political

The political environment is an important dimension of the institutional context in which entrepreneurship occurs. The political environment influences how potential entrepreneurs perceive the risks and rewards of engaging in entrepreneurial activity. Various aspects of the political environment will affect an individual's willingness to exploit entrepreneurial opportunities, such as freedoms, property rights and the centralisation of power (Harper, 2002). Like the economic environment, previous research suggests that the political environment in Mozambique presents a key challenge for entrepreneurs.

Political freedom is the freedom from being subjected to the will of others and encourages entrepreneurship in several ways. For example, political freedom encourages the free exchange of information and opportunity exploitation requires the procurement of information about opportunities (Hayek, 1945). Political freedom also encourages individuals to develop of an internal locus of control which facilitates the exploitation of entrepreneurial opportunity (Harper, 1998).

In Mozambique, there are no legal restrictions to engaging in private business but there are multiple political factors which suggest political freedom is curtailed and this, in turn, will impact on entrepreneurship. Mozambique is classified as only 'partially free' by Freedom House and has a score of 43 / 100 on the freedom house Global Freedom Score[16]. The ruling political party, FRELIMO, have held power in Mozambique since independence from Portugal in 1975, and continued their incumbency after the introduction of multiparty elections. Elections have however been mired by violence, irregularities and fraud allegations. Unelected elites within FRELIMO exert major influence over the party and the country's institutions. For example, civil servants face significant pressure to contribute part of their salary to the ruling party, and to campaign and vote for them. People that openly support opposition candidates experience threats and intimidation by FRELIMO actors embedded within state bodies, such as the police.

Corruption is also likely to be a significant impediment to entrepreneurship in Mozambique. Authors conclude that corruption is entrenched and ubiquitous in Mozambique, with corrupt practices pervasive at all levels of society (e.g., Tvedten & Picardo, 2019; Newitt 2017). Although normative interpretations of this phenomenon recognise corruption as a patently reprehensible deviation from the politically legitimate, more nuanced interpretations argue that corruption is a rational and widely legitimatised practice essential to patrimonial political systems, used by elites to redistribute resources along their far-reaching vertical networks of support (Chabal & Daloz, 1999). Both interpretations nevertheless

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[16] https://freedomhouse.org/country/mozambique/freedom-world/2022

suggest that the primacy of clientelistic imperatives and associated practices of corruption has significant costs for society and macro-economic development by and large. For example, to the state that is sapped of resources that could be better used to provide services and poverty alleviation. For donors, who see their funds misappropriated and therefore lose credibility. For the poor, who must use part of their already insufficient resources to pay for extra goods and services. For the ultra-poor that cannot afford to take part in this corrupt system and find themselves locked out of the services it offers.

The scale of corruption and its macro-economic impacts in Mozambique are put into stark perspective by the recent *dívidas ocultas* or hidden debts scandal[17]. In 2016, it was revealed that members of the government had significant clandestine foreign loans of approximately US 2 billion, contracted through paper companies and concealed from the IMF. This discovery led the IMF withdrawing support for Mozambique (which has only just resumed in 2022) and added significantly to the total current public debt (78% of GDP in 2017). This debt stymied growth of the Mozambican economy, caused a significant devaluation of the Mozambican metical, led to sharp declines in government spending and investments, and led to an abrupt stop in donor funds (Orre and Rønning, 2017). Newitt powerfully concludes that the hidden debts scandal exposed how Frelimo's corruption had been tolerated by donors due to their superficial compliance with the demands of the IMF (Newitt, 2017).

The extent of corruption in Mozambique undoubtedly impacts on entrepreneurship. Pereira & Maia (2019) provide evidence that corrupt bureaucracy inhibits entrepreneurship in Mozambique; they suggest that entrepreneurs view government bureaucracy as slow, expensive, corrupt and ultimately of little value. The authors suggest there is an overall lack of trust between entrepreneurs and civil servants in Mozambique as '*civil servants are always fishing for bribes*' (Pereira & Maia, 2019, p.109). It is easy to posit several theoretical ways in which systemic corruption potentially impacts entrepreneurship. For example, entrepreneurs having to pay bribes will invest less of their limited capital in bringing products to market. Potential entrepreneurs may decide not to act on entrepreneurial opportunities at all due to the additional risks and costs associated with doing business in the context of entrenched corruption. As previously mentioned, pervasive corruption may cause entrepreneurs to hide their activities from the state and engage in the informal sector. The reportedly widespread perception that civil servants are corrupt will likely lead entrepreneurs to avoid interactions with them if possible. Alternatively, corruption may not inhibit entrepreneurship as the practices are factored in and the costs are no more than those associated with the formal system, e.g., if bribes are less than taxes. Entrepreneurs will instead utilise corruption to bring their products to market. Thus, instead of being inhibitory, corruption becomes

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[17] Dívidas ocultas: Manuel Chang poderá explicar os "corredores do poder" | Moçambique | DW | 24.08.2021

facilitatory, an essential part of doing business (see Chabal & Daloz (1999) for an account of how corruption and disorder can be functional). Corruption therefore inhibits formal entrepreneurship in diverse ways, from discouraging it outright, reducing the money entrepreneurs have to bring goods to markets, driving entrepreneurship to the informal sector. At the same time, corruption may just be accepted as part of the system that entrepreneurs must work in to be economically successful.

Highly centralised governance system in Mozambique is another political factor which likely inhibits entrepreneurship. Decentralisation promotes entrepreneurship by influencing perceptions and decisions relating to entrepreneurial opportunity exploitation. Centralisation reduces an individual's locus of control because economic success in centralised societies depends less on individual agency and more on the actions of the state (Harper, 1997). In Mozambique, decentralisation was introduced alongside other institutional reforms following the 1992 peace accords. Decentralisation was intended to stabilise the country by creating political space for RENAMO, and by helping economic recovery alongside the transfer to a market economy. Decentralisation was also proposed as a way to engage with local people and to better understand the causes of the war (i.e., rural support for RENAMO) and was thus intended to be an effort by FRELIMO to get closer to their opposition and the people (Maschietto, 2016). Although significant decentralisation reforms have already occurred in Mozambique, these efforts have been criticised as electoral 'rhetoric' and 'lip service' intended to appease the conditionalities imposed by international donors following the peace accord. Gonçalves (2005, p70) study into decentralisation processes in Mozambique concludes that '*rather than opening room for popular participation, democratic decentralisation laws deny rural dwellers the right to vote in local elections…*' This seems to be part of a wider trend whereby the Mozambique government complies on paper with the demands of donors and ostensibly takes action to meet their commitments. In reality, however, little changes. Malyn Newitt (2017) astutely observes how this behaviour parallels the Portuguese colonial practice of *para os inglezes ver* (for the English to see), whereby the Portuguese would commit to take action against slavery or forced action but where the old practices continued behind a thin veil of compliance.

At a more micro level, Virtanen (2019) highlights how ongoing political tensions between FRELIMO and RENAMO can cause difficulties when implementing conservation and development activities in Chimanimani (one of this project's focal sites), including initiatives linked with entrepreneurship, i.e., market-based instruments. Chimanimani as a conservation area received a significant boost as part of a World Bank's drive on Peace Parks, with the park selected as a Trans-Frontier Conservation Area and receiving significant funding (1997-2003). The conservation strategy for Chimanimani national park involved the demarcation of a core conservation zone, where activity is limited to non-consumptive use,

and a buffer zone, where the expansion of consumptive use is restricted. To compensate for the subsequently lost livelihood opportunities, the project sought concomitantly to develop market-based instruments to provide income for the local communities, such as ecotourism, beekeeping and aquaculture. However, when the implementing organisations started to work in the area, RENAMO had won the local vote in the 1994 national elections and governed the majority of the area. The area's political leaders therefore belonged to the government's opposition and were highly suspicious of being infiltrated by government agents. Traditional authorities viewed project representatives as government spies and were increasingly hostile toward the presence of strangers in their communities (Serra, 2001). Although agreements and contracts were eventually struck with local leaders, the security situation deteriorated across Chimanimani and one part of the TFCA project team limited their activities to the safest, FRELIMO controlled, areas of the park. In Chimanimani's Moribane areas, the other half of the TFCA project team worked with local communities and specialist NGOs to identify and implement alternative livelihoods such as apiculture, horticulture and fish farming. However, the team struggled to prevent the expansion of agriculture and uncontrolled burning practices, and tensions developed with local communities when the project team failed to control destructive crop raiding by the area's elephants. The local communities were split between those that suffered the most and insisted on shooting the animals, and those that considered elephants to be reincarnations of ancestors and wanted them protected. Yet, subsequent attempts to resolve human-wildlife conflict only illuminated the low value communities placed on the team's efforts to compensate for the park's demarcation and the associated costs of conservation (Schafer and Bell, 2002; Singh, 2001; Virtanen, 2020). Thus, for those aiming to collaborate with the people of Chimanimani in entrepreneurial or development initiatives, there is a profound history of distrust stemming from Mozambique's civil war and loyalties to rival political factions.

Reviewing the political environment in Mozambique in relation to entrepreneurship reveals distrust and corruption to be significant themes at national and local levels. Overall, this should hinder formal entrepreneurship, making it less appealing as resource increasing the costs and risks of engaging in entrepreneurship, e.g., resource seeking, a key entrepreneurial behaviour, will take place under uncertain conditions with limited information and potentially with untrustworthy actors.

Socio-cultural

The socio-cultural environment is the third dimension impacting entrepreneurial activity. This includes the beliefs and norms of the individuals within a society relating to what are desirable and legitimate activities, combined with the socio-cultural institutions that support a given society's ways of doing. The socio-cultural environment impacts the amount of entrepreneurial engagement in multiple ways.

Foremost, beliefs and attitudes toward entrepreneurship will dictate how desirable entrepreneurship is in a given society (Aldrich, 1990; Aldrich and FIol, 1994). That is, if there are positive attitudes toward profit seeking behaviour and firm establishment this should promote the status and desirability of entrepreneurship (Casson, 1995). On the other hand, negative attitudes toward profit seeking behaviour have been shown to discourage entrepreneurship (Gnyawali and Fogel, 1994). Second, social norms affect the number of entrepreneurs already present in society that can act as role models. Having role models in society is crucial to promoting entrepreneurship as they play a key role in transmitting knowledge and motivating nascent entrepreneurs (Shane, 2002). Third, cultural beliefs linked to using one's own judgement and decision making are suggested to facilitate entrepreneurship. This is because entrepreneurial action requires certain types of decision making related to, *inter alia*, resource acquisition and strategies of organising. Similarly, beliefs and norms that support reciprocity and a moral commitment are thought to promote entrepreneurial activity by making resource seeking under uncertain conditions and with limited information more appealing (Harper, 1997).

The socio-cultural environment is potentially a profound challenge to promoting entrepreneurship in Mozambique. A narrative exists, present in both the academic and grey literature, that entrepreneurship is not seen positively in Mozambique. For example, Robb et al., (2014) suggests that entrepreneurship is perceived as an inferior career choice. Similarly, Pereira and Maia's (2019) study similarly concludes that the youth of Mozambique do not favour entrepreneurship and are more focused on obtaining employment within the state of NGO sectors. Instead, entrepreneurship is primarily seen as something that is informal and small-scale in the form of bancas or '*barraquinhas*' (small stalls or shops). Zuin et al's. (2014) study of water resellers in Maputo further illustrates the general undesirability of certain forms of entrepreneurship. Specifically, it concludes water sellers engage in entrepreneurial activity out of necessity and due to pressure from social norms, not because it is a desirable or favourable way to earn a living. Together, these studies suggest entrepreneurship is more often seen as an activity of last resort, not an activity capable of delivering an improved livelihood or a way out of poverty.

By trying to unpack the socio-cultural environment and its influence on entrepreneurship the tension between informal and formal entrepreneurship quickly resurfaces. What is striking from the studies above is that the people of Mozambique view entrepreneurship primarily in its informal variety; the inverse of how entrepreneurship is predominantly viewed and discussed in Western literature. Instead of entrepreneurship being a dynamic activity capable of improving livelihoods, it is an activity of last resort, of the poor and desperate. This inverse perception is potentially explained considering the widespread nature of informal entrepreneurship throughout the country (as previously mentioned, 52.3% of the labour force are self-employed) and the limited opportunities for informal entrepreneurs

to grow their ventures into anything more than subsistence activity. When trying to understand entrepreneurship in Mozambique, it is therefore crucial to differentiate between the formal and informal forms. Hanlon (2009, p126) adds further evidence of the negative perceptions toward informal entrepreneurship and its ability to provide a decent livelihood. Drawing on an anecdote in Fauvet (2009), Hanlon suggests that crime is a preferable or more likely prospect for the young than entrepreneurship in the informal sector.

> *'In a tour of Maputo poor neighbourhoods in mid-March 2009, first lady Maria da Luz Guebuza told young people they had to work harder to make their way in the informal sector. She said that the state pays for teachers and education, after that it is up to young people themselves. But the young responded by saying that unless jobs were created or they were given help to be self-employed, crime would continue to increase'*

There is evidence that there have been national efforts to promote formal entrepreneurship and change negative attitudes toward entrepreneurship, especially among the youth of Mozambique. For example, the National Development Strategy (2015–2035) (Government of Mozambique, 2014; p.10) states that knowledge is, '*crucial to the exploration of socio-economic dynamics that occur in the country because it allows to create new capabilities and patterns of economic development. Thus, investments in education and research, allied to science and technology, are key factors to catalyse the production process and the economic competitiveness of the country'*. The National Development Strategy states that a change toward a more entrepreneurial mind and attitudes as one of the fundamental factors required to drive growth. Thus, one of the Mozambican government's primary concerns in 2014 was boosting entrepreneurship education, both for economic and social reasons. Moreover, one of pillars of the National Agenda to Combat Poverty in Mozambique is to promote entrepreneurship education (Valá, 2009). This broadly included the introduction of entrepreneurship courses, related to business creation and local development, to both prepare and motivate graduate students to consider entrepreneurship as a possible professional career and to develop entrepreneurial behaviour (Limbombo & Dinis, 2015). Nevertheless, these efforts to educate people about entrepreneurship and change attitudes have faced critical barriers. For example, a lack of trained teachers, a lack of involvement by / interaction with entrepreneurial networks / role models, lack of resources and inadequate infrastructure (Limbombo & Dinis, 2015).

NTFP use and commercialisation in Mozambique

Mozambique has extensive forest and woodland habitat (32 million hectares), which provides an abundant source of Non-Timber Forest Products, e.g., wild fruits, vegetables, fodder, honey, firewood and medicinal plants (Cooper et al., 2018). Multiple studies have explored NTFP use in Mozambique and the region and have demonstrated the important contributions NTFPs make to fulfilling households' subsistence and consumption needs (e.g., Falcao et al., 2021; Albano, 2002; Lynam et al., 2004; Martins & Shackleton, 2018; Aparico et al., 2021). Bruschi et al (2014, p21) highlight the importance of Miombo woodlands as a key source of NTFPs and suggest that rural people in Mozambique perceive Miombo woodlands, as '*a common good, a source of cultural and spiritual meanings as well as raw materials for the community's daily needs*'. Similarly, Aparico et al's., (2021) ethno-biographic study of Miombo woodland documents the utilisation and management of 106 NTFPs by communities in Nhamacoa, Central Mozambique, suggesting that communities are dependent on NTFPs for food and health care. Falcao et al's., (2021) study of NTFP use within Niassa Special Reserve, northern Mozambique, concludes that NTFP collection, production and sale has a significant positive influence on rural livelihoods in terms of food security and household incomes, and suggest that NTFPs '*generally contribute 38.6% to food security*' in the area. Regional studies (South Africa) reveal the importance of NTFPs as a 'safety net' to the poorest in society, functioning as a source of food or income when people lack alternatives (Shackleton & Shackleton, 2004), e.g., during the hungry pre-harvest season (Paumgarten et al., 2018). Combined, these studies underscore the centrality of NTFPs to rural subsistence and other economic or cultural needs.

NTFP commercialisation and enterprises in Mozambique

NTFP enterprises in Mozambique have commercialised a range of products which are sold or traded at local or regional markets. These include honey, handicrafts, fuel wood, medicinal plants, grass products, bamboo, tree foods, palm wine and other beverages (Martin & Shackleton, 2018; Nhancale et al., 2009). These enterprises are however characterised by low levels of investment, profit and technology. NTFP enterprise in Mozambique are predominantly informal (see *Table 3*), family run, and are generally opportunistic and supplementary to subsistence livelihoods, as opposed to being organised and providing high economic returns (Nhancale et al., 2009). A small number of studies highlight the relative profitability of certain NTFP trades in Mozambique; for example, Martin & Shackleton (2018) find that palm wine production is one of the main livelihood activities in Zitundo, southern Mozambique, that it earns three times the Mozambican minimum wage for the agriculture sector, and that it likely contributes poverty alleviation in the area. Nhancale et al., (2009), indicate that the most organised and profitable NTFP enterprises and markets include charcoal production, beekeeping and handicraft associations. That the majority of NTFP enterprises are informal aligns with broader analyses of

entrepreneurship as a predominantly informal endeavour in Mozambique (e.g., Limbombo & Dinis, 2015)

Table 4. Estimation of the number of NTFP enterprises in Mozambique

Product	* No. Formal / Authorised Enterprises	**No. Informal / Unauthorised Enterprises
Honey	4000	30,000
Handicrafts	1,000	6,000
Charcoal	1,500	150,000
Firewood	350	9,000
Total	**6,850**	**195,000**

Taken from Nhancale et al., 2009[18]; Sources, Del Gatto, 2003; DNTF, 2006; Alberto, 2006 and Mangue and Oreste, 1999
*Authorised: SMFEs that are licensed and/or registered.
**Unauthorised: SMFEs that are neither registered nor licensed but are well organised.

A comprehensive technical assessment of Mozambique's NTFP sector by Nhancale et al. (2009) suggests that commercialisation through the development of Small and Medium Enterprises (SMEs) has significant potential for reducing poverty in rural areas. The authors contrasts this with the country's international timber trade which seemingly benefits only certain groups; specifically, foreign buyers, a small number of local loggers and corrupt officials.

National and international trends related to NTFP use explain this potential. Nationally, there has been growing demand for certain NTFPs, such as bamboo and reeds. Internationally, SMEs have benefited from expanding niche markets for certain NTFP products. Increasing nature tourism has provided expanding markets for handicrafts and ecotourism. Nhancale et al. (2009) suggest that growing awareness of traceability issues and forest certification provides new market opportunities, but that most entrepreneurs in Mozambique have been unable to exploit this growing appetite for NTFPs. Rather, their endeavours struggle to get past the initial stages of business development, displaying low levels of output, productivity, value addition and profit. Overcoming these challenges requires concerted action and investment from a number of stakeholder groups, including the SMEs themselves,

[18] The Centro Terra Viva (CTV) research team used mixed methods to estimate the number NTFP enterprises in Mozambique, combining existing research with field visits to SMEs in 16 districts and semi-structured interviews with professionals and academics (Nhancale et al., 2009)

their business partners (processors and buyers) and service providers, as well as government agencies and NGOs (Nhancale et al., 2009).

The focal NTFPs and Micaia's work in Mozambique

Baobab, its transition to an international market and Micaia's role

The baobab tree (*A. digitata* L.) is a large, deciduous species widely distributed across savannahs and savannah woodlands of sub-Saharan Africa. Almost all parts of the baobab tree are reportedly used by rural communities, including the leaves and fruits, the bark or the roots, for range of uses, e.g. for the provision of food, medicine, fodder, handicrafts, or significance in cultural ceremonies (Gebauer et al., 2016; Kamatou et al., 2011). The products derived from baobab fruit have however undergone a rapid development in recent decades to cater to different markets. Specifically, baobab oil pressed from the seeds is now used in cosmetics, and baobab fruit powder is an important ingredient in a variety of food products in international markets (Kamatou et al., 2011). More than 300 products containing baobab have been identified on the European market (Gebauer et al., 2014). Recent reports estimate baobab trade from southern African at 187.5 t powder/year and 5.22 t oil/year (Kruger and El Mohamadi, 2020). Thus, baobab is transitioning from domestic and traditional uses to relatively higher-value international markets (Darr et al., 2020). This transition is partially driven by the baobab's attributes: its nutritional composition with its high levels of Vitamin C, high dietary fibre, or phytochemicals and associated health benefits (Braca et al., 2018). Moreover, the fruit pulp is naturally dry and can be easily added to processed foods such as cereals, snack-bars, and cookies, hereby increasing nutrient intake. Responsible baobab fruit value addition and commercialization has also been shown to be an important additional income source for smallholders (Venter & Witkowski, 2013). Although there has already been a transformation in the way baobab is harvested and sold across the world, Meinhold (2022) suggests that significant potential remains for baobab markets to continue to grow and to positively impact the livelihoods of rural collectors (Mienhold, 2022).

Over the last decade, Micaia and Baobab Products Mozambique (BPM) have been at the centre of transforming Mozambique's baobab from locally used to internationally traded. In 2019, BPM had an established a network of around 1000 registered female baobab collectors across 23 villages across the districts of Tambara and Guro, central Mozambique[19]. BPM is marketed as a socially inclusive business committed to paying these producers higher prices than those available on the other markets available (in the case of Baobab 3-5 times higher, dependent on the time of year). BPM's access to international

[19] Expanded to 35 rural communities in 2022

markets and ability to pay higher prices is due to their products obtaining organic certification, a requirement to enter lucrative international markets. As part of their social mission, BPM purchases baobab from women only. Their rationale is that women have traditionally responsible for collecting NTFPs such as baobab and that providing women with a source of income will empower them and have greater impacts on poverty alleviation than if men were in control.

Honey and beekeeping in Mozambique

Governments and NGOs have extensively promoted beekeeping as a livelihood activity in the Global South (Hilmi et al., 2011; Paumgarten et al., 2012). Apiculture increases rural resilience through a range of benefits: increased household incomes, improved nutrition from the consumption of honey, better access to medicinal products, such as propolis[20], combined with enhanced pollination of crops and associated yields.

Wild honey collection from the wild and beekeeping is widespread practice across Mozambique, with the most important habitat for honey production being miombo woodlands (in general *Brachystegia*) and acacia (Nhancale et al., 2009). Research suggests a growing number of people and organisations are becoming involved (Mangue and Orest, 1999); however, there are significant impediments to the scaling up honey production from rural producers to improve livelihoods. For example, many beekeepers in Mozambique use fire to harvest honey instead of using smokers. This technique, although effective at stopping bee stings, can kill bees and greatly reduce the quality of the end product, giving it a smoky taste. Beekeepers also don't have access to suitable receptacles to bottle or store their product, opting to store their product in used plastic water bottles. Although equipment to process honey effectively low tech and cheap – e.g., hives, smokers, overalls, masks and bottles -- many beekeepers in Mozambique do not possess these tools. The beekeepers of Macossa, Central Mozambique, provide a documented example of how these issues can be overcome by rural beekeepers to scale up production and reach new markets. The beekeepers have formed an association, the Macossa Honey Production Association, who pool their resources to buy essential equipment. The association has received support from district level initiative fund (MZN 7 million) and from the FAO. The association sells honey to both local and regional markets. In Mozambique, there are an estimated 20,000 traditional beekeepers and 10,000 modern beekeepers, who produce 360,000 kg and 20,000 kg of honey, respectively (Nhancale et al., 2009).

[20] Propolis is used for diabetes, cold sores, and swelling (inflammation) and sores inside the mouth (oral mucositis). It is also used for burns, canker sores, genital herpes, and other conditions, but there is no good scientific evidence to support these uses.

Micaia and the Mozambique Honey Company (MHC) have been promoting apiculture as an alternative livelihood within the communities within Chimanimani for 10 years. MHC have established a network of beekeepers throughout 12 communities living within the buffer zone of Chimanimani national reserve. Micaia have trained key community members to disseminate their beekeeping knowledge throughout Chimanimani, they have provided beehives to over 1000 rural beekeepers, and have connected these beekeepers to a national market. Honey from Chimanimani is now sold across Mozambique in major retail outlets such as Shoprite. The apparent successes and longevity of Micaia and MHC make them a good case study to explore the impacts of apiculture on rural resilience as well as understanding the conditions and agency involved in bringing rural honey production to scale in Africa. I explore the impact of MHC in Chapter 5 before exploring its establishment as part of Chapter 7

Conclusion: Mozambique as a backdrop to studying entrepreneurship and its links to conservation and development

Mozambique, in many ways, provides an interesting back drop to study the challenges of entrepreneurship in the context of conservation and development in Africa. The country's transition from civil war to peace and economic revival is remarkable, and seemingly laid a solid foundation where productive forms of formal entrepreneurship should flourish. Donor support was substantial, the nation adopted neoliberal policies, and there was significant economic growth and stability. However, a review of Mozambique's institutional environment reveals another story. The country's economic growth has been concentrated in a handful of sectors, serving a relatively small group of well-connected entrepreneurs and their networks while deepening inequality. Key drivers of entrepreneurship associated with economic growth and stability, e.g., increasing access to credit and investment, have failed to materialise. Politically, freedom is assessed as poor, and corruption is entrenched at all levels. This increases the risks and costs associated with entrepreneurship and, in turn, reduces its desirability. Trust is low between entrepreneurs and bureaucrats, likely motivating entrepreneurs to avoid interactions with government agents and engage in the informal sector. Decentralisation efforts have been decried as 'lip service', again reducing the desirability of entrepreneurship by inhibiting individuals' perceptions around their locus of control. Moreover, the simmering political rivalries between RENAMO and FRELIMO complicate entrepreneurs' efforts to collaborate with communities to create enterprises and drive rural development. Mozambique's socio-cultural environment is also a profound challenge. Previous studies suggest a pervasive malaise toward entrepreneurship, and that many view it as an informal activity of last resort. Governmental efforts to promote entrepreneurship among the nation's youth have been hamstrung by, *inter alia*, poor planning, a lack of investment and an absence of role

models. Concomitantly, however, Mozambique is clearly a hotbed of informal entrepreneurial endeavour with half the population estimated to be self-employed. Part of this will be driven by poverty and necessity, combined with the above factors decreasing the desirability or capability of informal entrepreneurs to transition into the formal. In short, Mozambique's macroeconomic stability and growth since 1992 has not translated into widespread and flourishing formal entrepreneurship, and the prevailing narrative is that Mozambique represents a highly challenging environment for entrepreneurial endeavour.

NTFPs are widely used in Mozambique and provide an important source of food and income to some of the poorest in Mozambican society. Previous research suggests their commercialisation has significant potential to benefit the rural poor by providing increased income streams complementary to existing livelihoods. There is also a growing appetite for various NTFPs in Mozambique. Nevertheless, NTFP enterprises remain mostly informal, and efforts to bring them to scale have struggled to get past the initial stages of business development, displaying low levels of output, productivity, value addition and profit. Two NTFPs that have received significant attention as having significant commercialisation promise are honey and baobab. Honey production has been repeatedly promoted in Mozambique by the government, NGOs and donor projects. Indeed, there are examples of how concerted efforts by diverse stakeholder groups have transformed subsistence activities to more organised and profitable enterprises in Mozambique, e.g., the Macossa beekeeping association and the Mozambique Honey Company. Similarly, BPM has successfully commercialised baobab, obtaining organic status and finding buyers across European markets.

I argue that Mozambique's context—history, hostile institutional environment, and trend of failed NTFP commercialisations—make it an example *in extremis* relative to entrepreneurship and for my research. Mozambique is not an obvious place to study how formal entrepreneurship can work for conservation; the cards are seemingly stacked against entrepreneurs. I hope this has ultimately made this study more interesting, providing an example of how entrepreneurs create value despite a raft of macro-institutional challenges. I return to this issue in Chapter 7 where I ask several interlinked questions about entrepreneurial process and determinants. For example, how did Micaia and its enterprises eschew the national trend of NTFP commercialisation failure, and how did the entrepreneurs behind this commercialisation navigate an environment that is economically, politically and socio-culturally hostile toward formal entrepreneurial endeavour?

5. Impacts and perceptions of honey commercialisation in rural Mozambique

The overarching aim of this chapter is to explore the impact of honey commercialisation on rural households and analyse local perceptions to better understand the worth and challenges of MBI entrepreneurship in conservation and development contexts. The chapter therefore presents the following main research question:

> **What impact have the focal entrepreneurial interventions for honey and baobab had on local livelihoods?**

And the following sub questions,

a. What is the financial contribution of these interventions to participants?
b. How have participants perceptions of the focal resources changed?
c. How are these interventions perceived by participants compared to other livelihoods and conservation or development interventions?
d. What do these perceptions reveal about the challenges associated with entrepreneurial interventions for conservation and development in Mozambique?

By presenting and analysing community perceptions of apiculture commercialisation, the chapter has several objectives. First, to give voice to rural NTFP producers and non-producers subject to NGO-led NTFP commercialisations. Their perspectives can be ignored in examinations of NTFP commercialisation (Shackleton & Pullanikkatil, 2018). Second, to position beekeeping relative to other rural livelihoods in Chimanimani and contribute to the debate regarding the contributions MBIs / NTFP commercialisations on rural livelihoods, and debates on the potential contribution of beekeeping, specifically. Third, to establish context for future chapters of this thesis which will explore how entrepreneurs navigate challenges associated with NTFP commercialisation. The rationale is that the entrepreneurship will be better understood in the context of their impacts.

This chapter has three parts. First, this chapter examines the financial contributions MHC has made to rural communities through honey purchasing. I discuss the price premium and different buying practices of MHC compared to informal markets before contrasting the money paid to the four focal communities, using MHC's official buying records combined with interview and household survey data. I provide a focused examination of beekeeping's financial contribution to individual incomes within the community of Mucawaio. Second, this chapter explores local perceptions of the importance of beekeeping as a livelihood across the focal villages, drawing out common themes and differences.

Third, this chapter explores the key challenges local people of Chimanimani (beekeepers and non-beekeepers) associate with beekeeping.

MHC's price premium and contribution to rural communities

Part of MHC's aim is to maximise value to rural honey producers by providing a consistent market to beekeepers and paying a price premium. Establishing how much better the price premium is compared to local markets was complicated by different buying / selling practices between MHC and informal markets. Beekeepers sell liquid honey to local markets at different quantities for different prices, whereas beekeepers sell unprocessed honeycomb to MHC. I made multiple observations during 2019 of honey for sale in the city of Chimoio. Honey was consistently sold in 500ml plastic water bottles for 1.55 USD (100 MZN)[1]. Rural beekeepers in Chimanimani reported selling liquid honey at this price[2], but also report selling for much lower prices, 0.31 USD per 300 ml[3] (20 MZN). In 2019, MHC bought one kilo of unprocessed comb for 1.09 USD (70 MZN). The yield of liquid honey varies significantly depending on the quality of the comb produced[4]. Many of the beekeepers acknowledged MHC's price as a '*good price*'[5] in an irregular market with little opportunity to sell their honey, but there were also others that complained. '*Micaia need to increase the price of honey to increase the income of beekeepers. I think that 100 meticais per kilo would help to increase our incomes*'[6]. Follow up interviews in 2021 reveal that beekeepers increasingly engaged in lobbying for increased prices throughout 2020. This led to discussions and negotiations between MHC and beekeepers and a subsequent price increase[7].

Figure 4. Informal honey seller in Chimoio

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[1]Notebook 1, 11/2018; 04/2019
[2] Source, beekeeper survey 4, entry 28, Mussapa
[3] Source, beekeeper survey 2, entry 20, Muoco
[4] Source 9
[5] Source, beekeeper survey 4, entry 20, Mussapa
[6] Source, beekeeper survey 4, entry 28, Mussapa
[7] Source 12

Initial analysis of MHC's buying records gives an indication of the financial contribution MHC makes to rural communities. Table 4 details the weight of honeycomb bought between 2016 – 2020 and the corresponding value paid across all of MHC's twelve communities in Chimanimani.

Table 5. Honey bought and price paid to rural beekeepers by MHC, 2016 - 2020

Year	Honeycomb purchased (kg)	Amount paid (MZN)	Amount paid (USD)
2016	19,303	1,162,304	18,191.
2017	9,770	691,540	10,823
2018	46,005	3,648,131	57,097
2019	15,860	1,175,088	18,391
2020	41,310	3,277,237	51,292
Total	**132,249**	9,954,302	155,798

Further examination of the buying data reveals significant variation in the honey produced and payments received by the focal communities: Mpunga, Mucawaio, Muoco and Mussapa. Both Mussapa, and Mucawaio are regarded as two of the most productive honey producing communities in Chimanimani. Production / payments received for Mucawaio peaked in 2018 (4,866 USD), whereas production in Mussapa shows an increasing trend year on year and peaking in 2020 (3,317 USD). Muoco and Mpunga are two of the least productive communities. Micaia / MHC only started working with Muoco in 2017, later than all other communities, with the community starting to produce honey in 2018. The community has more than doubled its production and payments received between 2018 (167 USD) and 2020 (432 USD). Mpunga, on the other hand, shows the opposite trend, Mpunga's payments peaked in 2016 at 884 USD, less than 50% of what Mucawaio produced that year, declining in 2017 (192 USD) and 2018 (226 USD), before the community seemingly stopped producing honey in 2019 and 2020 (see Figure 4).

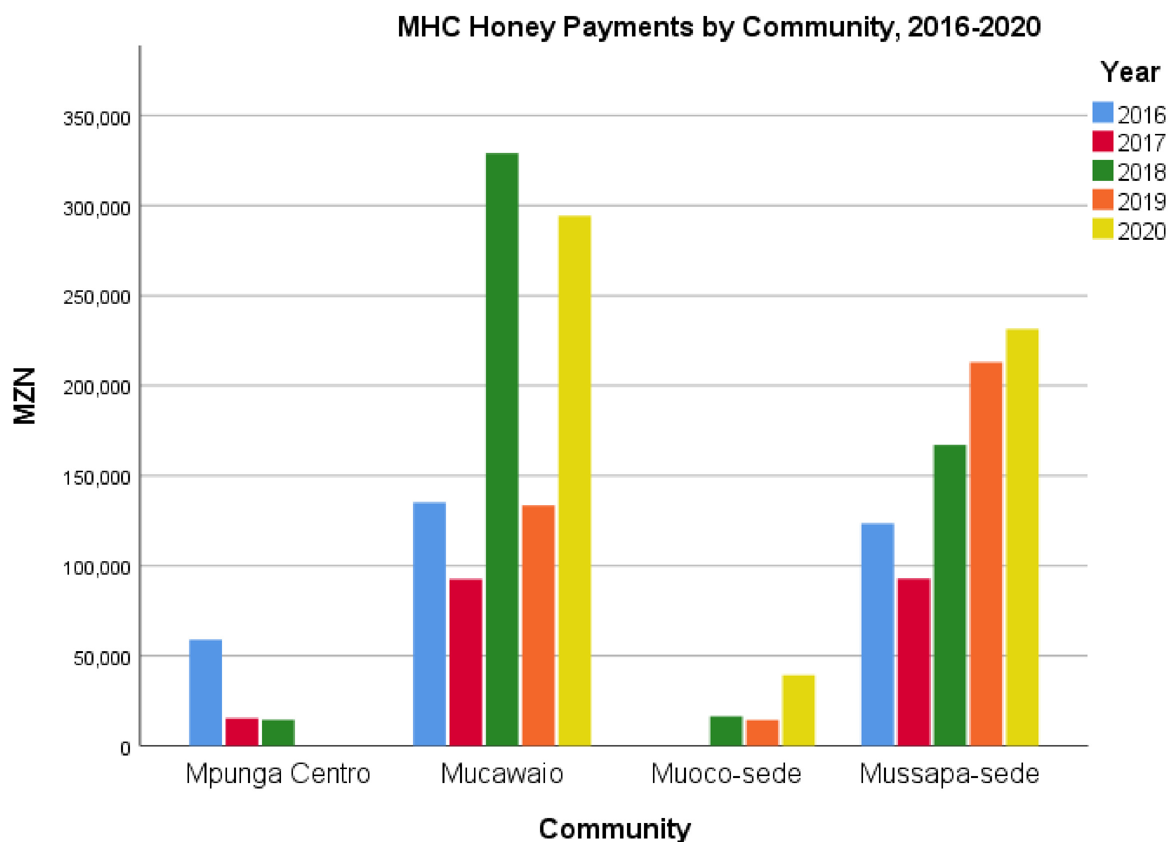

Figure 5. Payments for honey comb made by MHC to the focal communities, 2016 – 2020

The difference in uptake between communities became apparent during fieldwork. I observed a disparity in involvement in beekeeping between the neighbouring communities of Mpunga central and Mucawaio. In Mucawaio, as I walked house to house, it was easy to find beekeepers actively involved with MHC. Hives were conspicuously mounted in trees and on posts throughout the

Figure 6. Old Kenyan Top Bar (KTB) beehives lining a path in the hills of Mucawaio

community. In Mpunga, I had the opposite experience. I had difficulty locating beekeepers and the only hives I encountered were unused and stored at people's houses.

Micaia field staff revealed that the key factor explaining Mpunga's small number of active hives is that uncontrolled fires had destroyed most of the community's hives: '…*the community around Ndzou camp, Mpunga Centro. We had a lot of hives there, but they destroyed 267 hives with fire…[that was] in 2014*'.[8] During my time in Chimamani, I observed fires that had apparently become '*fogo descontrollado*' or uncontrolled. Uncontrolled fires were commonly defined as fires moving more than the intended distance, burning for multiple days, and or damaging people's property or crops[9] (see *Figure 6*). Questioning local people about the fire and loss of beehives seldom yielded divergent responses. Many people chose not to answer or claimed to have no knowledge of these events. Nevertheless, a handful of respondents, including beekeepers, the regulo and the lead beekeeper of Mpunga, confirmed that fire had destroyed the hives. One beekeeper suggested, '*Beekeeping is not important to me now as there are no hives. All my hives fell because of fire*'[10]. The regulo suggested that the people of Mpunga were not at fault: '*people from other communities will start fires outside the buffer zone. These fires can cross and enter our village. This happened when we lost our hives*'[11]. Interviews with MHC and Micaia staff suggest that this was a turning point and learning experience for the organisation and its approach. After this point they introduced contracts and fines for those that lost hives to uncontrolled fire[12]. They also launched an educational campaign, intended to motivate beekeepers to position their hives in safer locations, and to get beekeepers to create fire breaks around their hives. Mpunga's case adds evidence to the danger fires and burning practices pose to honey commercialisation initiatives.

The buying data do not highlight beekeepers that have been trained, received hives but have not sold honey during the focal years. In Mucawaio 4/37 beekeepers spoken to suggested they did not receive any payment in 2018. In other communities, the number of beekeepers not producing / yet to produce honey was much higher. For example, Mussapa 10/28 of registered beekeepers interviewed had not produced any honey in 2018. This suggests that there a group of beekeepers struggling to produce honey and that there are potentially issues with the training or motivating beekeepers, or that beehives are being distributed to people choosing not to use them.

[8] Source 5
[9] Source, beekeeper survey 2, entry 25, Mucawaio
[10] Source 1
[11] Source 10
[12] Source 5

Figure 7. Uncontrolled fire, Morning Sep 11th, 2019, Mussapa Community

Figure 8. Progress of uncontrolled fire, dusk Sep 11th, 2019, Mussapa Community

Comparison of beekeeping income to other livelihoods in Mucawaio

How people's earnings from honey compare to payments from other livelihoods provides a starting point to understand the relative impact of honey commercialisation on rural communities in Chimanimani. In the community of Mucawaio[13], I asked 37 beekeepers (out of a total 77 registered beekeepers) and 28 non-beekeepers about their income from their various livelihood activities

First examining reported incomes for honey, 37 beekeepers provided their incomes during the household survey in Mucawaio. Maximum annual income from honey reported was 522 USD by the community's lead beekeeper. This income was 350 USD more than the next highest earner of 177 USD in the community. The minimum annual income was zero and reported by 4/37 of the beekeepers. The median reported income of beekeepers in Mucawaio was 47.5 USD. Comparing the reported incomes from honey to MHC's buying records provide similar values with some slight misalignments. In 2018, a total of 126 beekeepers in Mucawaio sold to MHC. The maximum sale recorded was 482 USD, the minimum was 3 USD, the median was 23 USD, and the mean was 41 USD. A histogram of the honey buying data illustrates the distribution of payments (*Figure 8*). The data are heavily skewed to lower payments with 82/125 beekeepers receiving payments totalling under 31 USD during 2018. Only two beekeepers received payments of over 150 USD in 2018, with the lead beekeeper receiving the largest payment. Most beekeepers in Mucawaio receive modest payments, with one beekeeper producing 15 x the median.

Crop sales were as the primary source of income and values were reported by 51/65 respondents in Mucawaio. Max, min, median and average crop sales are reported in Table 5. It should be noted there were several difficulties with estimating crop incomes. Foremost, crop incomes were greatly reduced at the time of my field work due to the impacts of cyclone Idai earlier in the year, with 21/65 reporting they earned zero meticais in 2019. '*Now, because of the cyclone, my banana trees have been destroyed. I have not sold much this year*'[14]. Second, many found it difficult to estimate total earnings from crops, with 13/65 suggesting they could not / did not want to estimate. Some attributed the difficulty to the infrequent and informal nature of sale '*I sell little amounts [of crops], only when I have a plan. I am not sure how much*'. Thus, income estimates relate to an exceptionally poor crop yield, and median incomes are lowered by the large number of respondents reporting no sales.

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[13] I focused on the community of Mucawaio here as they were the only community I found receptive to asking questions about earnings from livelihoods.

[14] Source, non-beekeeper survey 2, entry 6, Mucawaio

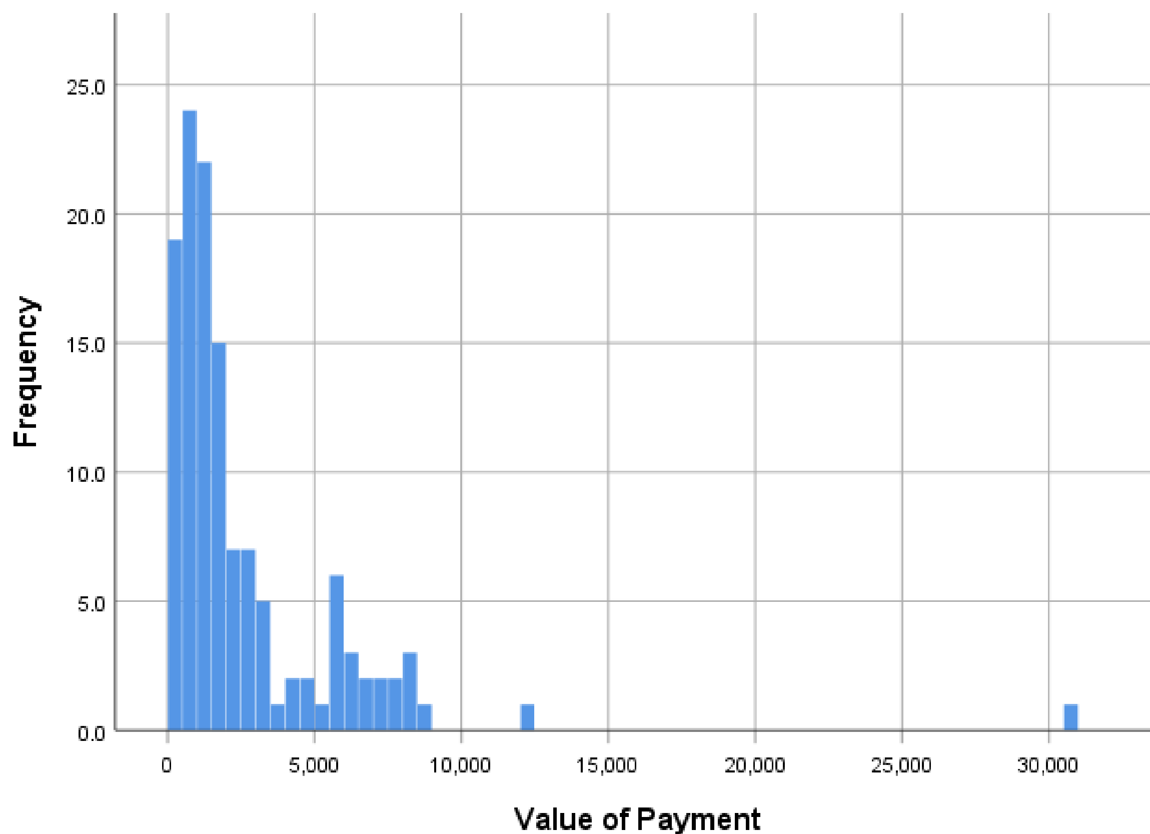

Figure 9. Histogram payments made to beekeepers Mucawaio in 2018 (MZN); 5000MZN = 80 USD

Table 6. Reported annual earnings from crop sales, honey sales, other business activities and employment, Mucawaio

Activity	Max annual income USD	Min annual income USD	Median annual income USD	Average annual income USD
Sale of crops	712	0	20.5	93
Sale of honey (survey)	522	0	47.5	72
Sale of honey (buying data)	482	3	23	41
Other business	1,520	89	71.24	316.25
Employment	190	133	-	

Figure 10. Girl salvaging maize following cyclone Idai, Chimanimani buffer zone, 03/2019

Figure 11. Collapsed maize field following cyclone Idai, Chimanimani

Figure 12. Beekeeper with replacement beehive following cyclone IDAI, Mucawaio

Incomes from businesses were reported by 19/65 respondents. These included, *inter alia*, manufacturing tools, small general shops, selling women's capulanas and brewing alcoholic drinks. The maximum reported annual income from one of these informal businesses was 1,520 USD, the minimum income was 71 USD, and the median was 89 USD. Cyclone Idai had also negatively impacted people's businesses,

> *'I had a business before; I had a shop. It was destroyed with my stock in the cyclone. I don't have money to start my business again. Replacing what I lost will cost a lot. I am waiting until I can harvest my maize. I will sell and start my business again'.*[1]

Paid employment was rare in Mucawaio with only 3/65 respondents reportedly having a job. The highest wage was 190 USD/year and the lowest 133 USD/year.

The data presented above provide several key insights regarding the contribution of beekeeping to rural livelihoods relative to other livelihoods in Mucawaio. Foremost, employment rates are low in the community which should increase interest and participation in beekeeping. Second, the median annual payment of 23 USD (the survey data suggests 47.5 USD) suggests that beekeeping in Mucawaio is not a significant income when compared to national, per capita GDP. Approximately 4-10 % of national GDP per capita[2]. Third, the survey suggests that engaging in informal entrepreneurship or businesses provides higher median incomes than beekeeping in Chimanimani, suggesting the informal businesses offer a superior return for time and effort.

The comparison between crop income and other income must be qualified as at the time of the interviews MHC was yet to purchase honey for 2019 and reported income was necessarily given for the year before. Moreover, many respondents found it difficult to estimate their incomes from crops during the previous year, which necessitated that income estimates from 2019 be used. Thus, the above comparisons of incomes relate to a normal year for honey production and a significantly poor year for crop production. Interviewees expected that the extreme weather of March 2019 would also impact that year's honey production, with many reporting reduced production coupled with fallen or destroyed hives.

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[1] Source, non-beekeeper survey 6, entry 40, Mpunga

[2] 506 USD in 2019 (https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=MZ)

> *'The amount of honey will be much less this year [2019] because two of my hives were knocked over in the cyclone and the bees escaped…I was left with only three hives, but, thanks to Micaia, I have a replacement hive'*[3]

Plotting the total annual payments made to beekeepers from Mucawaio highlights the considerable progress that has been made in improving production since 2016, but also the negative impact of Cyclone Idai on honey production (*Figure 4*). Payments in 2018 total 4,872 USD, decline in 2019 to 1882 USD following the cyclone and then rebound to 4,237 USD in 2020.

Local perceptions of the value and contribution of beekeeping to rural livelihoods

I asked 92 beekeepers across the four communities (Mussapa, Muoco, Mpunga and Mucawaio) to rank beekeeping's importance to them as a livelihood. Responses were overall positive, with 71 stating that beekeeping was very important to them as a livelihood; 3 suggesting it was important; 7 suggesting it was moderately important; 2 suggesting it was of little importance and 9 suggesting it wasn't important. Asking individuals to explain why they consider beekeeping important or not reveals several interesting themes and sub themes related to beekeeping's current position as a livelihood.

The main theme in the answers related to the need for money, uses of money or the impact of earnings from beekeeping (68/92 respondents referred to the money they had earned). Many subthemes are evident. Foremost, many beekeepers simply highlighted that beekeeping is a source of income and is therefore important: '*beekeeping is important because I can sell the honey and have money'*[4]; '*beekeeping is very important because it is an activity that if you do it you can have money'*[5]*; and, because it is good work which can give money'*[6]. Many gave more stylized answers, suggesting beekeeping and selling honey is enough to buy whatever is desired. For example, *'Beekeeping is important because when I sell honey I have money to help and to buy things that I do not have'; '…with the money you can do anything'*[7]*; Because when you sell honey you can buy all the things you need for the house. Because of this it is very important for my life'*[8]*; I know on the day I sell honey I will receive money. I know it will be good and I can buy what I want'*[9]. Another subtheme relates to the purchase of valuable items or fulfilling ambitions or plans for the future:

[3] Source, beekeeper survey 2, entry 27, Mucawaio
[4] Source, beekeeper survey 6, entry 9, Muoco
[5] Source, beekeeper survey 6, entry 13, Muoco
[6] Source, beekeeper survey 2, entry 2, Mucawaio
[7] Source, beekeeper survey 2, entry 21, Mucawaio
[8] Source, beekeeper survey 2, entry 25, Mucawaio
[9] Source, beekeeper survey 2, entry 26, Mucawaio

> *'thanks to this money [from selling honey], last year, I managed to buy things that I cherish…Because when I sell honey, I have money that can help with household expenses. Even if I want to buy goats, even if I want to buy roofing sheets for my house, you can buy all these things if you sell honey'*[10].

A prevalent theme (27/92) links income from beekeeping as contributing to sustaining families or to family survival. '*When I have money from selling honey it helps me sustain my family*'[11]; '*Because it is a thing that is helping us a lot. I know that thanks to beekeeping I will manage to sustain my family*'[12]; and '*It is important to me as it is helping me sustain my family. I bought lots of maize last year with the money*'[13]. A linked sub-theme relates to how the sale of honey has helped lessen or combat hunger (7/92) within households. For example, a new beekeeper that had sold honey once suggested that beekeeping '*…is very important because it helps my family a lot. Last year I had hunger in my household as I did not have enough maize. But this year, when I sold my honey, I managed to buy maize*'[14]. Similarly, '*it is important because I bought food to eat with my family. I was sick with hunger last year and when I got the money [from selling honey] I chose to buy maize*. Within this group, some suggested that the timing of the honey payments helped combat hunger[15]. '[beekeeping is] *Very important. I bought food with the money. The money we received was during the time of hunger [hungry season]. It helped a lot. I spent all the money on food'*[16]; and, *'it is important because I bought maize to help sustain my family. I received the money during the hungry season'*[17]. An important subtheme relates to how income from beekeeping allows staple crops to be retained:

> *'beekeeping is very important because when I produce honey I will not sell my maize to buy soap and become hungry. You can use the money from honey to buy other things, things necessary for the house'*[18]

Another important theme refers to the lack of alternative forms of employment, with multiple respondents positioning beekeeping in their community as a source of income where few others exist or are not available to them. '*For people like me that don't have jobs this activity helps a lot so we can manage to have money to sustain our families*'[19]; *'[beekeeping is very important] because it helps me a*

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[10] Source, beekeeper survey 6, entry 8, Muoco
[11] Source, beekeeper survey 4, entry 26, Mussapa
[12] Source, beekeeper survey 2, entry 6, Mucawaio
[13] Source, beekeeper survey 6, entry 19, Muoco
[14] Source, beekeeper survey 6, entry 27, Mpunga
[15] Source, beekeeper survey 6, entry 19, Muoco
[16] Source, beekeeper survey 2, entry 23, Mucawaio
[17] Source, beekeeper survey 2, entry 24, Mucawaio
[18] Source, beekeeper survey 6, entry 20, Muoco
[19] Source, beekeeper survey 2, entry 33, Mpunga

lot. I do not have any other sources of income so when I need to for things, if I need go to the hospital, I can manage to get the money thanks to beekeeping'[20]. An important theme here relates to the confidence beekeepers have in MHC and their market (6/92). For example, '*it is work that has a market to sell honey. We do not have many opportunities to sell for good prices'*[21]; and 'b*ecause when I harvest my honey, I can sell my honey to MHC. When I don't have much money, I have confidence that I will sell my honey to MHC. I know that I have buyers for my honey. Because of this, this work is very important to me at this time'*[22].

A small number of respondents (4/92) referred to the role of honey as a medicine, or treatment for minor ailments. '*Because honey helps a lot. It cures many illnesses. When I have a cough, I will take some honey to cure it… It usually works'*[23].

A theme related to how beekeeping is less important to those that struggle or have not yet produced significant quantities of honey (7/92). For example, '*I say beekeeping is only moderately important because it depends on the quantity of honey sold. You need to have lots of hives to get lots of money. If you don't have lots, then you are not going to get much money. I do not have lots of hives'[24]; It is not important to me as I have still not managed to produce much honey'*[25]; and '*because, sometimes, when you have beehives with bees it is important, but at times when you have beehives without bees it is not important because you are not going to have money'*[26]

However, an important observation relates to how some beekeepers that were yet to produce any honey perceived beekeeping as an important livelihood. '*I have not sold any honey, but it is very important as it will help me to have money to buy chickens and to breed goats'*[27]; [it is very important] *because, also, if I manage to have many hives and good skills I will have money to help my household'*[28]

One beekeeper explicitly acknowledged that his payments received are small but are nevertheless important.

[20] Source, beekeeper survey 4, entry 27, Mucawaio
[21] Source, beekeeper survey 4, entry 20, Mussapa
[22] Source, beekeeper survey 2, entry 37, Mpunga
[23] Source, beekeeper survey 4, entry 19, Mussapa
[24] Source, beekeeper survey 6, entry 25, Mpunga
[25] Source, beekeeper survey 6, entry 12, Muoco
[26] Source, beekeeper survey 2, entry 35, Mpunga
[27] Source, beekeeper survey 4, entry 16, Mussapa
[28] Source, beekeeper survey 6, entry 6, Muoco

'I say beekeeping is important as I sold honey and managed to have enough money last year. The money I received was only a small amount by it helped me buy the things I needed for the household'[29]

The value of beekeeping to the elderly and the widowed

I conducted an impactful interview with an elderly (87-year-old) widower and army veteran in the community of Mussapa. I encountered him one morning (approximately 8 am) when he was sitting alone next to fire outside of the small compound. Weeds had grown in the area adjacent to the houses and debris littered around the fire where we sat, areas normally kept pristine. The two houses were old and crumbling, with one of the houses having large holes in the walls and a fraying thatched roof at one of the corners. He was living alone on the edge of a forested area outside of the main community. He claimed that this was not his normal arrangement, and that he mostly stayed with his children and their families in a compound nearer to the centre of the community. He was staying here only temporarily as it was near his beehives. He was welcoming and asked me to share his breakfast with him.

Figure 13. Temporary house of elderly beekeeper located near beehives, Mussapa

[29] Source, beekeeper survey 4, entry 24, Mussapa

He was initially reluctant to provide any detailed answers to my questions; however, when I asked him about his motivations to start beekeeping, he provided a detailed account of why beekeeping suits his circumstances and brings him satisfaction.

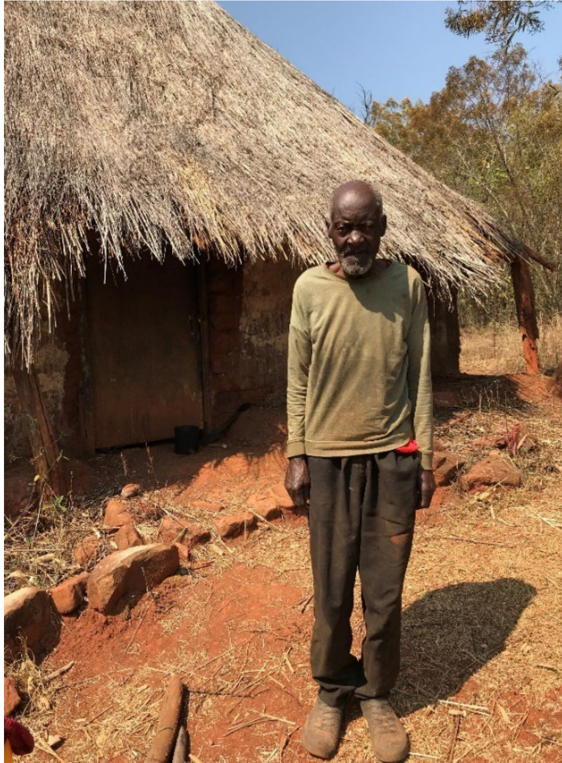

Figure 14. Elderly beekeeper

'I started beekeeping as I needed a way to earn money. I am too old now to work in the fields and grow maize. Age has stopped me doing many things I used to do to earn money. Beekeeping is good for me as it is easier than producing maize. It takes less time and does not need the same strength as working in the fields. I think beekeeping is very important to people like me, those that don't have other ways of earning money. With the money from beekeeping, I have already contributed to my family. This is important to me... Last time I received money I gave it to my children to buy fertiliser. It helped us grow crops to sell'[30].

In addition, several widows (3) discussed how beekeeping had become an important livelihood to them following the death of their husbands. The related loss of a household breadwinner seemingly motivating them to engage in beekeeping. For example,

> *'I started beekeeping because I lost my husband. I did not have a way to earn money and with beekeeping I found a way to survive. Beekeeping has become important to me. I used the last money I received to help pay school fees for my grandchildren in Beira. I am the head of my family now, so I need to help with this. The rest of the money I used to buy food for myself. This is why beekeeping is important, it is helping me to have money. And also, the honey is important to eat and it is medicine, for injuries and it is good for the heart. I have used honey like this before'*[31].

[30] Source, informal interview 1, 21/09/2019, Mussapa, green notebook
[31] Source, beekeeper survey 4, entry 13, Mussapa

Changing perceptions of beekeeping as a livelihood

To evaluate the impact of beekeeping on the communities of Chimanimani, I asked a selection of beekeepers and non-beekeepers how people generally spoke about beekeeping as a livelihood, and if this has changed over time. Distinct themes emerge.

The first identifiable group simply suggested that what has changed is that people have begun to speak about beekeeping: '*Yes it has changed. Maybe 5 years ago, people here, we did not talk about beekeeping, we did not speak about beehives and honey but now we talk about these things a lot*'[32].

The second group spoke generally about the importance and value of beekeeping and how this had changed [33]. Within this group, multiple respondents spoke of how the value of beekeeping has recently increased, '*Yes, things have changed a lot. For a long time, we thought that beekeeping was not important but now we know that it is very important'*[34]. Others suggested that seeing others earn money from beekeeping had changed their perceptions: '*Before, people used to think that beekeeping was not very important. That it didn't have value. Now we, because of seeing people making money, the people here think that it is work that we want in our commun*ity[35]. A small group of respondents explicitly referred to the community of Mucawaio as what had changed their perceptions on beekeeping:

> *'I personally thought that beekeeping was not important. But now I see my neighbours in Mucawaio making lots of money and I want to practice beekeeping too. I understand now that it is an important way to earn money'*[36].

These perceptions suggest that people's interest and engagement in beekeeping has been motivated by the success of others engaging in the activity. They do not automatically trust that projects or interventions will be worth their time and effort.

Although most of the responses were positive, conveying an increasing importance of beekeeping as a livelihood since MHC arrived, one respondent gave a more balanced answer, suggesting beekeeping is important to some but remains unimportant for others: '*it depends on the ideas of each person.*

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[32] Source, non-beekeeper survey 6, entry 13, M'punga
[33] Source, beekeeper survey 2, entry 2,3,5,7; non-beekeeper survey 6, entry 56, M'punga
[34] Source, beekeeper survey 2, entry 2, Mucawaio
[35] Source, beekeeper survey 6, entry 7, Muoco
[36] Source, non-beekeeper survey 6, entry 63, M'punga

There are people that think beekeeping is an important activity, but you have others that don't think it is important'[37]. Moreover, one female, non-beekeeper offered a negative viewpoint,

> *'I usually hear my neighbours complaining about beekeeping. They say it is only worth little money and is not important for them'*[38]

The third group of respondents suggested that honey has transformed from something that did not generate income and was only for personal consumption into something that you can sell: '*It is different now, yes. People know they can sell honey whereas before people only produced honey to eat*'[39]. This perceived change in the opportunity to sell honey was repeated by multiple other respondents: '*...before beekeeping was just an activity to eat honey only. But now it is also a business*'[40]; '*before people kept bees only to eat the honey, for food. But now we also keep bees to sell the honey*'[41]; '*Yes things have changed. Before I thought that honey was to eat and not to sell. No one was buying honey. But through Micaia I can sell honey*'[42].

> *'It is different now because before the people looked at beekeeping as an activity for subsistence, but now people look at this activity as a source of income'*

However, one respondent suggested that this change has not occurred for everyone in their community,

> *'It hasn't changed much. We still have people who produce honey only to eat, not to sell'* [43]

A fourth group spoke of the market for honey and how this has changed: 'I *think there has been change, but not lots. Before MHC I sold honey locally for 20 meticais per 300 ml. It is different now as MHC buy the honey for a good price, and I think the honey is better quality than it was years before*'[44]

The fifth group spoke of knowledge, how their understanding has changed and how they did not have the information they needed to produce and sell honey before MHC started to work in their community: '*A lot has changed. Before people practiced beekeeping only to eat and no one sold honey because they didn't know it was worth money. But now, because of Micaia we all know that beekeeping*

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[37] Source, beekeeper survey 6, entry 4, Muoco
[38] Source, non-beekeeper survey 6, entry 15, M'punga
[39] Source, beekeeper survey 2, entry 6, Muoco
[40] Source, beekeeper survey 6, entry 10, Muoco
[41] Source, beekeeper survey 2, entry 16, Muoco
[42] Source, beekeeper survey 2, entry 27, Muoco
[43] Source, non-beekeeper survey 6, entry 46, Muoco
[44] Source, beekeeper survey 2, entry 20, Muoco

is a source of income'[45]. Similarly, '*For a long time we did not know much about the process of beekeeping. But now the beekeepers have had things explained to them by the technicians at Micaia and people like this activity a lot'*[46]

> *'A lot has changed. There was a time when people did not know about beekeeping and didn't have the knowledge about beekeeping. But now, people have the knowledge'*[47]

A sixth group spoke of a transformation in the types of hives and equipment that are used by beekeepers, '*…Now, because of the beehives that Micaia have given out, people see this as something that can make money'*[48]. Some explicitly mentioned the transition from log hives to Kenyan Top Bar (KTB) hives[49], '*because before we had the KTB hives we had traditional (log) hives just to provide food'*[50]. Another respondent spoke of how Micaia's distribution of hives is what has changed, '*people did not have many hives before but now, with Micaia giving hives, we already have many hives'*[51].

Figure 15. Example of Kenyan Top Bar hive with metal cover

Figure 16. Example of log beehive

A seventh group spoke of the want or desire of those not yet involved in beekeeping to get involved in the activity. '*I dismissed beekeeping before when they started this activity. Now that I see what Mr Francisco [a highly productive beekeeper] has bought, I want to participate in this too'*[52]. '*Now that*

[45] Source, beekeeper survey 6, entry 17, Muoco
[46] Source, non-beekeeper survey 6 entry 3, M'punga
[47] Source, non-beekeeper survey 6 entry 10, M'punga
[48] Source, non-beekeeper survey 6 entry 59, M'punga
[49] Kenyan top bar hives are simple beehives consisting of a sloping box and a series of parallel bars positioned across the top of the box and providing an anchor point for bees to start construction of their combs
[50] Source, non-beekeeper survey 6 entry 24, M'punga
[51] Source, non-beekeeper survey 6 entry 6, M'punga
[52] Source, non-beekeeper survey 6 entry 61, M'punga

people use honey to sell people in this community really want to be beekeepers'[53]. Again, this speaks to the importance of people witnessing the success of others within their community to create an impetus to participate.

One female non-beekeeper suggested that '*everyone wants beehives now and they say that when you have many beehives with bees in them then you can sell and have a lot of money'*[54].

> *'Before we all thought beekeeping was for jokers, but we have all seen others that usually have normal money [average income] start to earn more money and help their families. Now everyone wants to have hives to help feed their families'*[55].

An eighth group in Mpunga spoke of how they have become afraid to participate in beekeeping: '*Yes things have changed. But generally, here in this community (Mpunga), people do not have hives. We are afraid that we will burn the hives like what happened the year before*'.

Importantly, the ninth group expressed that they did not know what has changed about beekeeping[56]. Some evidently did not want to talk about or discuss beekeeping,

> *'I don't know what has changed. I am not interested in these things [beekeeping] and I have never discussed them with others.*[57]*'*

One of the most poignant illustrations of changing perceptions was given by the Micaia beekeeping technician:

> *'Attitudes have changed in the communities [toward beekeeping]. Beekeeping used to be something looked down on. A job for the poorest. Children would laugh and shout and say, 'your father is a beekeeper'. Beekeeping was made fun of. This has changed because some people are earning good money from it now'*[58].

'Yes, it has changed. For a long time before people would say beekeeping is not important for people because we did not think there was a way to sell the honey. But after we saw people selling honey a having money, people already wanted to be part of the project to have money to help and sustain their families'[59]. Perceptions of beekeeping compared to other development projects and NGOs

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[53] Source, beekeeper survey 6, entry 19 Muoco
[54] Source, non-beekeeper survey 6 entry 4, M'punga
[55] Source, non-beekeeper survey 6 entry 17, M'punga
[56] Source, non-beekeeper survey 6 entry 12, M'punga
[57] Source, non-beekeeper survey 6 entry 60, M'punga
[58] Source 5
[59] Source, non-beekeeper survey 6 entry 19, Muoco

A small number of beekeepers discussed the impact of beekeeping relative to other development projects taking place in their community. They provide important insight into how local people view past and present development projects. An alarming theme emerges, relating to the general ineffectiveness of development projects, and how beekeeping and Micaia are the only initiative having a positive impact on livelihoods.

> *'We have been discussing among us the projects that have actually been developed [implemented] here in the community. The question is, to what extent these projects are really helping us. What is changing with these projects? We have been wondering what these projects are changing in our lives. So far, the only project that is making visible things is the beekeeping project. All these other projects that have been coming here, there is nothing that is changing. Now it's [Chimanimani] a national park, but what does this bring [that is] different? It is not making a difference to our development. For example, we are listening to the project SUSTAIN, but what is this project contributing to the improvement of our livelihoods? We are not seeing a difference. This is what the community has discussed.*[60]

Another respondent in the same community highlights the relative effectiveness of beekeeping as a tool for rural development, suggesting that it is the only development project they are satisfied with.

> *We are only satisfied with the honey project. It is the only project that is having an impact we can see. Each one [beekeeper] collects and sells their honey and manages to have some money to build a house and to put their children to study. Honey, we can even raise our hands and applaud the honey project because this project is what is working and everyone here in the community is satisfied with it.*[61]

Similarly, another respondent suggest that Micaia are different to other organisations as they offer more continuous support with visible benefits.

> *The difference between Micaia and other organisations is they are making good and lasting work with our community. Other NGOs usually do not stay in our community for long, and we see that Micaia is helping a lot whereas other NGOs do not.*[62]

[60] Source 8
[61] Source 8
[62] Source 8

Key challenges for honey commercialisation in Chimanimani

The emerging themes of positive livelihood impacts and the effectiveness of Micaia compared to other development organisations are contrasted by some key issues and challenges experienced by beekeepers.

Frustration and disillusionment

As previously discussed, some beekeepers are struggling to produce honey, despite receiving equipment and training from Micaia. Interviews reveal this is a source of huge frustration. '*I am not satisfied as I am not managing to sell much honey. I don't know why*'[63]; '*I am satisfied but not a lot because the quality of my honey isn't improving. I am worried about this*[64]'; '*I am not satisfied as I have still not sold a large quantity of honey*'[65]; '*I am not satisfied as I have not yet sold much honey. It is because of this I cannot say if beekeeping is important to me or not*'[66]. Crucially, Micaia staff confirm this frustration and suggest that frustration over poor production is a problem causing people to abandon the activity or leave their hives in the forest:

> *'Honey production is highest when we first start to work with a new community. Then it goes down [...] I am not sure. I think people don't make money like Muriro and they stop going to the hives. Some keep working and produce more honey but many produce less because they are just leaving the hives'*[67].

Some beekeepers were more accepting or less frustrated at their failure to produce honey, suggesting that luck is an important factor[68]. For example, '*it depends on the luck of each person. There are beekeepers that when they install their hives, not much time passes, and they have bees. But there are others that it takes a long time for the bees to enter*'[69]

> *'We have people that have luck with their production, people that have the espirito de mel [spirit of honey]. Some have the spirit of honey, others do not'*

[63] Source, beekeeper survey 6, entry 17, Muoco
[64] Source, beekeeper survey 6, entry 18, Muoco
[65] Source, beekeeper survey 6, entry 14, Muoco
[66] Source, beekeeper survey 4, entry 2, Mussapa
[67] Source 5
[68] Source, beekeeper survey 2, entry 6, 10, 13, 26, Mucawaio, entry 30, 31, 32, 34, 35, Mpunga
69 Source, beekeeper survey 2, entry 6, Mucawaio

Delays, inadequate support and elite capture

A challenge that emerged across multiple communities related to delays in honey collections or payments. Within Muoco, for example, multiple beekeepers emphasised a similar point, '*This year Micaia took a long time to come and take our honey and the bees had already started to eat all the honey. They must come earlier in the year, in August. By September or October, the bees have eaten the honey*'[70]. Beekeepers in Mpunga also discussed delays to honey collection, but their concern was not that honey was being consumed by their bees, it was that their honey was spoiling in storage.[71] '*Last year Micaia delayed coming to buy our honey and my honey was finished. It was starting to spoil so I took my honey [from a communal storage point] and ate it with my family*'[72]. In Mussapa, people were concerned with a different type of delays. Specifically, delayed payments and the implications of this, '*Micaia should stop delaying people's payments after people deliver their honey…Micaia should not delay*'[73]. The consequences of lags between collection and payments were expanded during an informal interview with one beekeeper,

> *'The delay between Micaia taking our honey and the money being paid has been two months. This was ok for me but for others without money. Some people need that money. People can have plans to buy fertiliser, but the money did not arrive and they had to do without. People produced less crops because of this… It is important for people to receive their money at the time of planting'*[74].

None of the 37 beekeepers interviewed in Mucawaio indicated that there was any issue with delays in buying or payments. Beekeepers had the opposite opinion, '*Selling to Micaia is easy. There is a specific time to start to sell honey. This makes it easy to sell honey to Micaia in our community*'[75]. I see two possible explanations: 1) that people in Mucawaio are less likely to be critical of MHC; 2) MHC are better at supporting Mucawaio compared to other communities.

Another challenge relates to the lack of support that beekeepers get from the lead beekeepers. Two beekeepers complained about the selection of the lead beekeepers, suggesting that the role of lead beekeepers have been given to people it shouldn't have been. Two beekeepers in two different communities at the opposite end of the Chimanimani buffer zone (Muoco and Mussapa) suggested that '*there should be transparency in how lead beekeepers are chosen. I don't know how they are*

[70] Source, beekeeper survey 6, entry 13, Muoco
[71] Source, beekeeper survey 6, entry 25, 26, 27, M'punga
[72] Source, beekeeper survey 6, entry 25, M'punga
[73] Source, beekeeper survey 4, entry 23, Mussapa
[74] Source, informal interview, 21/09/2019, Mussapa, green notebook
[75] Source, beekeeper survey 2, entry 6, Mucawaio

selected'[76], and '*First, the choice of lead beekeeper must be democratic*'[77]. Other beekeepers directly criticised the skills or work ethic of their lead beekeeper: '*We cannot have lead beekeepers that do not know the community and do nothing to help beekeepers*'[78]; and '*We are asking Micaia to give us lead beekeepers that will help with our beekeeping work. My beehives were knocked down by the cyclone and I had to pay someone to help me put them back up. Calling the lead beekeeper is no use. He will not come*'[79]. Similarly, another beekeeper in Mussapa criticised the general unresponsiveness of their lead beekeeper, 'W*hen my bees died, I called for the lead beekeeper, but he did not come to see my hives, I do not know why*'[80]

Many interviewees discussed challenges associated with equipment and how these can be improved. Many discussing this challenge suggested that Micaia should distribute more beehives so beekeepers can produce more honey[81]. This was a request I heard repeatedly when talking to the beekeepers of Chimanimani. Six beekeepers, however, emphasised that it is the process of equipment distribution that needs improved, with four of the six suggesting distributions have been unfair and uneven so far: '*I think that they [Micaia] should give the opportunity to the whole community and not chose which people to give the beehives to*'[82]; '*one of the main challenges is to increase the number of hives. But also, Micaia should give priority to people that don't yet have hives so they can have hives too*', and '*they should not give more hives to the people that already have a lot when others do not have any*'[83]. Beekeepers also criticised the hive distributions processes as opaque, '*they need to tell us when the beehives are going to arrive. People normally don't know when the hives will arrive and be given*'[84]. For a handful of beekeepers, a different type of equipment was the issue. Specifically, a lack of uniforms or protective equipment, 'first *we should have uniforms to help with our work with the bees. I don't like getting stung*'[85]. One beekeeper in Mpunga lamented how his community originally received beekeeping overalls but had received no additional sets.

> *'We should have more equipment to help our work progress. When they started, Micaia brought six overalls for us to share. Since then, the number of overalls has*

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[76] Source, beekeeper survey 4, entry 3, Mussapa
[77] Source, beekeeper survey 6, entry 20, Muoco
[78] Source, beekeeper survey 6, entry 20, Muoco
[79] Source, beekeeper survey 6, entry 21, Muoco
[80] Source, beekeeper survey 4, entry 3, Mussapa
[81] Source, beekeeper survey 6, entry 7, Muoco; beekeeper survey 4, entry 15, 17, 26, 27 Mussapa
[82] Source, beekeeper survey 6, entry 3, Mucawaio
[83] Source, beekeeper survey 6, entry 2, Mucawaio
[84] Source, beekeeper survey 2, entry 21, Mucawaio
[85] Source, beekeeper survey 6, entry 5, Muoco

not increased. They always promise to bring more but until now they have not given more equipment'[86]

Figure 17. Beekeeper with new overalls received from the World Bank funded project Mozbio

Several beekeepers suggested or hinted that elite capture was occurring with regards to beekeeping, indicating that gear and equipment were being concentrated in the hands of those in charge. For example, when I questioned one young beekeeper why he reportedly had three beehives instead of the standard five provided during distributions he responded '*people give to their friends here'*[87] suggesting two of his hives had been given to someone else close to the lead beekeeper. He did not want to explain more. Similarly, *a female* beekeeper in Mucawaio lamented that they had been given five hives several years before but had received no additional hives as she has watched other members of the community, with better friendships with the lead beekeeper, now had between 10 – 15 hives [88]. Moreover, my observations from the field note that the lead beekeepers are in possession of significantly more hives than others. On tours around their hive sites in Mucawaio and Mussapa, I

[86] Source, beekeeper survey 2, entry 36, Mpunga
[87] Green notebook, Informal conversation, Mussapa
[88] Source, beekeeper survey 2, entry, 26, Mucawaio

noted that the lead beekeepers had ~ 30 and ~40 hives, respectively. Considering a large number of hives have been distributed widely across communities, and most individuals did not want to discuss elite capture, these insights suggest capture is happening in relation to how hives are distributed. At the least, lead beekeepers are concentrating possession of hives towards themselves and their friends, increasing their production potential and potential share of the money paid to communities by MHC.

Weakening relationships

Another key challenge for MHC seems to be the breakdown in the working relationship with some communities. Micaia's relationship with Mpunga has been severely weakened following the bushfires in 2014. One respondent communicates profound disillusionment with development interventions in general, suggesting that they will focus on banana production instead of trusting projects and NGOs.

> *We say our relationship is strong [with Micaia], but in reality, it is not strong, but weak. I say that because we were given 5 beehives by people a long time ago and we had problems with fires and other beehives burned, and when we look at the [neighbouring] communities of Sevetin and Matoe we see that these communities have many beehives and in Mpunga we do not have them [...] we are not seeing projects in our community, our children carry water in bottles because the NGOs don't want to install a water pump while they are working here. And this new project Mozbio 2, it will also end soon. We only hear names and they have done nothing. In our community we don't have a honey warehouse, but in other places there are.*[89]

Another resident spoke about the relationship between Mpunga and Micaia, and why the community was not included in recent beehive distributions. He spoke candidly, '*The friendship between Micaia and Mpunga has changed since we lost the hives. We still have a strong friendship as there is Ndzou (tourist lodge) [...] The regulo knows we have not received as much as the other communities*'[90]. However, Mpunga's regulo was optimistic about the relationship between MHC and Mpunga, '*we will receive more hives, maybe not this year but they will arrive*'[91].

[89] Focus group 2 Community 5 Mpunga centro
[90] Source 11
[91] Source 8

Discussion

This chapter aimed to evaluate the financial contribution beekeeping makes to rural livelihoods in Chimanimani, present local perceptions of the NTFP commercialisation process, and use these to understand the impacts of NTFP commercialisation. Combining the quantitative and qualitative data I interpret three categories of producer for discussion: specialist / high earners; negligible income; and small but highly valued income. Each with different challenges and contributions to debates surrounding NTFP commercialisation.

Specialists / high income earners. Across the four communities there are a small number that have seemingly seen significant improvements to their wellbeing due to MHC's honey commercialisation. These individuals have become specialist beekeepers who rank beekeeping as their most valuable livelihood above all else, even agriculture. These specialists have received high-value payments (300-550 USD) for multiple years, which significantly exceeds median and average payments made to beekeepers by MHC. These individuals reported a profound increase in their wellbeing because of their participation in beekeeping: they have invested in assets they previously could not afford, they farm more land, and their families no longer experience hunger during the hungry season. Together, these specialist beekeepers provide compelling evidence that the impact of honey commercialisation and MBIs can be transformational for a small number. These findings reinforce the position that NTFP commercialisation can provide an avenue out of poverty for some (e.g., Tewari, 2012; Shackleton et al., 2007). This study does not reveal why this group has been extraordinarily successful producers while others struggle. However, one partial explanation is elite capture. There is some insight that these individuals engaging in elite capture with regards to equipment, with the high producers possessing many more hives than other beekeepers.

No or Negligible income: the new and the disillusioned. At the other end of the spectrum are a relatively large group of beekeepers earning nothing or only small amounts (0 - 5 USD per year). Either they are yet to start producing honey, consistently produce only small quantities, or have given up beekeeping and their hives sit in the forest unattended. For some, the low production can be explained by recent expansion of beekeeping in 2019 and the inhibitory effects of cyclone Idai. Others have been active but failed to produce for multiple years. Part of this group remained optimistic that they will improve as beekeepers and their production will increase. Others are disillusioned with beekeeping as a livelihood, presenting negative views of beekeeping's contributions to their livelihoods and as a source of income, i.e., that it is only worth small amounts of money, makes a limited contribution to their subsistence or that they do not have the *espirito de mel*. Micaia staff confirm this disillusionment and suggest it is widespread; that honey production is highest immediately following beekeeping's introduction to a community but quickly declines when

beekeepers experiencing low production / income. Disillusionment with beekeeping is seemingly compounded / driven by MHC's unresponsiveness to requests for help when they struggle. This suggests that beekeepers need more training or support. The inadequate support is understandable considering MHC's limited resources and its reliance on a training of trainers approach, which requires key community members to pass on what they have learned from training sessions, but with no real incentive or monitoring of what or how this information is passed on. Within the group of low producers, Mpunga represents a unique case. Their poor production is explained by the unfortunate loss of hives in uncontrolled fires in 2014. Members of the community are alarmingly discontented, suggesting that their relationship with Micaia is weak, they are actively being excluded from development interventions, they have little trust in external interventions, and that only activity they can now rely on is banana cultivation.

The group of disillusioned beekeepers represents an interesting challenge. It clearly undermines the objectives of MHC and Micaia if beekeeping does not meet expectations and people withdraw. A potential solution for MHC would be a more patient approach to hive distributions, making sure a smaller number of beekeepers are adequately trained and equipped. If MHC continue to use a training of trainer's model, these trainers must be better incentivised to pass on their knowledge. Flooding communities with hives may be what communities or donors demand, but if it is not accompanied by adequate support then negative attitudes of beekeeping, development projects and NGOs can form, potentially limiting future collaborations and buy in.

Small income but highly valued. Most beekeepers receive small payments, with beekeepers in the most productive community, Mucawaio, receiving a median income of 23 USD. Considering the limited size of these payments alone, beekeeping represents a supplementary livelihood activity that is unlikely to significantly alleviate poverty across Chimanimani. The quantitative data seemingly reinforces the widespread consensus in the literature, that NTFPs are unlikely to produce large incomes and cannot lift large amounts of people out of poverty (Angelsen et al., 2014; Shackleton & Pullanikkatil, 2018).

The qualitative accounts from beekeepers earning these small incomes however challenges this study's quantitative data, and the wider consensus. Despite the modest payments, many spoke passionately about the impact of beekeeping, suggesting it has become an important or even crucial component of their livelihoods. They report how the incomes from honey have helped them fulfil their ambitions or plans, to buy assets such as roofing sheets and brick walls, to improve education for their children, to buy household necessities to sustain their families, to seed small businesses, to eat better food, to hold on to staple crops instead of selling due to a lack of cash. Moving testimonies from elderly and widowed participants suggested that beekeeping is providing an accessible way for them

to survive following the loss of their breadwinner, underscoring the ability of beekeeping to contribute to the livelihoods of the vulnerable, older and less physically able. One of the most important aspects of apiculture is that it provides cash income during the hungry season, when crop supplies are dwindling, maize prices are high, and people are hungry. In the context of Chimanimani's hungry season, 23 USD will pay for approximately 3.5 latas (70 litres) of Maize when prices are at their peak. Considering the size of the payments, I suggest that beekeeping disproportionally contributes to poverty mitigation due to some key characteristics: the lack of other income earning activities in the area, it's accessibility and compatibility with other livelihoods, the consistency of the market, the timing of payments and how it complements existing agricultural livelihoods. The compatibility of NTFPs with other livelihoods has been discussed in previous work (e.g., Schrekenberg et al., 2002; Shackleton & Shackleton 2004; Shackleton & Pullanikkatil, 2018). Although MHC's honey commercialisation has not eliminated poverty in Chimanimani, its characteristics and ability to consistently make small payments has mitigated poverty for many.

Overall, these accounts of the low earners suggest that beekeeping is contributing to enhanced rural livelihoods in varied and highly valued ways. Perhaps this should not be surprising considering the extent of poverty in Mozambique. Recent survey work shows that 75% of Mozambicans spend less than 1 (USD) per day and that more than 90% are under the 1.90 USD World Bank international poverty line. Thus, 23 USD directly paid to Chimanimani's residents is significant.

A key finding of this study is that many local people perceive beekeeping as the only development intervention currently having any impact on their poverty. This is surprising considering Chimanimani has been the focus of substantial conservation and development funding from a myriad of international and national organisations since Mozambique returned to peace in 1992. Virtanen (2020) has highlighted the weakness of previous development projects in the area, pointing to development funding being largely directed to state-led implementation staff while delivering few durable benefits to local communities. I find that local perceptions still align with Virtanen's (2020) conclusions 10 years on from the bulk of the study's data collection. This chapter reveals that development NGOs subject local communities to a barrage of project meetings, which they find tiresome and have little faith will lead to any livelihood benefits. Local people nevertheless remain optimistic that an initiative with the ability to alleviate poverty will eventually arrive, and the communities continue to welcome development organisations. This context potentially explains the enthusiastic testimonies of those receiving only modest incomes from beekeeping—an initiative providing a consistent benefit, however slight, will be perceived as a success, and the relative value of MHC's NTFP commercialisation is therefore enhanced. I note there is potentially significant lobbying from respondents in my data whereby some overemphasised the contribution of beekeeping, i.e., where beekeepers receiving small

incomes do not want to say anything negative out of fear that support for beekeeping may be withdrawn.

Conclusion

Taking the quantitative component of this chapter by itself, it would be easy to conclude that MHC's beekeeping initiative is only providing small incomes and having minimal impacts on poverty alleviation. This would align with the broad consensus that NTFP commercialisation has limited value as a as a tool for development (Angelsen et al.,2014). Giving voice to the producers and local people that have experienced MHC's honey commercialisation provides a different picture, revealing that modest payments matter. They not only matter but have significantly mitigated poverty for many, allowing food to be bought during lean times and for people to buy assets they previously could not afford. MHC has transformed beekeeping from stigmatised livelihood of the poorest to a highly valued part of life. This chapter therefore contributes to wider debates around the value of NTFP commercialisation and entrepreneurship as a tool for poverty alleviation and conservation by demonstrating that the impact of NTFP commercialisation on mitigating poverty can be much higher than the dominant, quantitatively derived, viewpoints suggests. Relying on quantitative studies to gauge NTFP impacts can mask the importance of the contribution of NTFP commercialisation to rural people and therefore qualitative analysis should accompany quantitative studies on NTFPs and their impact on rural livelihoods.

In Chimanimani's buffer zone, honey production has been the only approach, among many, capable of having any positive impact on livelihoods. This ineffectualness is likely related to the hostile institutional environment discussed in previous chapters. Nonetheless, I argue that this context significantly strengthens the importance of NTFP commercialisation and entrepreneurship as a tool for rural development, poverty alleviation, and conservation. It should be better promoted and integrated with national strategies. Not relegated to a second-tier approach or neglected by policy makers and practitioners. The next chapter of this study aims to unpack the impact of Baobab Products Mozambique and international baobab trade on the rural communities in Guro, Central Mozambique.

6. Impacts and changing perceptions of Baobab for conservation and development

The overarching aim of this chapter is to explore the impact of baobab commercialisation on rural households and analyse local perceptions to better understand the worth and challenges associated with MBI entrepreneurship for conservation and development. The chapter therefore presents the same research question as the previous chapter but applies it to a different value chain:

> **What impact have the focal entrepreneurial interventions for honey and baobab had on local livelihoods?**

And the following sub questions,

a. What is the financial contribution of these interventions to participants
b. How have participants perceptions of the focal resources changed?
c. How are these interventions perceived by participants compared to other livelihoods and conservation or development interventions?
d. What do these perceptions reveal about the challenges associated with entrepreneurial interventions for conservation and development in Mozambique?

This chapter explores changing perceptions of the value of baobab in Guro, Mozambique. It tracks local perceptions of the fruit's value as it changes from a subsistence resource, to an informally traded item, to a formal and internationally traded commodity. The chapter predominantly uses the views and experiences of local baobab collectors gathered during 39 interviews across two communities conducted in 2019, but also draws on informal conversations and interviews with other community members. First, this chapter explores perceptions of baobab and its value before informal or formal trade began. Second, the chapter discusses motivations of the collectors to engage in baobab collection. Third, it analyses uses of income from baobab following commercialisation. Fourth, it compares baobab collection as a livelihood activity relative to other livelihood strategies and fifth discusses local perceptions of the baobab trade.

Perceptions of baobab before commercialisation

To understand the changing importance and value of baobab, I asked female baobab collectors, the Regulos and male community members to compare how they personally talked about baobab in the past (both before BPM and before the informal market) to how they talk about it in the present. The answers were diverse, revealing variegated ways in which people viewed baobab before markets,

during informal markets, and after the arrival of BPM. This question was however difficult for many collectors as they struggled (or did not want) to recall how they talked about baobab in the past.

Three main answers are evident for those that spoke about baobab before commercialisation. First, for many collectors, baobab was not a topic they ever discussed in detail until the arrival of the informal and formal markets. As one collector notes: '*People didn't say anything about malimbe [baobab] before the Malawians arrived*'. Similarly, another suggested 'I don't think w*e talked about baobab before*'. And '*Before [BPM] people didn't talk about Baobab. It was just a fruit*[1]'. Both regulos of the communities reiterated this position **'***In the past, baobab was nothing. We left them in the forest to rot and be eaten by the animals'*[2]. And, '*people thought baobab was only a thing to eat. We didn't take it seriously, we left it for the monkeys to eat in the forest*'. Thus, according to multiple sources, baobab was of little importance to the communities before the arrival of informal traders and BPM. It was something that could be eaten but was mainly left for the animals.

Second, interviews and informal conversations with male community members suggest that baobab was an important source of nutrition during lean times. I asked one community member if he tells any stories about baobab to his family or friends, '*the only story I tell about baobab is about hunger. We say, when you have malambe you will not starve. When you are in the bush you can mix a little maize with malambe and your hunger will be gone*'[3]. The village regulo confirmed the importance of baobab as a food source during periods of hunger during a detailed retelling of his own experiences,

> *'When I was young and we had hunger, we would go to the forest and collect baobab so we could pound it into a powder and make a porridge. After eating this porridge, the hunger would be gone and you could sleep. I never thought it could bring money to us…during the war we couldn't go to Guro [the regional market] to buy food. This time, during the dry season, we would eat lots of baobab porridge*'[4].

The rise of the informal market: the Malawian value chain

BPM staff, collectors and traders indicate that there has been a large informal value chain for baobab with links to Malawi, hereafter 'Malawian value chain'. Throughout the Baobab season, Malawian buying agents travel into the area and set up temporary collection points across the rural

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[1] Source 30
[2] Source 28
[3] Source 31
[4] Source 29

communities of Guro and Tambara. Once these agents move in, baobab collectors transport their fruit, first from their farms (usually located in the forests outside of villages), to their households and then to the collection points. Baobab is transported manually by collectors or on ox carts steered by male family members[5]. Baobab is bought in sacks of pulp, requiring collectors to process the baobab themselves, i.e., separate the pulp from the shell and seed. The agents organise and coordinate their movements by utilising local contacts throughout the region, which relay information to them regarding stock volumes in each community[6]. This helps agents to respond to baobab production and supply as it changes, both year to year and throughout the season. As the season progresses, and baobab stock diminishes across the region, Malawian traders will compete against each other for the last remaining fruits, in turn, driving multiple informal traders to communities with remaining stock and pushing up prices[7]. Purchased baobab is transported across the border to Malawi where it is then sold to established companies specialising in the manufacture of baobab products for the national market[8]. The Malawian traders are widely regarded to operate informally. Allegedly they largely avoid the formal system of taxes, opting to pay bribes to get themselves and their baobab across borders and through checkpoints. Malawian traders are generally viewed as exploitative by the focal entrepreneurs, '*people were swapping a bascilla [11-12 kilos of cracked baobab] for one plate which is about 20 meticais [£0.20]. Ludicrous. That is part of the reason we got into [buying baobab] in the first place*'[9]. Interviews with collectors reveal that the prices paid by Malawian traders however vary as the season progresses rising from 20 to 50 meticais (0.5 GBP) per bascilla at the end of the season[10]. Although the Malawian baobab market is commonly acknowledged to be the largest in the region, the exact scale of the chain is unknown due to its informal nature. Interviews suggest there have been significant fluctuations in this value chain in recent history. the collapse of a large manufacturer of baobab produce in Malawi led to a substantial reduction in demand for pulp from communities in neighbouring Mozambique .

Perceptions of the Malawian value chain

The baobab collectors indicated that Malawian agents were the ones that originally motivated them to collect baobab for sale. '*Malawians motivated us to collect malambe. The Malawians came and offered*

[5] Source 14
[6] Source 1
[7] Source 1
[8] Source 14 & 26
[9] Source 14
[10] Source 44

us money or things to exchange for baobab. I used to see my friends selling to the Malawians, getting plates and dishes, money, clothes, and containers'[11].

Collectors recalled when the informal buyers dominated the market before BPM. '*People were collecting small amounts baobab to swap with the Malawians for plates and other small things*'. Other collectors recalled how they previously considered the informal trade to be a positive addition to their community, but how they would frequently complain about the practices of the informal buyers. For example, '*Before, we use to say that the baobab was good, but we also complained about the* [measurement] *dishes that Malawians use. The dishes were large, very large*'[12]. Whereas others apparently complained about the low prices of the informal trade[13]: *'Before BPM, with the Malawians, we used to complain about the price. It was too low'*[14]. Importantly, one collector spoke of how the arrival of BPM has changed her perspective of the informal market: '*We know because of BPM that the Malawians were beating us in a sack with their prices…they will buy for 20 meticais early in the season, 30 in the middle and 50 at the end*'[15].

Collectors spoke of the difficulty they had negotiating with agents for better prices:

> *'We usually argue about the price [with Malawian agents] but they cannot be moved on the price and tell us to go back the house. We discuss this in our community that we need to refuse to sell until they raise the prices…but it is hard. We have necessities, people that need the money badly, so someone always starts to sell'*[16].

Although our entrepreneurs viewed bartering for plates and household items as exploitative, several collectors communicated a preference for this practice. Rural baobab collectors do not have easy access to household items, meaning people in the communities are open to trading[17]. One collector communicated the value of this trade and its motivational power. '*We could find these things [plates and dishes] here in our community but you needed a lot of money to buy these things. It was much easier to trade malambe with the Malawians'*[18].

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[11] Source 45
[12] Source 25
[13] Before we used to sell to Malawians for not much money, but it was still important now, we can sell for more money; When people were selling to Malawians only, they used to complain about the prices and the way they used to buy, using big dishes for only 30 mets. They don't complain now. And if you crack you get paid again, (cracking job in Nhamasonge) this is something I like a lot.
[14] Source 10
[15] Source13, 30
[16] Source 43
[17] Source 26
[18] Source 45

The formal market: BPM value chain

The exploitative nature of the informal value chain coupled with increasing international demand provided the opportunity for BPM to pioneer a more formal value chain in the region. Since commencing operations in 2015, BPM has bought significant quantities of baobab across 23 communities in Guro and Tambara: buying 60 tonnes in 2015 increasing to 500 tonnes of uncracked baobab in 2020. BPM pays higher prices compared to Malawian buyers but buys baobab in a different way. Where Malawians buy *bascillas* (11- 12 kg buckets) of shelled baobab pulp, BPM pays 6 meticais 6 meticais per kilo of unshelled fruit[19]. Part of what facilitates this relative price premium is the access the company has to European markets. Since 2016 the company has had certified organic status and is positioned as a significant exporter of organic quality baobab powder from Africa. This has allowed the company to connect its producers to an international market, exporting to Europe, while delivering a relative price premium to producers to improve incomes and livelihoods.

The specificities of BPM's value chain have changed significantly since inception and some of the salient characteristics can be summarised as follows. A buying campaign will start when BPM agents liaise with community representatives to gather information and coordinate baobab collection windows in each community (one or more collection windows may be organised in each community dependent on production and demand). This will signal for baobab collectors to transport their baobab closer to the agreed collection points. During a given community's collection window, BPM will purchase whole fruits and transport them to local collection centres (currently one in Nhamasonge, Guro and one in Lampa, Tambara). Here, baobab will undergo an initial processing where local women crack the fruit (separate the pulp and seed from its shell) under supervised conditions. Whole fruit are purchased and cracked under supervised conditions, improving overall product quality, and maintaining necessary standards for the organic international market. Fruit is then transported onwards to the main processing factory in Chimoio. Here baobab is further processed to a powder and is stored or packaged for sale and export.

Local motivations

In Guro I asked 39 baobab collectors about their reasons for collecting and selling baobab. Unsurprisingly, the majority of respondents stated that money is the primary motivational factor that

[19] Household survey, female baobab collector, Nhamasonge, 07/11/2019

drives them. However, exploring the responses reveals nuances and several identifiable groups of answer emerge. Not only do the answers provide insight regarding the personal motivations of collectors, they also reveal different ways in which individuals have learned about BPM, their different reasons for wanting money, and the different ways in which they compare BPM's practices to other buyers. Together, these responses build a comprehensive picture of why collectors engage with BPM, and the advantages this MBI offers to its participants.

Foremost, a group of women simply stated that when they found out baobab was worth money and that is why they started to collect, *'I was motivated by the money it could bring. We were told by the BPM that they were looking for baobab. They did not tell us the price, but we went and collected'*[20]. Similarly, one respondent spoke of how she moved to her current village and discovered how baobab was worth money[21].To this group of women, they simply suggested that baobab is a source of income and that was adequate motivation to engage.

The second group explicitly stated that they were motivated to start collecting baobab due to the comparative price premium offered by BPM: '*I was motivated by the money we would receive. Before people here used to sell to informal buyers. When BPM arrived, they offered a high price, so I wanted to start*'[22]. Crucially, this group represents women that only began collecting baobab because of BPM. This suggests that the previous buyer's (the Malawians) prices were too low to motivate them to engage in baobab collection.

The third group discussed how the need of specific items or goods motivated them to start collecting baobab. Two subgroups emerge: those seeking personal or family development[23], and others wishing to combat poverty by buying food. Those seeking development suggested they were motivated by a variety of items, such as clothes, soap, school materials, livestock and to expand their fields:

> *'I had things missing at home so I wanted to earn some money to buy school materials and open fields so we can make new machambas [fields]. Before I used to only work in the fields. Then the buyers appeared with things we need for the house …They offered us these things we needed, things we didn't have'*[24].

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[20] Source 1
[21] Source 2 – 'Money was the main the thing that motivated me. I didn't collect malambe before (more than two years ago). Before, two years ago, I was living in another village and could not pick malambe there. I found out that malambe was worth money at a meeting in the village and that many people are doing it here. I decided I want to do it too'.
[22] Source 5
[23] Source 9: To buy the necessities of the house motivated me, such as clothes for kids and soap, clothes for myself, money for the *moagem* (grinding mill). The good prices that bpm was offering motivated me to.
[24] Source 8

For two women buying clothes was apparently the initial driver of collecting and selling baobab: '*I needed money to buy clothes. As a person, you know things you are missing so that's why clothes were the priority*'[25]. '*To buy clothes motivated me, flipflops, capulanas. I saw a friend that had been buying clothes and I was motivated by this*'[26]. Of those wishing to combat poverty and buy food, one collector spoke of being motivated to collect and sell baobab by hunger:

> *'Being hungry motivated me to start collecting malambe. We didn't have enough crops last year, we were hungry. I don't want that to happen again this year'*[27].

A fourth group spoke of how they were motivated to start collecting baobab because BPM's methods were superior to other buyers[28]. Foremost, collectors prefer that they do not have to process their baobab to sell to BPM, '*When the company [BPM] appeared they wanted to buy the whole shell, they were offering us more money for the whole fruit whereas we were selling cracked fruit before*'[29]. Another collector put it simply: '*Selling baobab with shells motivated me to start selling. It is much less work than cracking baobab*'[30]. Similarly, another collector attested that having to crack the fruit to sell to the informal market had put her off collecting baobab entirely, and she had only started collecting when BPM arrived[31]. Second, some indicated that they like the fact that BPM weighs the fruit when they buy it as they perceive it to be fairer or more legitimate. This contrasts with the Malawian buyers that use large dishes / buckets to measure the baobab, '*Charles* [BPM field staff] *said if we collect baobab, then he will buy the baobab. And that he will weigh the baobab. This way is better than buying using the dish*'[32]. Thus, for some community members BPM's practices have been a significant draw to baobab as a livelihood activity. BPMs practices are widely acknowledged to reduce the workload of collectors and are also perceived to be fairer than other buyers due to their weighing practices.

Uses of income from baobab

To help evaluate the importance of the baobab trade to local actors I asked 39 respondents what they did with the last payment they received. Again, a diverse range of answers are on display, with sixteen

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[25] Source 10
[26] Source 11
[27] Source 12
[28] Source 3, 4
[29] Source 3
[30] Source 6
[31] Source 4 - 'I started buying baobab when BPM started buying and I liked the way that they buy. They buy the complete fruit and therefore I don't have to crack fruit. Cracking fruit is lots of work and that stopped me collecting baobab before'.
[32] Source 7

groups of goods, services and actions being discussed. Commonly reported uses of baobab income (8 respondents or more) revolve around five answers: food, household necessities[33], clothes, maize grinding, and livestock. Household necessities and clothes were the most commonly bought items, with each mentioned by 17 respondents. Household necessities refers to four main items: oil, salt, soap, and plates. The clothes the collectors are buying are reportedly either for themselves or their children, and common items of clothing purchased were either capulanas (traditional female dress) or sandals. One collector proudly indicated that the baobab trade is the reason that women in the community are so well dressed: '*We buy new clothes with the money [from baobab]. You can see our clothes are new and clean. We buy soap to wash them too*'[34].

Twelve respondents bought food with their income. The answers reveal that most of these individuals bought food due to shortfalls in their food stocks and in anticipation of forthcoming hardship in the dry season: '*I bought sacks of food. Four sorghum and six maize to help us in the dry season. There is hunger in the dry season, so it is important to have food stored*[35]'. However, two respondents spoke of buying *luxury* food items, i.e., not staples but foods to enhance flavour; for example, '*…I bought good vegetables and herbs to make sauces* [to eat with xima]'[36]. Eight respondents reported that they had used the money to grind maize into flour (farinha). As one collector highlights, *'I spent all the money at the grinding machine…it was 2,300 meticais (23 GBP) to grind 16 sacks of maize*'[37]. Nine of the respondents bought livestock including pigs, goats, and chickens. Goats were the most common, with seven respondents reporting to have bought goats. All respondents buying livestock intended to breed the animals as a source of meant and additional income for their families: '*Malambe is important as it supports my other activities. I have bought goats and pigs…if I have a lot of malambe one day I hope to buy a cow*'[38]. Six respondents indicated that they had built a house or bought construction materials which will eventually be used to build a house. Importantly, all women reporting to have spent their money on construction were from female headed households and were divorced, widowed, or separated from their husbands.

[33] Including salt, oil, soap and plates and buckets
[34] Source 28
[35] Source 3
[36] Source 22
[37] Source 26
[38] Source 27

> *'The money [from baobab] built this house behind me. This house will be where I sleep. My last house was made of mud and branches, but this house is better as it is made of bricks. It is much better'*[39].

The remaining uses of income were mentioned by only a few respondents. Some collectors report that they have used their money from baobab to open new fields and expand their agriculture: '*With the money I get from BPM I have paid people to open machambas [fields] for me. Many people are opening new machambas with this [money from baobab] money*'[40]. Four reported using the money to buy schoolbooks or to pay their children's tuition fees. Two used the money to travel. Two reported paying labour to open new fields. Two indicated they had saved the money for later. Two bought new telephones. Two gave part of the money to their husbands. One reportedly lost the money. One paid for hospital bills and medication. One used the money to finance her dried fish business. Whereas one reported that she had bought a bicycle and gifted it to her husband:

> *'I bought a lot of things. Food, oil, clothes, plates, and a bicycle for my husband…he was very happy with his bicycle, he danced a lot when he received it. Like how he dances in church'.*

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[39] Source 10
[40] Source 4

Table 7. Uses of baobab income by collectors selling to BPM

Category of use	Specific uses	Example	Count	Source
Food	Sorghum, maize, vegetables, herbs, and spices	'*Sacks of food. Four sorghum and six maize to help us in the dry season. There is hunger in the dry season, so it is important to have food stored.'* *I bought good vegetables and herbs to make sauces* [to eat with cima]'	12	Source 3
Livestock	Goats, chickens, and pigs	'*I bought two goats to breed. And food, oil, spaghetti and clothes for the kids. The goats are the most important things I bought as they will breed and then I can earn more money.'*	9	Source 22
Household items / necessities	Plates, buckets, salt, soap and oil	'*I bought soap, food, clothes for the kids, I ground milo, I got some salt. I don't know what was most important to me, all are important.'*	17	Source 5
Clothes	Capulanas and sandals	'*We buy new clothes with the money [from baobab]. You can see our clothes are new and clean. We buy soap to wash them too.'*	17	Source 27
Services	Grinding machine, labour to open fields or transport	*'I spent all the money at the grinding machine…it was 2,300 meticais (23 GBP) to grind 16 sacks of maize.'*	12	Source 26
Assets	Houses, mobile phones, bicycles	*'I bought a lot of things. Food, oil, clothes, plates and a bicycle for my husband…he was very happy with his bicycle, he danced a lot when he received it. Like how he dances in church.'*	9	Source 8
Education or Healthcare	School fees and books, hospital bills or medication	'*I bought schoolbooks for the children.'* *'I used the money on transport to visit hospital, I first went to Guro and then I went to Malawi. I have problems with my stomach.'*	5	Source 25

Baobab collection relative to other livelihoods

I asked collectors to compare baobab collection to other livelihood activities that they have engaged with over the last year. The intention was to explore the relative importance of baobab collection to other livelihoods, and gain insight into characteristics of the trade that make it compatible (or incompatible with peoples' lives. The results of the survey indicate that 5 out of 38 consider baobab collection more important than all other livelihood activities that they do. 21 suggested that baobab was more important than most other livelihood activities. 9 said it was as important as other livelihoods. 2 said it was less important than most other livelihoods. 1 said it was less important than all other livelihood activities. Asking individuals to explain their answers illustrates a diverse range of characteristics that make the trade valuable to local actors, weaknesses in their other livelihoods, and how baobab compliments existing livelihood strategies.

Of those that consider baobab collection to be a more important livelihood than all other and most other livelihood activities, a large variety of answers were given as justification. Foremost, a common answer was simply that baobab is worth more money to them than any other livelihood[41]: For example, '*[baobab] is more important than others [livelihoods]. This year I earned more money from baobab than I did from other activities*'[42]. This opinion was repeated numerous times by different respondents: '*It is my main source of money that I earn*'[43]; '*The money you get from selling baobab is much more than what you can earn from selling crops*'[44]; '*if you collect a lot of baobab you can earn a lot more money compared to doing other activities*'[45]. Overall, it seems baobab is the main source of cash income for numerous collectors, offering the largest possible return for their efforts and labour. Moreover, when women live alone the baobab trade takes on added importance,

> *'Malambe has been important to me as it has brought me more money than selling crops, like peanuts. It is my main source of money that I earn. It is very important as I live alone, my husband is away'.*

Second, some collectors suggest that selling baobab is not only more profitable than other livelihoods, such as selling crops and animals, it is also an '*easier*' way to earn income. Analysis suggests there are multiple reasons for baobab being easier than other livelihoods. Some spoke of ease of access to baobab as a resource, '*with baobab you can just go to the forest and collect five sacks*

[41] Source 2, 4, 18, 19
[42] Source 10
[43] Source 19
[44] Source 20
[45] Source 21

of baobab. It is easy'[46]. Others spoke of the speed in which you can earn money: '*Baobab is one of the most important sources of income as the money comes quickly compared to other things*'[47]. '*It is easier than working in the machamba, as you can just go and collect in the forest*'. Other collectors highlighted the relative simplicity of the baobab trade by contrasting it with the difficulties of growing and raising animals:

> *'To sell pigs and goats we don't have many customers. You need to wait to sell these things, sometimes a long time. But with malambe we know that with the season we can sell all the baobab to the company [BPM]'*[48].

> *'The money I earn from malambe is much more than from other activities I do, for example selling crops. When you sell crops and animals the prices are low when you sell a goat it is normally 1000, but if you sell five sacks of malambe you can earn 1,500 meticais. It can also be hard to sell a goat as the customers will complain and ask for a discount. When you sell malambe you don't have to negotiate prices or negotiate. It is easier and makes me happier'*[49].

Third, baobab is important to some collectors as it offers income that is not shared or controlled by their husbands or male heads of households. Three co-wives described to me how their husband governs over any income generated from the livestock they raise. '*Malambe is more important to us as the animals we keep do not belong to us, they belong to our husband…if I sell a goat then my husband decides how much money I can keep. Baobab is not the same. If we need some money baobab is a quick way to earn money that we can keep for household things [for ourselves]*'[50]. To this group of women, an advantage of the baobab trade to is that they get to make the decision about how the money is spent; they collect and earn money for themselves, not for their husband.

Fourth, many spoke of how baobab collection is more reliable than other sources of income and livelihood activities in the area[51]. Some spoke of how baobab is more important as their crops are prone to failure:

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[46] Source 6
[47] Source 5
[48] Source 5
[49] Source 13
[50] Source 24
[51] Source 10 - Sometimes we have problems with the rain, so it is better to sell baobab as we have a large family and if the rain fails then we will suffer. If you sell malambe you can buy food for everyone.

'Malambe [baobab] has been more important than the other ways [livelihoods] because I know I will always be able to sell baobab. Growing crops is the main other way for me but crops here depend on the rain and sometimes we produce very little. For this reason, malambe is better than the machamba [agriculture] as I know I can sell every year'[52].

The comparatively reliable nature of baobab during droughts was starkly illustrated by one collector's recent experiences, '*it is more important because of hunger. This year my sorghum failed. Without baobab my family would have hunger*'[53]. For others, baobab is also viewed as more reliable than livestock as a source of income:

'If I want to sell something and make some money the first thing I consider is malambe. Selling baobab is better than selling goats, sometimes goats die, or don't produce'[54].

Fifth, collectors suggest selling baobab is crucial as the resulting income allows them to avoid selling their crops. Multiple respondents discussed how they commonly experience droughts and hunger, and how the cash income from baobab allows them to reserve their crops in anticipation of lean times[55]. For example,

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[52] Source 3
[53] Source 17
[54] Source 25
[55] Source 10 - 'Selling Malambe is more important than my machamba. It is better to sell baobab than to sell crops because you will have nothing to eat. Sometimes we have problems with the rain, so it is better to sell baobab as we have a large family and if the rain fails, we will suffer'.

> *'You reduce the food you have if you sell your crops. This baobab is taken from the forest, so you don't take food from your family. It is important as we don't always have enough food here. In 2017 we were afraid we would not eat again. We suffered in 2017'*[56].

Moreover, interviewees reveal the specific needs collectors sought to meet by selling crops. One collector described how she can now afford household necessities—such as oil, salt and using the grinding mill—without selling her crops.[57] Whereas another spoke of how she no longer needs to sell her crops to be able to afford goats[58]. These answers reveal the lean nature of agriculture for women in the arid environment of Guro. Individuals commonly sell the food they produce to buy basic household necessities, services or livestock, fully knowing that they and their family may need that food in the future. As one collector succinctly stated, '*If you sell crops you have less to eat. I prefer not to sell my crops. We have hunger here*'[59]. It seems baobab helps people fulfil this preference. It allows individuals to forego an agonising trade-off between affording necessities and food they produce.

Of the three individuals that thought baobab was less important than all other, or most other, livelihoods, their justifications can be summarised as follows. One of the collectors had a substantial herd of cattle and baobab could never rival the income she receives from this. For the other two they provided similar answers, both suggesting that baobab is important to them but, of course, it could never be as or more important than agriculture, their main way of obtaining food and sustaining their families.

Changing perceptions of baobab, its markets, and impacts

Respondents that compared past and present gave a diverse set of answers. First, many expectedly spoke about the changing value of the fruit, and how baobab is worth significantly more money than in the past: '*People know that malambe now brings a lot of money*'. Similarly, '*if you collect a little baobab, you can earn a lot of money now. It is not the same as before*.' A small number of collectors talked about how the increasing cash value has made them view baobab as a 'good fruit' or as something positive for their family and community[60]. Moreover, one of the regulos effectively illustrated the changing value of baobab to the people of Guro,

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[56] Source 23
[57] Source 24
[58] Source 22
[59] Source 28
[60] People say that malambe is good, because when we sell, we get happy because of the money.

> *'Before children could play with the baobab, but now they are forbidden. If my children take baobab from the gotas [storage] I will give them a slap'*[61].

Collectors also associated selling baobab to BPM with recent changes in their lifestyles, ability to meet their needs, or their community's development. Foremost, many spoke of how selling baobab to BPM has allowed them to address daily challenges[62]. '*Now, people say that baobab helps us a lot. I have solved a lot of household problems. I've bought clothes for my kids, chickens, and goats. All because of baobab*'[63]. A common sentiment among collectors was that if you have the strength to collect baobab then you '*can have money for all the things you need for the house'*[64]. Or that '*with baobab we are able to have enough money to buy all the things we need. We are free of many worries with this money*'[65]. Thus, to some collectors, baobab seemingly generates adequate money to buy household essentials and cover most needs. Some respondents spoke more generally about how baobab helps to support their lives. **'***Now we see [baobab] as money, something that helps us to live'*[66]. One response takes this further,

> *'Things have changed, people collect lots of baobab now. People say it is a good because it gives us a source of life. It's a way to earn money where we can buy more than just small things***'[67].**

In addition, a particularly strongly stated answer illustrates what one collector thinks about the impact of BPM on her community's development and the potential impacts in the near future,

> *'People say if we had always sold baobab like this, then our community would be very developed…We would all have motorbikes. Our children walk a long way to school, if we had motorbikes then they would not have to walk….we would also open good businesses, selling food and cakes.*[68]*'*

Three interesting answers from collectors relate to their changing role in their household's finances. The first collector highlighted how she no longer has to ask her husband for small amounts of money: '*We do compare the past and the present [when she talks with her friends]. Baobab has become more important to us because the money that belongs to our husbands we cannot take. I had to ask for small*

[61] Source 28
[62] Source 26: 'People here usually say baobab is good and it helps us to grind maize and to buy nice clothes'.
[63] Source 9
[64] Source 18
[65] Source 24
[66] Source 28
[67] Source 3
[68] Source 16

amounts of money for essential things but with baobab…I have enough money…[69]'. Another collector described with apparent pride how she is,

> *'able to buy animals and cover household necessities, we are helping our husbands. it is important to help our husbands…it is important that I can feed him too. It makes me happy to help my husband. Family life is about helping each other'.*

Discussion and conclusion

This study suggests that the commercialisation of baobab has made it an important source of income for the women of Guro, Mozambique. The views of baobab collectors and other community members indicates that a profound transformation in baobab's perceived value has taken place: from a fruit that was seldom talked about—only for children or to be eaten in times of desperate hunger—to a '*life source*' and major source of income to communities.

Two events are evident which coincide with shifts in how baobab is perceived by local actors. First, the advent of the informal market and arrival of Malawian buyers clearly changed how baobab was viewed in Cabermunde and Nhamasonge. Baobab shifted from being a fruit that was left in the forest for the animals to a resource that could be traded for money. Although prices in the informal market were low, it provided the women of Guro a novel way to access cash and items in an area where livelihood opportunities are scarce. Consequently, the informal market for baobab was contemporary hailed as 'something good,' but it was only useful for small purchases or to swap for minor household items, such as plates. A second shift in local perceptions occurred when BPM and the formal market arrived, paying 3 – 5 times the rate of the Malawian buyers. Baobab became a resource that was worth significantly more money than it was before the informal market, and baobab started to be viewed as more than something good that can help buy small essential items. It became something that could free women of '*many worries*', and, as multiple collectors reported, selling baobab to BPM allows you to buy '*whatever you need*'. Thus, I argue that the changing importance of baobab to communities in Guro is closely linked to two stages of commercialisation in the value chain: the advent of the informal Malawian market followed by the arrival of BPM's formal market.

The price premium associated with BPM is an obvious factor explaining the increasing importance and status of baobab in the focal communities. It has evidently driven participation and motivated women to go out and collect baobab. For some collectors the price premiums paid by BPM clearly cross a

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[69] Source 24

threshold. That is, many collectors reported that they did not collect when they could only sell to the informal market but have been encouraged to collect by BPM's '*good prices*'.

Examining the motivations and uses of income revealed that collectors engage in the trade to satisfy a diverse array of desires and / or needs. Broadly speaking, the motivations of some women suggested they collect baobab so they can contribute their family's prosperity. Whereas others seemed primarily concerned with combating or guarding against hunger and poverty. The data on uses of income confirms these motivations: some woman reported buying significant quantities of food linking this explicitly to the objective of avoiding hunger, whereas others reportedly bought assets and luxury items. Thus, I conclude that the value of BPM's baobab trade is dynamic: it is different to different people, and it changes depending on the issues facing individuals and their families at the time. In communities where crop failures and hunger are apparently common, it is congruent that money will alternately be used to combat poverty and for development depending on the conditions.

Although the price premium associated with BPM and the associated increase in purchasing power are key drivers behind the changing value and perceived importance of baobab to local women, I found that there are several additional characteristics or factors that elevate the baobab trade's importance to local women.

Foremost, baobab collection is viewed by many as an easier way to earn money when compared to other available livelihood opportunities. A combination of reasons seemingly makes baobab easier than other livelihoods: the area's vast abundance of baobab trees, the lack of access restrictions (no one owns baobab trees), and the act of collection is less laborious than working the fields.

Second, some women view baobab as a more reliable livelihood than agriculture or raising livestock. Collectors expounded the relative consistency of baobab and how it fruits year after year, whereas other outputs (maize and livestock) are often jeopardised by the arid environment of Guro. Not that baobab is totally reliable, it is exposed to different sorts of risks and dynamics, but in an arid environment baobab is complementary to crops and livestock contributing to rural resilience.

Third, to other collectors the importance of baobab lies in a specific outcome: that it allows them to forgo selling their crops. Baobab seemingly provides enough cash income to buy household essentials that would normally be purchased using income from the sale of agricultural crops. The region's environmental conditions dictate that drought, crop failure, and hunger are commonplace. Therefore storing crops is clearly valued. The existence of the baobab trade in Guro makes it easier for participants to hold onto their crops and to store them for lean times, and the trade consequently takes on additional value.

Fourth, in the case of BPM, all the collectors are women and for some women baobab represents a source of income that their husbands do not control. A small group of women reported that the money they earn from baobab is apparently beyond the reach of their male heads of household. This is apparently not the case for their other income earning activities, such as selling livestock. It is unclear why men would exert control over other forms of female income but not income from baobab. It is potentially because baobab collection has traditionally and entirely been the domain of women, and a social norm exists which prevents men from getting involved. Moreover, the degree to which men control female income will likely vary from household to household. Additional research is required to understand the extent to which women control their earnings from the baobab trade in Guro and Tambara, and to understand the norms governing household finances and how they vary. Nevertheless, the limited data gathered by this study suggest that women mostly retain control of their income from baobab. I found no evidence of elite capture of baobab income.

Fifth, BPM's practices relative to the informal traders are important in motivating individuals to collect baobab. Collectors seemingly appreciate the reduced workload associated with collecting for BPM; and also, that BPM use scales to weigh instead of basscillas or buckets. Overall, there are clearly additional reasons beyond the price premium offered by BPM that make the formal baobab trade important to its collectors. What is striking is that an NTFP enterprise making modest payments to women are providing a supplementary source of income that is considered to be an easier and more reliable way to earn money than other livelihoods, which also allows them to retain their crops for leaner times, is less prone to capture by men, and improves upon the practices of an existing informal market.

Finally for two groups of collectors, the price premium is seemingly unimportant. Foremost, to the first group, what was centrally important to them about the baobab trade is simply that it provides a source of income when there are few other alternatives available to them. To this group, the price premium paid by BPM often went unmentioned. Several of them spoke of falling back on selling baobab when they lost their household breadwinner (through divorce or death) and expressed that they would have suffered without the trade. This group seem to be satisfied and appreciative that they can trade baobab in their times of need, and that, to them, was the most important characteristic of the trade. Another group which suggests that the price premium of baobab is relatively unimportant suggested they prefer the informal Malawian buyers over BPM, citing that the flexibility and comparatively consistent presence of the informal buyers is preferably to BPM's price premiums. In short, although BPM's price premiums have changed the value and importance of the trade to many women in Nhamasonge and Cabermunde, a major part of baobab's perceived importance is not in the price premium, but that it provides an accessible alternative income source where there are no others.

7. The entrepreneurial process in conservation and development contexts: toward a conservation and development opportunity nexus

This chapter explores the entrepreneurial process in the context of the conservation and development sector in Mozambique. It broadly aims to unpack Micaia's entrepreneurial process to understand the skills, traits, and processes the focal entrepreneurs have used to identify and exploit opportunities to create social and environmental value. The chapter focuses on how entrepreneurs use their attributes to navigate the challenging entrepreneurial environment associated with both Mozambique and the conservation and development sector. This chapter has the following overarching research question:

> How are entrepreneurial processes underlying the creation of market-based instruments for conservation and development in Mozambique structured?

And the following sub questions,

a. What traits and experiences contributed to the entrepreneurs' ability to identify their opportunities and take the decision to create MBIs for conservation and development
b. What skills have the focal entrepreneurs relied on to create and manage successful MBIs for conservation and development
c. How have these traits, experiences and skills helped entrepreneurs to navigate institutional barriers to entrepreneurship identified in question 2?
d. Which entrepreneurial theory, or mix of theories, does the process represent?

The chapter uses the lenses of the individual-opportunity nexus combined with entrepreneurial bricolage to unpack Micaia's entrepreneurial process. I first explore some of the personal traits and experiences that have motivated our entrepreneurs and provided an advantage when they started their organisations. Second, I examine how a collaboration between our focal entrepreneurs and another commercial entrepreneur resulted in the creation of the Mozambique Honey Company, detailing positive and negative outcomes of the collaboration. Third, I investigate our entrepreneurs' resource acquisition process, a key step in the entrepreneurial process, exploring their perception of the wider entrepreneurial environment in Mozambique, the nature of financial limitations affecting them, and detail how they raised the necessary resources from development donors to grow their businesses. Fourth, I explore how our entrepreneurs have responded to financial limitations by engaging in an alternative strategy to resource seeking, entrepreneurial bricolage. I examine entrepreneurial bricolage across four domains: regulations, labour, skills, customers and markets, highlighting specific challenges in these domains and how they have been overcome. Finally, this

chapter ends with a discussion of entrepreneurial process in the conservation and development contexts. Assuming that Andrew and Milagre's challenges are common across such contexts, I attempt to make a contribution by recommending some potential actions to stimulate entrepreneurship within the sector.

Key traits and experiences: the origins of Micaia

Asking Andrew and Milagre about the motivations and skills they required or relied on to start Micaia suggests a broad range of experiences and traits were important to their success. Both suggest that their previous career and industry experience has been crucial, providing them with the knowledge required to navigate the conservation and development sector and to inform their approach. For example, Andrew had a significant amount of start-up experience, having previously worked for an organisation focused on setting up new NGOs, providing him with '*… an advantage having experience setting-up organisations…I didn't have experience setting up businesses, but I had an idea how you build organisations, how to structure things*[1]'. Milagre possessed extensive experience of conservation and development sector in Africa, having occupied high profile roles for the Mozambique government, United Nations Development Programme and the Ford Foundation[2]. A key benefit of their career experience, as well as the sector knowledge both developed, was their vast social networks. These networks apparently connected them to conservation and development professionals, academics, government employees and diplomats, which Andrew and Milagre suggest they have used repeatedly over the lifespan of their businesses. For example, to provide information about funding opportunities, to provide technical expertise or to connect them to prospective employees and potential project partners[3].

Andrew and Milagre point to two key factors that ultimately motivated them to start their own organisation. First, they were personally connected to Central Mozambique and had identified an opportunity. Milagre suggests establishing in Central Mozambique was highly appealing to her as she knew the area having lived and previously worked there. Before starting Micaia she identified the area as having a lack of active conservation and development organisations. Second, they were both experiencing disillusionment with the sector. Andrew and Milagre had become frustrated with the lack of impact of the sector in general, and Andrew communicated wanting more control over how they go about project implementation. '*The development sector is broken, it's inefficient, tons of money is spent*

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[1]Source 2
[2] https://micaia.org/about-us/our-people/
[3] Source 2

with little reaching the people it should…we wanted more control over how we did things, make sure the money went where it needed to… we hoped to have more of an impact'[4].

An interesting dimension of Andrew and Milagre's traits or skills relates to their perception of opportunity costs. In one of my first encounters with Andrew and Milagre they indicated that the opportunity cost starting the businesses has been significant to them. This applies on two levels. First, they have foregone roles and opportunities in other organisations which would have afforded them a higher standard of living, e.g., salaried work with more leisure time. The second relates to the way they have structured their organisation to maximise benefits to rural people, '*we didn't have to run the businesses this way. Milagre and I could have made much more money from the businesses and lived much more comfortably…but we wanted to maximise the benefit to producers*'[5].

Combined with their important career experience and willingness to shoulder opportunity costs, I observed that Andrew and Milagre possess several general traits that correlate positively with entrepreneurship which have potentially aided them in establishing their organisations. Both are highly educated with advanced degrees. Both have relatively high social status, demonstrated by their high-profile professional roles and reinforced by their current position as the heads their own organisations. Finally, when they started Micaia they would both have been in their early 40s, an age associated with entrepreneurship as it is when people have accumulated significant experience and transmits credibility to others, i.e., people that want to invest in an enterprise.

The creation of MHC: collaborating with private sector entrepreneurs to transform honey markets in Mozambique

A key component of unpacking entrepreneurship relates to how opportunities come to exist, how entrepreneurs recognise opportunities and the factors that influence their decision to exploit opportunities. The founding of the Mozambique Honey Company provides an interesting example of how social enterprises and new markets can be created through key collaborations with private sector/commercial entrepreneurs. Andrew suggests that the connection to Andre Vonk, a private sector entrepreneur involved in commodity trade, was a crucial driver for the creation of MHC.

> *'[Andre] Vonk understood that Mozambique loves honey. He saw possibilities, he did his research looking into markets and he knew there needed to be a step change. He*

[4] Source 2
[5] Source 2

came at it not from the point of let's do another honey project, he wanted to break into the formal market. He understood critical facts of getting into the formal trade, that you needed consistency and volume to get into the supermarkets. For us it was appealing as he was willing to start the business with Micaia and share it with communities.

Andrew and Milagre therefore collaborated with a private sector entrepreneur that had a long-term vision to transform the honey industry in Mozambique and MHC, '*from informal, local, adulterated to a high-quality export scale leading sector in Africa*'[6]. Vonk had money to invest, but '*he knew that transforming the honey sector was a massive project that wouldn't be done on his working capital*'[7]. Andrew suggests this is where Vonk saw value in collaborating with Micaia. He was willing to give a share of his vision to Micaia and rural beekeepers.

There was, however, no way he [Vonk] could fund capacity building in the value chain [training beekeepers and equipment]. He identified us as being good at raising money and offered us a big share of the business to take the risk in raising the money. He needed a subsidy for the value chain but at no point did he ask to subsidise the operating cost of the business. For that we got a 50% stake in the company. It was a massive incentive for us. We then went to Comic Relief and raised £300,000 to develop the value chain'[8].

The relationship between Vonk and Micaia was therefore mutually beneficial. This however extended beyond their financial compatibility. As they collaboratively developed their honey business MHC, Andrew and Milagre learned entrepreneurial skills from Andre. Reflecting on his friendship with Andre, Andrew recalled how they would frequently meet and discuss ideas for new businesses.

'We had breakfast with Andre quite often where we would talk about everything, just bounce ideas off each other….he was an extraordinary character and a big part of him is committed to empowering suppliers which I respected. I learnt a lot from him. He taught me about buying and selling, negotiating. He used to say that he could sell anything. Rotten maize, there was a market for that. There is a market for

[6] Source 2
[7] Source 2
[8] Source 2

> *everything, all you need to do is understand the market and pitch accordingly. It was good to work with him'*[9].

Despite this mutually beneficial and personal relationship things between them ended up being deeply troubled. AgDevCo, a specialist investor in African Agribusiness, had invested in MHC for $250,000 and required Andre to surrender his control of the business for things to move forward. Andrew and Milagre did not elaborate on the specific reasons investors wanted Vonk removed, only referring to his '*unscrupulous financial practices'*[10]. The outcome was that Micaia took over the business from Vonk with backing from investors.

> *'I personally had to make a choice. In the end I brokered a deal between investors that allowed Andre to hold a percentage of the company. It was extremely tough. AgDevCo wrote off 200,000 USD of investment and sold us the company for 50,000 USD…Micaia took on the debt and it was a huge turn around for us. MHC was on the verge of closure, and I was given three months to put together a rescue plan. We changed the locks, had to sack everyone, we closed down 40% of the market, at least 40%. Andre never went back in. The investors said we had a choice. That they would back us [Micaia] on the take over but we had to sort it out. Milagre and I discussed it and we decided we had put too much into this, the business had so much potential, so we had to do it.*

Despite the stressfulness of this situation, Andrew and Milagre are both glad they persevered and are proud of what they have achieve with MHC, having successfully rebuilt the organisation which now provides additional income to approximately 1000 rural beekeepers[11]. 'W*e've achieved a hell of a lot in these years. We have broken into ShopRite for god's sake. The honey is on sale all over the country, we've won awards, and no one has managed to do that before in Mozambique, without Andre's initial investment it wouldn't have been possible'*[12].

I asked Andrew and Milagre if they have had any other collaborations like their one with Andre. '*No, nothing like that, we get interest but no one that has a vision and is willing to put up capital. There is lots of money in Mozambique, I don't know why people don't put their money in*'.

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[9] Source 2
[10] Source 2
[11] Honey buying data 2021
[12] Source 2

Financial limitations, resource seeking and the role of donors in conservation enterprise development

As discussed in chapter 3, Mozambique is reputedly a hostile entrepreneurial environment characterised by restricted access to financial resources. To better understand entrepreneurial agency in this context, the following section asks, have our case study entrepreneurs faced financial resource limitations, and how have they responded to these limitations? Using interviews with the Andrew and Milagre, the following section explores the nature of the financial limitations faced by Micaia, and the extent to which our entrepreneurs have overcome these limitations, specifically through resource seeking.

Andrew and Milagre confirm that Mozambique is a hostile environment for formal entrepreneurs. Their assessment of the general situation in Mozambique is that it is '*absolutely not conducive to successful small businesses'*[13]. They indicate that they must constantly contend with predatory actors and highlight that the banking sector and securing investment as a key challenge. Specifically, it is difficult for small-scale entrepreneurs in Mozambique to obtain a loan from a bank. Even if they are successful, the interest rates are unfavourable.

> *'It is not the regulatory environment but the general situation and systems. Nothing helps, it is just that we have worked with it so long that we have come to know how to work with it and we can get through it relatively smoothly. But the situation in Mozambique is hostile. You always feel like you are in a hostile environment where people are looking to bring you down and make money off you. And that is not a helpful environment to be in. The banking system is difficult. Everything from high-cost loans and the general modus operandi, which is to make the most money off you as possible. In Mozambique, you have a situation whereby if you went to the bank for a loan, you would probably get your loan refused or it would be at 27%'.*

They also confirm that they have encountered financial limitations at several points when trying to establish and scale their companies. For example, they have been unable to hire key staff when they wanted: '***we have struggled with MHC, we tried to bring in an external manager in for MHC, but we just couldn't afford him in the end***'. They have been unable to cover MHC's overheads and consequently scaled back the organisation: '***The company [MHC] always had a problem with that and the only way forward was to trim it to the bone'***. A lack of profits from MHC in its early years meant that Andrew

[13] Source 1

waived paying himself a salary for managing the company until recently: '*don't forget that MHC didn't pay for any of my time until last year*'. Thus, covering MHC's management costs and overheads has been a significant struggle for the company and minimising these costs—e.g., by having Andrew's salary paid from an alternative source—has been key to the business' survival during lean times. Andrew identifies the inability to pay overheads as a key reason businesses fail to achieve scale,

> *'In short, the company has always struggled to pay for its management. We were able to do it as I was paid by other sources and was able to subsidise the setting up of the honey business. So, and this is why most small companies fail to get to any scale, as going to scale is bloody difficult and you have to put the money into scaling the operation and building your supply chain and building your sales that can support a bigger overhead. That is why things usually stay as owner / operator set ups. As soon as you start investing your capital in taking things to scale, bringing in new staff then you don't have the money to pay yourself, so owner/operators tend to struggle on with low levels of return'.*

Our entrepreneurs reveal that they have engaged in extensive resource seeking to overcome the financial resource limitations faced by Micaia. However, due to the hostile environment toward formal entrepreneurship in Mozambique, they have had to be creative with their resource seeking, leveraging their connections and experience of the development sector to take advantage of diverse funding opportunities offered by donors.

> *'We have been able to be creative because of our background and connections. Not because we are rich or we know rich people. We know where to look. There are so many schemes in Mozambique be it the Germans or Danes [development organisations] offering these kinds of business support programmes'*

Andrew and Milagre underscore that their experience in the philanthropy and development sectors coupled with the mission to establish inclusive businesses perfectly aligned with donor expectations and objectives. They suggest this was a key factor involved in effectively channelling donor funds toward their enterprises.

> *'I just happened to be in that place at that time where I had a bit of experience in the philanthropy sector and the nature of the experience was appealing to the*

AgDevCos of the world...Although we were small scale, our story was one that appealed to DFID, so context is everything, absolutely everything'[14]

Despite Micaia's successful fundraising, Andrew suggests that many entrepreneurs and businesses in Mozambique are unable to recognise funding opportunities from development organisations: '*a lot of NGOs, and potentially tour businesses, do not look creatively at the opportunities to finance their operations*'. He suggests that development funding for businesses has changed in Mozambique, toward funding social enterprises and that the change has not been widely detected. Andrew evidences this with Andre Vonk and his struggled or inability to take advantage of this switch social enterprise funding.

'As Andre would always say he's made a lot and lost a lot. But that made it difficult for him to play an entrepreneurial role in the new hybrid funding environment that was really hitting Mozambique at that time. There is a different type of entrepreneurship needed there. So, one of the things I keep talking about is the failure of civil society to realise that the available funding has changed. You can go out there and get a lot of low-cost investment if you talk to people in the a different way, and he realised that I knew that world and it was a world that he couldn't interact with. And that area really interests me'[15]

Andrew indicates that it is primarily NGOs that have access to funding to establish social and environmental, but that NGOs often lack the entrepreneurial skills or commitment required to make them successful under difficult conditions. '*The difference between entrepreneurship in the NGO and business settings is that you don't live or die by your ability to make money. And that is one of the things that frustrates me as a lot of the organizations that have got involved in the enterprise development space in Africa…they are entirely subsidised. And when it goes wrong, they write a report that said it went wrong for this reason and the next, and then they move on*'[16].The quotes above seemingly identify two important mismatches between the donor environment in Mozambique and what it takes to catalyse entrepreneurship. Commercial entrepreneurs like Andre Vonk, with track records of operating successful businesses in hostile environments, are unable to navigate or appeal to international donors for investment, even if they are interested in starting a business with social and environmental goals. NGOs, on the other hand, can appeal to international donors and accessing investment, but

[14] Source 1
[15] Source 2
[16] Source2

because donors completely subsidise these enterprises and NGOs staff are not dependent on these businesses for their own livelihoods means that their success is limited.

Another key factor that helped Micaia deal with financial limitations relates to the social and environmental missions attached to the businesses. As indicated above, the social mission of Micaia to maximise value to producers was important to align the organisation with donor objectives and access funding. What is potentially important is that the funding accesses was on highly favourable terms compared to other forms of investment available in Mozambique.

> *'We, our world view on the other hand, our purpose, we have gone into this and tried to use these business opportunities to create as much value for as many people as possible. This has allowed us to get sources of investment that are not available to those that entirely self-focused. And it has allowed us to run longer and absorb more opportunity costs, run for longer without getting paid, to go and renegotiate loans with investors that lent us money because of the social purpose of the organisation. They are therefore more open to renegotiate terms. If it was a normal loan from the bank, then we wouldn't have been able to renegotiate more favourable terms'*[17].

A specific example of the favourable funding conditions Micaia have experienced due to their social and environmental mission relates to how one investor, AgDevCO, wrote off a significant debt owed by MHC when our entrepreneurs took over ownership.

> *'We went in 2013 /14, we agreed with AgDevCo that we wouldn't charge any service charge as we got an extremely good deal. The exit strategy they developed with us was in the end extremely beneficial they wrote off 200,000 and converted it to equity, wrote it off, sold the business revalued the business in a way that really worked for us'*[18].

Another key financial limitation for Micaia and its companies has been working capital. Working capital relates to the amount of capital invested in a business's day-to-day operating cycle. Andrew suggests, '*The thing that stops people [businesses/enterprises] growing is working capital. It was a big problem for us in the early days'*.[19] He confirms that a lack of working capital inhibited Micaia in a number of ways; for example, *at certain point it gets too late in the season to keep on buying so that*

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[17] Source 1
[18] Source 2
[19] Source 1

comes back to a lack of working capital, it slows down the buying process'[20]. However, Micaia overcame this limitation when they secured a $50,000 working capital grant from one of their donors, Global Development Support (GDS). Andrew suggests this was critical to allowing the businesses to grow. Especially MHC due to its higher overheads when compared to BPM.

> *'It [the working capital fund] was critical. Honey is an expensive business to get into unlike baobab. With baobab, we got started for 10,000 [USD]. In honey, you are buying an expensive raw material, putting it in expensive packaging, paying high distribution costs and having to sell it a very low price in order to break into the market'*[21]

It is important to note that Andrew and Milagre have an extremely strong relationship with GDS. They characterise the funder as the most trusting with the lowest accountability burden, i.e., GDS require less detailed (but still thorough) monitoring and reporting on how their money has been spent. Andrew expands on the nature of the relationship, '*GDS and Micaia are engaged in mutual relationship where they feel an obligation to contribute to each other's learning.....we interpret the accountability to the donor that means we go more to the spirit of the accountability relationship because we see a shared purpose some common ground*'[22]. The strength of this relationship seemingly manifests as GDS offering Micaia more flexible or unrestricted financial resources when compared to other donors. The nature or strength of the NGO-donor relationship is potentially key to entrepreneurs gaining access to flexible finance, which, in turn, can be used to fund working capital, a critical barrier to enterprise growth and development in conservation and development.

Andrew however underscores that it is not normal for conservation and development donors to provide this type of funding,

> *'The donors don't normally dole out working capital, so who is going to do that? The donors come and spend a vast quantity of money on hives for people that for the most part don't want to keep bees but aren't going to look a gift horse in the mouth. They put a certain amount of money into training, but it is usually a very basic level and is about production. They don't pay anything into the market'*[23]

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[20] Source 3
[21] Source 1
[22] Source 4
[23] Source 2

Micaia's experience is that donors are happy to distribute money toward social enterprises for measurable outputs, such as beehive distributions and beekeeper training, yet they are reluctant to fund critical aspects of enterprise development, such as working capital. This suggests that although donors have shifted towards funding entrepreneurial initiatives for conservation and development in Mozambique, they are out touch with the type of funding entrepreneurs need.

Andrew suggests that NGOs and entrepreneurs are, overall, failing to take advantage of the shift in the donor environment toward businesses linked to rural development in central Mozambique. He laments the lack of initiative by other organisations and suggests that other factors associated with the political environment, such as corruption, potentially prevent people from taking the risk of starting or growing their own social enterprises in Mozambique.

> *'But why aren't there more people doing this sort of thing. There are all sorts of organisations out there that are meant to trying to fund business solutions to poverty. Why are we still the only ones when DFID[24] and World Bank come to Chimoio, why are we still the only ones they are visiting? We have had certain advantages, but there is nothing stopping other people doing the same. I think we've talked about the issues potentially stopping people. If you are of Chimoio you are known by the system, then when you try to scale up then you run into problems'*[25]

Finally, Andrew indicates that Micaia's successful creation of markets for honey and baobab has cemented their standing with donors, making them attractive recipients of funds. '*They [donor organisations] get it, the honey company has been critical in driving beekeeping toward a more commercial outlook in central Mozambique. The reason donors like AFD and Mozbio are putting the money in is that there is now a market'*. Andrew suggests that a lack of a credible company with market access is a significant issue with other donor-led, beekeeping initiatives intended to provide alternative livelihoods. '*If you go elsewhere in the country there are countless honey projects but there is no investment in establishing a company or breaking into the market. If there is no company, then who the hell is going to buy the stuff'*[26].

This section helps to understand how successful entrepreneurs operating in conservation and development contexts can fund their initiatives, and the difficulties they face. I confirm that our entrepreneurs have faced financial limitations (a struggle to pay overheads) and a hostile environment (unfriendly economic and political environment). Their response was to be creative with where they

[24] UK Department for International Development
[25] Source 1
[26] Source 4

looked for investment to grow their enterprises; leveraging their significant connections and prior knowledge of the development sector to take advantage of diverse opportunities from a changing international donor environment. Andrew and Milagre's success in creating markets where other beekeeping initiatives have failed has seemingly cemented Micaia as a donor favourite in Central Mozambique. To date, Micaia have procured extensive funding from numerous high-profile donors/development organisations working in Mozambique (e.g., DFID, WB, GIZ, GDS, AFD), and have used this funding to support enterprise development in various ways. Nevertheless, donor investment has not covered all the costs of running Micaia and its associated businesses. The next section explores resource limitations faced by the organisation.

Entrepreneurial responses to resource limitations

As discussed in the previous section, our conservation and development entrepreneurs have been highly effective financial resource seekers in an environment hostile to entrepreneurship. Despite this effectiveness, Micaia have nevertheless faced periodic resource limitations. Our entrepreneurs suggest they have had to make do with limited resources, especially in the early phases of their businesses.

> *'Beyond that, it has been about being creative with the resources you have. Family businesses, using people that have resources, such as factories that you can operate from. It [entrepreneurship] is about scraping around until you can get things off the ground'*[27]

I further explore entrepreneurship in the context of conservation and development, I unpack Andrew and Milagre's responses to resource shortfalls across four domains: labour, regulations, skills, and markets.

Labour

A substantial area of experimentation and making do for Micaia and its enterprises has been in how it utilises available labour. As Micaia has grown, the organisation has cyclically faced financial limitations manifesting in shortages of the required labour. Consequently, our entrepreneurs have continually experimented and restructured its available labour resources.

A key example of this relates to BPM's baobab buying and processing network, and how this has evolved over time. There are multiple, discernible phases to this evolution, representing annual

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[27] Source 1

adaptations to how BPM uses labour. The first phase is when BPM initially entered the baobab market as a buyer in 2015. They bought their baobab as pulp, utilising the labour of the collectors to partially process the fruit, i.e., fruit that had been shelled and the pulp bagged by the baobab collectors themselves. The results of this required BPM to adapt their processing strategy and, in turn, experiment how they used labour.

> *'When we started to buy we were buying pulp, they [baobab collectors] were cracking themselves. But the quality was terrible. There was sand, needles, stones, cups, plates in the baobab, they would forget them in the sacks. Maybe a child was playing and the adult wouldn't see it. When we see these things it is no longer organic and we lost most of the pulp. Because of this we had to change.*[28]

The second phase changed how BPM processed their baobab. BPM established a factory site in the nearby town of Guro and started to buy whole baobab from the collectors. BPM employed labourers to process the baobab into pulp before it was transported to Chimoio for additional processing into powder. In this phase BPM took on more costs by taking on more of the processing tasks. This was to improve quality of the product and increase its saleability and compliance with organic standards. However, the additional processing costs were reportedly substantial. Moreover, wages were now being paid to inhabitants of a large town, which conflicted with Micaia's mission to maximise value for rural people. This prompted another shift in how BPM uses labour. The third phase involved Micaia establishing mobile processing centres within the communities they were buying the fruit. The crux of these centres was to provide a more controlled environment where collectors could crack their own fruit while allowing BPM staff to monitor the processing. The centres permitted BPM staff to maintain several standards during processing. For example, '*With the cracking centres, we have rules. Don't bring babies, you must wash, you must not wear perfume. We built toilets for hygiene'*[29]. To supervise the processing, Micaia employed a small network of jovens (young men) to supervise the training. This phase or innovation was regarded as highly successful both by communities due to volume of baobab bought at increased prices but by also to BPM due to the jump in quality and increased efficiency of processing. Nevertheless, this evolution in how BPM utilised available labour came with challenges. Micaia staff reported that the permanent presence of BPM's network of young men within rural communities, although hugely successful in terms of baobab yield and quality, was disruptive to the communities themselves'.

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[28] Source 5
[29] Source 5

'So things went smoothly when we had a load of young men that were based in the villages and doing the activities [weighing and supervising processing]. But there was also the issue of woman complaining about change, lack of respect. It really led to a lot of change in Lampa. We were chased from our campsite in Lampa. We were given a place to camp in the community but then they gave us a place way out in the bush as they did not want the men to be in the village'[30].

These issues combined with a desire to cut costs and direct responsibilities to the rural communities seemingly led to another pivot in BPM's buying processes and how it uses labour. '*Because of these issues [with the network of jovens] we decided that the lead collectors could do more and that we would only hire a few guys to supervise. We asked the question, why are we paying people to live in the villages when we can just pay one or two and they [lead collectors] can do it?'*[31] Thus, this shifted responsibilities of the jovens to key community members. The lead collectors took on the roles of relaying messages from BPM to collectors, distributing sacks, weighing baobab, and recording weights, reporting these quantities to BPM, and organising collectors to transport their baobab to collection centres to be processed. Concomitantly, BPM established more permanent processing stations in several key communities, such as Nhamasonge, which function as key hubs for BPM. At these permanent processing stations women are paid to process baobab, '*we leave a lot of money in the field now as we pay the women to crack. We are paying the women 4 meticais per kilo to crack, and we buy for 6 meticais per kilo*'.[32] Thus, women in some key communities are being paid for their baobab and are given the opportunity to earn additional money through processing. Many women I spoke to in Nhamasonge were happy with this latest pivot to the permanent processing centres and the opportunity to earn additional income[33]. When I visited other communities without processing centres, people protested and appealed for BPM to locate a cracking centre in their community too. They expressed the desire to be able to sell their baobab, but also be paid for its processing[34].

The transfer to using lead collectors and permanent processing centres has however created tensions between some communities and BPM. For example, the community of Demaufe apparently feel overlooked in BPM's pivot to permanent processing centres. As a BPM field technician explained,

'Demaufe people are complaining about not having a cracking centre there. We put a cracking centre in Nhamasonge and Tgoma even though those places do not

[30] Source 6
[31] Source 6
[32] Source 5
[33] Source 7
[34] Source 8

> *provide us with a lot [of baobab]. But the issue is hygiene, that is why we didn't select those communities. When the women are cracking, they sometimes come with the dirty clothes and they need to take a bath but water is a problem in those communities. So, we tried to select the communities that had access to the boreholes and water so they can take baths'*[35].

The switch away from the network of jovens has also created tension between BPM and people that previously acted as guides to the jovens. A senior field officer explained that '*in Demaufe, last year, informal traders did not come [to buy baobab] but we also had a guide. He would facilitate and help the young men / show them around. When we switched to the lead collectors he was left out, there was no job for him. He then started liaising with the informal collectors and buying baobab himself. He really got his hands on a lot of baobab*'.[36] It seems that the guide, disgruntled with being cut out of his role with BPM, used his knowledge of the baobab trade to pivot into becoming a broker and connecting his community to informal traders. He seized an entrepreneurial opportunity.

Regulations

Using two examples of Micaia's practice, I explore Micaia's interactions with governance structures. I ask if governance structures in Mozambique have been restrictive for Micaia's enterprises and if Micaia have bypassed regulations.

Foremost, Andrew suggests that the regulatory environment in Mozambique has not been restrictive to Micaia and their various activities, including the enterprises. This is unexpected considering their assessment of the Mozambique as hostile environment toward entrepreneurship and the concept of entrepreneurial bricolage.

> *'I don't feel that the regulatory environment has really hindered us. If I think of the way in which [BPM manager] works with the Ministry of Agriculture, then it is overall quite efficient and they don't give us much trouble'*[37]

Unpacking this further, the governance framework surrounding baobab harvesting in Mozambique is simple. At a national level, law stipulates that baobab buyers should pay a levy, calculated by weight, on the baobab they extract from the relevant jurisdiction. Tax should be paid at the local Posto de Administritivo (administrative post) where transporters are granted approval permits to transport the

[35] Source 5
[36] Source 6
[37] Source 1

fruit out of the area. Permits are issued which can be shown to police monitoring roads for illegal transport of goods.[38]

At the community level, interviews with Baobab collectors and local leadership reveal that there are few rules governing baobab harvesting or selling.

> *'There are no rules about collecting baobab, if you find it you can take it. You can collect where you like, but you may not camp and collect in other communities. You are not allowed to climb trees; you must wait until the fruit falls. If you find a pile in the forest you should leave it…but you can take it if it has been left for many days. The regulo sets these rules'*[39]

When people talked about baobab governance, they mainly referred to social norms intended to keep people safe while collecting (e.g., not to climb trees), or rules to avoid conflict with other collectors or communities. Some spoke of the rules that BPM ask collectors to uphold to increase the quality of the fruit. For example, '*We do have some rules from BPM…But the community, we don't have any rules. For BPM, you may only collect the big baobab and we must leave the small fruits for the animals'*[40]. One neighbourhood chief emphasised the absence of local governance around baobab use,

> *'Baobab is owned by God. We did not plant them so we cannot own them. Anyone can collect the baobab from any tree'*[41].

Andrew confirms that local level governance is '*light touch*', but he also explains that the higher-level governance of baobab has been historically minimal, and an informal or corrupt system of bribes and pay backs operates in its place[42].

> *The Mozambique authorities have been really hands off [with Baobab governance]. If you are looking at governance, there is the traditional system which is really light touch….But then of course, when we got involved [in baobab] it was clear that there was this light local governance and almost no official oversight. The presence of the government is non-existent. What we picked up on quickly is that there is corruption as a system of governance. There is also corruption governance related to the way in which traders evade normal procedures, bribery, not paying their agriculture taxes*

[38] Source 10
[39] Source 7
[40] Source 8
[41] Source 9 Informal conversation, chef de bairro, Nhamasonge, November 2019
[42] Source 10

and not paying across the borders, crossing the border without paperwork. A lot of baobab just disappears goes on a truck and isn't inspected by anyone and if you are stopped then you just pay a bribe. There is [reputedly] a case study of a Malawian crossing the border and detailing how much they had to pay in bribes, and it is quite a lot of money'[43]

Thus, it seems that the government actors had little interest in enforcing official regulations surrounding baobab, and that the official framework for taxing and monitoring baobab extraction was effectively dormant and unused. Those in charge of baobab governance (traders, border officials, police, department of agriculture) are not motivated to bring its constituent norms to life through their everyday practice. The alternative, informal system that governs baobab, consisting of bribes and kickbacks, is clearly advantageous for those in the value chain; traders can avoid government taxes and make border crossings largely unimpeded, while officials take brides to supplement their incomes. This informal system also involves '*kickbacks for the chiefs'* at the local level, and ultimately '*next to no tax is being paid on baobab outside BPM'*[44]. Baobab offers a clear example of how local actors deriving little benefit from formal governance structures bypass them and install alternative informal systems to lower costs (taxes) and increase local benefits (bribes).

When Micaia started trading baobab they therefore had two main options with regards to governance. Sidestep official regulations and participate in the informal system of bribes or pay the appropriate taxes through the dormant formal system. BPM chose the latter with important follow-on consequences for interactions with local government (Box 1). In the process, Andrew and Milagre have seemingly brought a neglected regulatory system to the fore.

'So we have come in and that informal system based on loosely corruption, and we opened the door for the formal system for baobab which wasn't being used. We've acknowledged the existence of certain regulatory norms and procedures that baobab should be part of, and we have implemented them…but the drive to implement has come from us, not the government. Maybe it was a bit of both, once they knew that we would pay taxes of course the government was happy to accept…. what to bear in mind is that we shone a light on existing regulations related to baobab. A lot of the literature talks about how NGOs try to impose their own governance regimes, a set of guidelines at the local level. And we've done that to a certain extent but that is

[43] Source 10
[44] Source 10

limited to do with quality control, none of it undermines the traditional governance and control over the resource'[45].

Micaia's compliance with official governance framework over the informal standard practice is motivated by Micaia's social mission, a desire to shield themselves from involvement in a corrupt system. '*We have been very clear that we do not want to join the local system of reward for instance, and you can get so bogged down in it. The typical workshop situation when people just turn up and take the per diems*'[46].

Box 1. Example of BPM approach to governance and the consequences for local government

> *Through the campaign, there were some memorable moments, not least of which was the mobilization by the women of Tambara District against the local government officer in Lampa, who was trying to extract a completely illegal and unreasonable sack 'fee' from BPM – who temporarily stopped buying as a result. When BPM refused to pay the fee and announced that it would stop buying fruit with immediate effect (which the company sought more information from higher levels of government), word soon spread through the villages affected. The Baobab Collectors Association representatives communicated via text message and organized a march on the local government office for the next day. In the meantime, the collector's representative in Lampa staged in effect a 'sit-in' in the office, demanding that the fee be removed. In the end, the actions of the women were not necessary because BPM found that no payments at all should be made at local level. The local government officer backed down (we understand that she was chastised by more senior officials), and the trade went on. There is absolutely no doubt that without the work in recent years to build confidence and understanding of the value chain, and without the Association structure, the women's activism would not have happened.*[47]

It must be noted that the official regulatory system is 'light touch' and seems surprisingly un-bureaucratic. This certainly makes it easier to participate if it is not associated with significant added costs / administrative burden. Moreover, interviews suggest that Micaia's participation in the formal

[45] Source 10
[46] Source 11
[47] Andrew Kingman, report to funder (2021)

system, specifically that their position as taxpayers offers another advantage. During attempts to secure baobab suppliers, BPM highlight to collectors that the company pays taxes whereas other buyers do not[48].This is intended to win over sellers and stop them selling to informal markets. Paying taxes becomes a unique selling point.

Micaia's '*playing it straight*' and adherence to regulations has not afforded complete protection from corrupt actors and their informal systems. Andrew and Milagre report problems they were having with one Chef de Localdade (local governor). The quote below demonstrates how entrepreneurs playing it straight must sidestep actors committed to informal systems, but also how those that perpetuate informal regulation resist attempts at formalisation.

> *'Now this year we are struggling a little bit in Minga. The chef de localdade is challenging. She does not want to sign off on stuff, she wants to verify a lot of things herself, the weights, so it is causing delays. Minga is difficult as essentially, we didn't play the game… In certain districts and postos you will find good people that are more or less willing to accept the legal way of doing things. Whereas in other areas like Minga you have people that are committed to the dodgy payback systems'*[49]

By seeking to follow the written rules they have seemingly resurrected a dormant, official baobab governance system for those that should perpetuate it through their everyday practice (e.g., police, local government). Embracing the formal governance has advantages for our entrepreneurs. We reveal that most actors in the value chain accept BPM's position and accept the '*legal way of doing things'*. Yet, some actors still try to exert pressure on BPM and rent seek, delaying the baobab buying process. Thus, it is the informal systems that seemingly hamper the efforts of our entrepreneurs, not the formal system.

A second example of how entrepreneurs deal with inadequacies in regulations relates to how Micaia navigate informal governance and norms in Chimanimani. Here local elites put pressure on Micaia and MHC, not trying to elicit bribes like the previous example but attempting to shape Micaia's interventions in unwanted ways. Specifically, government actors at various levels try to steer NGO activities toward communities loyal to the governing party in Mozambique, Frelimo. Although this does not relate to any formal or written down regulations, our research suggests that a strong set of informal practices are steering donor and economic activity in Mozambique.

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[48] 'He took the regulos to Ndzou camp and pleaded with the regulos to discourage them selling to Malawians. He said please don't sell to them, we are Mozambicans we pay taxes in Mozambique to local government. If you sell to Malawians, they leave you nothing, just plastic that will last you just a year'. Source 5
[49] Source 10

Interviews, observations and my own experiences reveal that rural elites have political allegiances and can be suspicious of NGOs and businesses as agents of the opposition. For example, an ex-Micaia field officer spoke of how Regulos and local government summoned Micaia to test the organisation's political affiliation.

> *'The communities will test you and ask if you belong to a party. The want to test you and say things like 'oh if you want to work with him/her, they will tell you that they belong to a party, and if you respond by revealing that belonging to a specific party is a good or a bad thing then they will know that you are political. Like the community of Mpunga, they will test you sometimes….I had to go have a meeting in chef de localdade and local leaders, we were summoned. They thought we were from Renamo. And they started the meeting and they said, "we are all here, we are comrades [referring to membership of Frelimo] ". And one of them said, "come on comrades let's wash our hands and go and eat" and then at one point they said, "sorry to call you all comrades, I don't know if we all comrades". Because I was close to the community members, they warned me that we were being considered as the opposition party...so I went to the meeting with that knowledge and I took my Frelimo membership card. When they said, "I hope no one is uncomfortable with being called comrades" then I produced my card. They said no, no, no, it is not necessary. And from then they knew we were not Renamo'*[50]

In the context of this political rivalry, Micaia staff are subjected to continuous attempts by Frelimo loyal actors to steer activities and benefits toward Frelimo-friendly communities. An ex-member of Micaia's team suggested that Regulos would explicitly direct Micaia away from Renamo voting households,

> *'In the beginning, it was possible to find leaders that would tell us not to go certain households as they belonged to the opposition [Renamo]. Some people for projects will get lists from the traditional leaders, who they should involve, and they do that'*[51]

The ex-staff member therefore suggests that most of the Regulos that Micaia work with have accepted the organisation's neutrality and no longer try to steer activities in this way. However, a senior manager at Micaia suggested that these practices were still common in 2019, describing how

[50] Source 12
[51] Source 12

some actors recently tried to take credit for seed distributions and direct them away from Renamo voting individuals.

> *'The seed distribution in Maronga. They asked the lead farmer to say that the seed [donated from Mozbio / World Bank] was from Frelimo and not to distribute to the opposition [Renamo]. The lead farmer refused and then we got a phone call from high office. They were asking what happened and why didn't you say that the seed was from Frelimo. We had to phone SDAE* [District Services for Economic Activities] *to go and mediate. He went and had to explain'*

Micaia staff and our focal entrepreneurs suggest that their organisational strategy to avoid the interference by meddling actors is to maintain that Micaia are neutral, '*we try to explain that these projects are apolitical*'[52]. They therefore try to distribute the benefits of their activities across both Renamo and Frelimo supporting communities and instruct their staff to do their best to avoid being steered by pro-Frelimo agents. '*The communities recognise us as neutral, but the trust we built from the beginning*'[53]. Although, I note that the quote above suggests they struggle to maintain their neutrality if field staff produce membership cards of one of the political parties.

At a more micro level, Micaia staff reveal they employ different strategies to stop Micaia's projects and activities being steered toward certain actors. One strategy is to fall back on Micaia's environmental mission, i.e., to explain to those trying to steer distributions that to secure environmental benefits that activities need to be equally distributed across territories.

> *'We get a lot of interference from the chef de Posto and Regulos when we are distributing beehives. We use the notion that mozbio is a conservation project and that we cannot withhold beehives to people that are Renamo as they also use and burn the forest. [Dave] has to explain that a lot and is good at it, he is authoritative'*[54]

Another strategy used by Micaia field staff is to leverage their network of informants within communities to discover if and how people are being excluded from projects.

> *'Some leaders will only send the people that are willing to pay them, or only or only people they owe favours, or people that are in the party [Frelimo]. We have these*

[52] Source 14
[53] Source 12
[54] Source 14

issues in Nahedzi. One thing that is very important is that when you go to the communities you must interact with everyone you meet and you must treat them well and they can tell you what is happening…it is easy to determine what is going on when you interact with everyone and become friends with people…The teacher there would tell me that person X is a friend of the Regulo and is giving part of his per diems...or that no one person from the opposition has been selected. Keeping this information secret, I would need to say to the Regulo. "We need to find another way to select the community". That some people aren't good at replicating the knowledge, they are not passing it on. You see. This would trigger us to find new participants[55]'.

Skills

One important resource limitation affecting Micaia relates to finding employees with values that align with that of the organisations. In 2019, Andrew and Milagre suggested they would like to scale back their role in the day-to-day running of Micaia, and that they had been actively looking to recruit someone to a leadership position. Interviews reveal that one of the most sought-after attributes in this candidate related to their values or ethos:

'Across the organisation one of the problems we have is with middle management. If you have a lead entrepreneur that sets something up, finding someone that can replicate, that you can hand over to is difficult. We would like to hand over [the running of Micaia] but we are reluctant to until we feel that someone is in place that can continue the organisation in the same spirit. We're aware that new people will come in and they will be much better than Milagre or I at certain things, aspects of running the organisation. But what is most important to us is value, vision, commitment'.[56]

They suggest that finding someone with aligning values has however been a significant challenge. In response, they have experimented with the resources they have had to hand, trialling people with leadership responsibilities. These experiments have ultimately left them disappointed.

[55] Source 12
[56] Source 1

'We have experimented with an acting chief operating officer. We thought they were rising fast, they were a box ticker and a hard worker that would get things done. With her we thought she could run the organisation as she was organised and a disciplinarian that could control others. However, we had reservations as she would join in and be one of the lads…join in on the petty theft if you like. And the end came when she simply went against the wishes of Milagre and myself over per diems in the field which caused a load of problems. That takes me back as it is not so much skills, we can train skills, but the person's values which are important'.[57]

Customers and markets

Customers and markets can be a key area of experimentation for entrepreneurs. Entrepreneurs are suggested to use bricolage to provide products or services to groups of customers that would otherwise be unable to access them due to, *inter alia*, poverty, thriftiness or lack of availability. Entrepreneurial bricolage can therefore create customers and markets where none existed before. The following section explores the evolution in the customers and markets for Micaia's enterprises.

Eco-Micaia's tourism operation, Ndzou Camp, was funded by the World Bank (TFCA2 project[58]) with the explicit goal of creating tourism revenues and a commitment to conservation in the Chimanimani national reserve. However, Micaia, donors and other partners disagreed on the design of the tourism operation. Specifically, the type of customer and market that the camp should appeal to. Our entrepreneurs fought for their position over the course of several confrontations.

'They had a particular vision of tourism. High end tourism. It was charismatic fauna. Well, Chimanimani doesn't do that. We have one charismatic fauna. But you have elephants in other parts of the country, and to see our elephants you need to get up at 5 in the morning and maybe you don't see them…So our view from the start of the TFCA project, and we fought and fought and fought for it, that there was no room for high end tourism in Chimanimani…Our strategy was to decentralise and do tented camps and just have two major facilities, Binga camp and Ndzou camp. But they had the authorities, they wanted 5 star lodges and it never happened'[59]

Andrew and Milagre's vision of community responsible tourism won out over the alternative, high-end model. However, it is impossible to know if an alternative version of Ndzou Camp, catering to high-

[57] Source 1
[58] https://documents1.worldbank.org/curated/en/987681468061747321/pdf/32720.pdf
[59] Source 2

end clientele, would be successful in attracting sufficient business to generate the intended revenues and fuel conservation. Andrew suggests the failure of another national park in central Mozambique to attract a premium paying clientele proves that the decision to keep Ndzou affordable was the correct choice.

> *'If you look at Gorongosa's tourism, they have failed completely. They make a massive loss. They gave it away. Gregg Carr understood that tourism is not going to make money there. It is too far away, there is not enough there, it costs too much money to get there… He recognised that he needed proper tourism people in to do it. So he sold it, they invested a million dollars and they are never going to get it back'*[60]

Being realistic about what types of customers and markets could be attracted to a tourism business in Chimanimani has been crucial to the survival of Ndzou Camp. This represents an important decision and point of entrepreneurial agency. A decision made in the face of donors and stakeholders' seemingly unrealistic desire to bring high end tourism to an area with relatively little to offer.

MHC has worked to diversify its customers and market since it was first taken over by Micaia. MHC initially sold honey in expensive glass jars in supermarkets across Mozambique. The product was targeted at the higher end of the formal market, competing with imported, relatively low-quality honeys from various countries, e.g. India and South Africa. Andrew indicated that pivoting toward a cheaper product (cheaper plastic packaging) has facilitated substantial growth in honey sales.

> *'When we started, we were selling 15,000 kg of honey, now it is around 20,000. But that is because the growth has come in the cheaper product, the plastic packs. So, the margins are smaller, and we need to shift more product'*[61]

MHCs expansion into a cheaper product has therefore created new customers from people that would otherwise not be part of the market. It is uncertain where these new customers came from. It is likely MHC's customers would have already been part of the national market for honey but have potentially been lured away from the informal market by a cheaper, formal and Mozambican product. MHC has potentially created additional customers from people keen to buy a formal, high quality Mozambican honey, but had hitherto been kept from accessing the formal product due to the relatively high price.

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[60] Source 2
[61] Source 1

Micaia and BPM have also innovated to create new customers and markets for Mozambican Baobab. BPM was the first company in Mozambique to access European markets. Andrew expresses confusion regarding why other entrepreneurs had not acted on this opportunity, and why no one had invested to formalise the national honey trade.

> *'it kind of comes back to financial resources, but there is a lot of money in Mozambique and the question is why are more people not investing money. Is it a lack of knowledge, awareness and a lack of exposure to the outside world? It doesn't have to be export but the way I am looking at, why were we the first to do baobab into European markets? Why did it take so long to get people interested in honey? It isn't just money. There are people there with lots of money, that have the money to buy lots of baobab or honey. Why are they not buying honey and putting it in quality packaging and getting it into national markets…because it is easier to put it into plastic bottles and keep it in the informal market where everyone is happy buying their honey. So, it is partly a comfort zone, why change a system that works well locally. I think it might also be fear of exposure locally and being someone that has money. Many people adopt the attitude of having small local businesses than a big one'*[62]

A significant pivot for BPM with regards to customers and markets came when they obtained organic certification. Andrew suggests that his experience was key in making this process straightforward for BPM. He highlights that most small businesses in Mozambique lack the necessary skills and experience to obtain organic certification.

> *'The organic certification is tough for small businesses, I think. It's not straight forward. I'm a little blasé, but it was easy to draft in the organic rules as we were already working with hundreds of women. I already had the contacts, I knew the people through PhytoTrade*[63] *but there are those advantages if you are small business person based in chimoio, you don't speak English, you don't have those contacts it is easy to see why others had not yet gone down that route'*[64]

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[62] Source 1
[63] PhytoTrade was a network of individuals committed to the development of the biotrade sector in Africa http://www.phytotradeafrica.com/home/
[64] Source 1

Andrew highlights that some markets remain out of reach due to a lack of other certification. Yet he is unsure if obtaining other certifications will result in a significant amount of new customers

> *'For example, with baobab, we can't sell to the US because we don't have ISO certification. I don't know if that would add significantly to our sales. It is a financial limitation that we haven't gone through the certification. I don't know how much it would cost but it is probably around 5 grand, the same as the organic'*[65]

Overall, our entrepreneurs have had to innovate with regards to their customers and markets to ensure the survival and success of their enterprises. Each of the businesses has required different strategies to create customers and to access markets. Ndzou camp required Andrew and Milagre to resist the influential donors and authorities with unrealistic expectations of national and international tourist markets. MHC has required our entrepreneurs to pivot toward a cheaper product. This has significantly increased their market share by tapping into individuals keen to purchase quality Mozambican honey but that were seemingly not lured away from informal products at a higher price point. BPM has been put through a relatively expensive organic certification to gain access to international and premium markets. Our entrepreneurs are concomitantly confused why they were the first to reach these markets with Mozambican baobab, but they also highlight how their prior experience and language proficiencies made organic certification process straight forward. Again, these experiences are potentially not common in Mozambique and likely that significant barriers stand in the way of small businesses and access to organic certification and, in turn, European markets.

Discussion: toward understanding the individual-opportunity nexus for conservation and global development

The origin of MHC provides a vivid case of what can be achieved when commercially and socially/environmentally oriented entrepreneurs collaborate. The reported complementarity between Micaia and Andre Vonk stands out. The collaboration was key to unlock the skills and investment necessary to create a successful business aimed at enhancing livelihoods and conserving the environment. To donors, the combination of Vonk and Micaia was highly appealing. The collaboration also provided an important learning experience for Andrew and Milagre, allowing them to learn about commercial enterprise and build their commercial entrepreneurial skills. A key conclusion is that commercial and social entrepreneurs have much to learn from each other. They can be highly

[65] Source 1

complementary in terms of skills and services, and that collaborations are key to unlocking entrepreneurial opportunities with win-wins both socially and environmentally. This is potentially common sense, but if we want the conservation sector to be more innovative and entrepreneurial then cross-fertilisation of ideas is beneficial. However, this case study also suggests that these types of collaborations are uncommon, at least for Micaia, which raises several questions for further research examining entrepreneurship across conservation and development sector. For example, what are the factors that facilitate or hinder commercial and social/environmental entrepreneurs collaborating; what are the different ways commercial and environmental entrepreneurs connect with each other; and do environmental entrepreneurs see commercial entrepreneurs as viable partners in their efforts to create enterprises?

The case study however also provides an illustration of what can go wrong when commercial and social/environmental entrepreneurs collaborate. Specifically, when risk taking and rule bending entrepreneurs, not used to having to report to donors, collide with institutions with strict protocols. It is hard to draw conclusions as I was not granted full access to the details. Nevertheless, it stresses that partnerships between these two groups of entrepreneurs and donors can come with risks.

The chapter confirms that the focal entrepreneurs operate in an environment hostile toward small enterprises. The focal entrepreneurs have navigated this hostile environment as highly successful resource seekers, securing significant financial investment from development donors. The entrepreneurs credit their successful resource seeking to their previous experience of the development sector, adding evidence that industry experience, and resultant social networks, are key element of successful entrepreneurship in conservation and development. I argue that the hostile environment in which conservation and development entrepreneurship takes place makes industry experience and social networks more crucial element of entrepreneurial success.

The effectiveness of our entrepreneurs in securing funding for their enterprises is slightly unexpected due to the resource penurious environments of Mozambique (Pereira & Maia, 2019; chapter 4). For those that '*know where to look*', international donors can and do provide the financial investment necessary for social and environmental enterprises to establish and grow. I therefore argue that the donor sector plays a significant role in offsetting or compensating a normally hostile entrepreneurial environment in Mozambique.

Nevertheless, this chapter demonstrates that donor funding has not precisely matched the needs of our entrepreneurs. Foremost, the establishment and achieving enterprise sustainability takes longer than typical 2, 3 or 5-year donor funding cycles associated with conservation and development projects (Boshoven, Hill & Baker 2021). This structure has necessitated that social and environmental entrepreneurs develop relationships with multiple donors, which has at times been labour intensive

due to reporting requirements. Second, a specific type of finance, working capital, has been '*critical*' to the survival and current success of MHC. Andrew and Milagre struggled to secure this funding due to donors' general reluctance to provide this type of funding. Micaia secured working capital due to their longstanding and trusting relationship with a single donor.

Despite the focal entrepreneur's successful resource seeking, they have nevertheless faced financial limitations and several associated challenges. This study highlights entrepreneurial bricolage as a key strategy for the focal entrepreneurs, primarily in the area of labour and skills. Andrew and Milagre experimented with how they used labour, refining their organisations' labour structure on an annual basis, constantly making do. This has not only resulted in cost reductions and product quality improvements, but it has also maximised the economic value of the baobab trade to rural communities by separately paying women to collect and then process their baobab. Andrew and Milagre, suggest that one of the biggest shortages they have faced relates to values and skills. Specifically, Micaia have lacked the resources to employ staff with proven track records of leadership to play a significant middle–upper management role. Micaia have therefore often made do with the staff at hand, promoting from within the organisation. This has however led to successive disappointments when the values of the staff do not align with our entrepreneurs' expectation. Andrew and Milagre suggest they consequently take on more of the day-to-day running of the organisation. Finding someone they trust to hand their businesses over to represents a perpetual challenge for our entrepreneurs. With regards to regulations, I found little evidence Micaia were bricoleurs in this domain. This is seemingly due to our entrepreneurs' strategy to 'play it straight', i.e., to adhere to formal laws and governance systems. Nevertheless, there seems to be huge level of entrepreneurial skill involved in avoiding the dominant, informal governance regime in Mozambique, which manifests in diverse ways, including when the state (Frelimo) claims Micaia as their proxy. I suggest that Andrew and Milagre's choice to adhere to official regulations represents a form of entrepreneurial innovation as they actively avoid the de facto, informal governance for baobab and honey. Andrew and Milagre's ability to make do and innovate when it comes to labour, skills, values and regulations is an important component of unpacking their success, illustrating the diverse skills needed to make conservation enterprises work.

Conclusion

Micaia's entrepreneurship is difficult to comprehensively describe due to the multiple dimensions that constitute entrepreneurship, limitations of this research and the reliance on the memories of the entrepreneurs themselves to collect data. This chapter sought to determine what traits, experiences

and processes have the focal entrepreneurs used to identify their entrepreneurial opportunity in the conservation and development sector, and how have they navigated key institutional challenges to create successful enterprises.

By unpacking factors contributing toward Andrew and Milagre's entrepreneurship I have offered insights into the unique combination of challenges that hinder entrepreneurship in the conservation and development sector, and what it can take to overcome these challenges. My research illustrates precisely how Mozambique can be a hostile institutional environment toward entrepreneurship, and elaborates some of the economic, socio-cultural and political difficulties. This case study suggests that successfully navigating this hostile environment necessitates entrepreneurs to have well developed sector experience, social networks, key collaborations with commercial entrepreneurs, bricolage skills across multiple domains, significant intrinsic motivation combined with a willingness to bear opportunity costs.

8. How entrepreneurship and MBIs combine to stimulate local institutional change

> *'What changed is we want to be done with poverty. Before people used to say that only men should work, but now all people can work, woman or not. This is for the development of the family'*[1].

This chapter further explores entrepreneurial agency in the context of NTFP commercialisation and MBI development by examining the role our focal entrepreneurs play in adapting local-level institutions. It does so through a case study of MHC and their efforts to address gender related challenges in beekeeping and increase female participation. The chapter has the overarching research question:

How do entrepreneurs and their MBIs work together to stimulate change in local institutions, and how are MBIs adapted by local actors and with what effect?

And the following sub questions,

a. What local institutions have been changed or transformed by/alongside the focal MBIs?
b. What factors support MBIs to create change in local institutions and how do entrepreneurs support their interventions to create change.

The broad aim of this chapter was to explore how social enterprises and their entrepreneurs are engaging with institutions within local communities, understand the contestations around these engagements and to learn lessons to mediate entrepreneurship.

To answer these questions this chapter combines gendered, entrepreneurial and institutional lenses to consider the role of women in the honey value chain, the constraints to enhancing their role, how entrepreneurs recognise opportunities and engage strategies to overcome barriers to female participation. The chapter first explores the motivations of the entrepreneurs to engage with challenges associated with gender in the honey value chain. Second, it examines the challenges and resistance they faced while attempting to boost female participation in beekeeping. Third, it unpacks the strategies the entrepreneurs used to overcome these challenges. Fourth, it explores local perceptions of the roles of men and women in the MHC value chain. Finally, it applies entrepreneurial

[1] Household survey, female non-beekeeper, Muoco, 09/11/2019

theories (bricolage, social engineering) to explain how social entrepreneurs alter local level institutions.

Early experiences of gender roles in central Mozambique

MHC have established new honey value-chains in Mozambique, connecting rural beekeepers across Chimanimani to a national market. Over the course of the last decade, Andrew and Milagre have challenged the male dominance in the value chain by actively promoting female participation. The following section details some of the early experiences and challenges encountered by our entrepreneurs.

Micaia and MHC have not always prioritised gender in the value chain. When Andrew and Milagre first started to collaborate with MHC, equality and female participation were not a focus of the business. Instead, training, production and profit were central objectives.

> *'When we started to work with beekeepers, gender was not high on the private sector's agenda. What [the previous owner] wanted was quantity and money…when you enter a value chain like honey you need to do the technical training in the beginning. Then when the reporting comes you worry about gender'*[2]

The partnership between MHC and Micaia however started to expand the concerns of the business beyond profit and toward women's empowerment. Andrew and Milagre's previous work had revolved around challenging inequality in rural society, women's empowerment and challenging patriarchal relations. When they became more involved with MHC, taking over a greater share of the company, they brought these values with them.

> *'it is more a commitment to equality. It is broader recognition that in any situation, in communities or in any group, that some people find it harder to commit than others. Some are excluded for different reasons. So, we have tried to be aware of that and women, particularly, find it difficult […] In all our work we try to have some sort of parity in the value chain […] We were not really concerned about male participation as men tend to do what they want to do as the society is patriarchal, so we don't worry about their participation'*[3]

Our entrepreneurs' early experiences with donor grants had a significant influence in bringing gender in the honey value chain to the fore. Donor indicators for female participation in the value chain

[2] Source 1
[3] Source 2

highlighted specific difficulties in securing female participation. A grant from Comic Relief, which allowed a significant expansion of the honey business through the provision of additional hives and training to new beekeepers, came with gendered targets for participation. '*Gender goes beyond Micaia and many donors, such as Comic Relief, have pushed for 30, 40, 50% female participation'*[4]. Micaia did not push female participation during this early project, allowing communities to self-select participants[5]. However, involving women was extremely difficult, with the project only yielding a small proportion of female participants. *'It was very difficult to get women involved in beekeeping*...*especially at first when we were starting out*[6]'.

However, Andrew and Milagre indicate that subsequent experiences of being more forceful with their recruitment of female beekeepers did not work either, resulting in inactive female participation.

> *'We had a problem with inactive participation of women, when women would sign up to programmes and then sit on the side, not say anything and give everything to the men. And many other problems, the government bought a load of Langstroth hives…and distributed them to women but year after year they were returning, and the hives were just sitting there'*[7].

To understand factors restricting female participation and to formulate systematic strategies that would bring women into beekeeping, Milagre and Andrew applied for another grant, a DFID innovation fund.

Resistance to making beekeeping more inclusive

Andrew and Milagre encountered resistance to female beekeepers during the implementation of early projects. They suggested that men in the collaborating communities frequently objected to the inclusion of women, and that men used meetings to repeatedly assert that beekeeping was exclusively male.

> *'There are potentially two or three strategies they [men] followed [to argue against female participation]. One was to simply point out that women couldn't do beekeeping as they were frightened of bees, or it just wasn't done. Other bizarre*

[4] Source 2
[5] Source 2
[6] Source 1
[7] Source 1

> *things they used to say was that women couldn't do the harvesting as when you do the harvesting you need to take all their clothes off…We had a trainer from Zimbabwe that came in to talk about issues around hygiene and standards in the collection process… they were talking about the things they had to do to collect honey as the bees would smell any sort of perfume or deodorant, etc. so they [men] were saying that they had to smear themselves in mud and sand and go naked, it was absolute nonsense. There were a few stories like that'* [8].

Both men and women propagated these arguments and anecdotes against female participation. '*The women would look at us, look at beekeeping as an activity and say, I cannot do this, I don't wear trousers, I don't climb trees, I cannot do it'*[9].

However, the resistance to female participation in beekeeping was not universal. Communities varied in their resistance, with the views of the community leader being highly influential. '*The regulo in Mucawaio was easy going and couldn't care less if women were not involved. It was easy there [getting women to participate] as that community has had a lot of interactions with the outside world*'[10]. The relatively isolated communities in the south of Chimanimani are more conservative and apparently resisted female participation more strongly. Women in southern communities reported have much less agency than in northern areas, where women are more commonly expected to earn money and contribute to household finances[11]. Micaia staff attribute these differentiations in women's empowerment to range of factors, including the Regulos' views toward women, activity of previous NGOs within the community, accessibility or isolation of the community, the strength of the patriarchy and the nature of livelihood opportunities available in the community.

> *'You still have these attitudes today especially in the south of Chimanimani. That is where the level of investment has been low, in infrastructure and education. They fall back on basic patriarchal systems and have stronger views about the role of women'*[12].

One important explanation for women's reluctance to participate in beekeeping is men potentially capture benefits stemming from their participation. The patriarchal systems in Chimanimani give

[8] Source 1
[9] Source 1
[10] Source 1
[11] Source 1
[12] Source 1

women limited rights over property, possessions and earnings[13]. A woman's property will *de facto* belong to their husband, including beehives and any money they earn from the sale of honey. '*If the women have beehives, then the men own them anyway*'. This has notably deterred female participation in other Micaia development projects. For example, despite communities' initial enthusiasm for a land management capacity building project, consultations with women-only groups revealed their concerns about taking part. In short, women made it explicit they did not want to expend effort improving the condition of farmland (e.g., through tree planting, etc.) that ultimately does not belong to them. Their rationale being that they could toil to improve the condition and value of their land, only to be ejected from it if their husband dies or if they get divorced[14].

Conversations with women across Chimanimani reveal a range of norms regarding how female income is treated within households, which likely influences an individual's decisions to engage with beekeeping or not. A range of behaviours were reported, with some giving all their earnings to their husbands, others gave most, some reported giving only a minor part, whereas others give none, keeping all the money they earn to spend as they wish. Multiple respondents reported having discussion with their husbands about what they plan to spend the money on. Others suggested they had to buy gifts for their husbands, whereas others indicated that it depends on what expenses the family have at the time. A spectrum of practices is therefore on display relating to the degree of control men exercise over female income. For the group that relinquish their money to their male head of household and see little benefit for themselves or their children, it is likely they are significantly discouraged to participate in alternative livelihood activities and projects, including beekeeping[15].

Key events and changing perceptions of the value of beekeeping as a livelihood also triggered opposition to female participation. As part of Micaia's DFID innovation grant, Micaia distributed a second set of beehives[16] only to women. At this point, crucially, men's interest in beekeeping and their demand for hives was rising. This contrasts to the initial hive distributions funded by Comic Relief, where, in Mpunga, men were uninterested in the activity. This was because beekeeping was viewed as having limited potential, and the consensus was concentrating on growing cash crops, such as

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[13] On six occasions I sat down to interview a male head of household who claimed to possess new style beehives (Kenyan top bar hives). I would then discover the head of household knew very little about beekeeping and, after additional questions, that it was one of his wives that was given the hives by Micaia and were the formally registered beekeeper. The frequency of this mistaken identity prompted me to alter the way in which I inquired about an individual's involvement in beekeeping when approaching a new household.

[14] Source 1

[15] Male, beekeeper survey 2, entry 11, Mpunga

[16] Following their initial distributions for comic relief

banana, was a better, more profitable use of time[17]. This indifference in the community is exemplified by a group that registered to be beekeepers but did not make the effort to pick up their hives. Attitudes in Mpunga apparently changed when beekeepers in neighbouring communities started to earn relatively significant incomes from selling their honey to MHC[18] (Chapter 5). When the time for the next hive distribution arrived, men were eager to procure beehives, even when Micaia communicated these hives were destined for women only.

> *'…the next time we distributed hives…these were for women only and the men wanted those hives. You would have regulos and members of the community that wanted in, so they were complaining to us. We didn't have any aggressive threats, but we had to assert our position and say that these hives were for women only'*[19].

Strategies to overcome bias against women's beekeeping

Our entrepreneurs suggest that they have deployed several distinct strategies to try and engage women and boost female participation in their honey value chain. It is worth noting that their general approach to the issue has been informed by previous failed attempts to include women in other projects. Specifically, '*our experiences with the youth bank. …for each one of the leaders it was […] an opportunity to get as much money as possible […] they recognised that women were important and brought significant numbers of women to the meetings. However, when we did the monitoring, we would find only men in the groups…the women had disappeared [from the project*][20]'. Consequently, they have experienced and caution against top-down or enforced gendered participation targets in development interventions or projects (e.g., by demanding that communities put forward 50% female participants for a given activity), concluding that this will result in '*inactive*' or '*surface-level*' participation[21].

> *'…if you force too hard with gender [female] participation then you get participation on the surface but when they go home it will be the husbands and sons that are getting the benefits. They will be the ones really doing the tasks. It will be just a front*[22]*'.*

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[17] Household survey, female non-beekeepers; Source 4
[18] Source 4
[19] Source 1
[20] Source 1
[21] Source 1
[22] Source 1

Our entrepreneurs therefore focus on securing what they refer to as '*meaningful participation*[23]', emphasising a patient approach of utilising local knowledge and building trust with the communities over a long time period.

> '**…**to actually achieve these things [meaningful participation of women] it requires much more local knowledge of the people and their community. You need to establish trust between the communities and work with them for a long time. Once they know that you know their communities then you will get more accurate representation and numbers'[24].

Micaia facilitated female participation in the MHC value chain by providing modern beekeeping equipment to producers. More specifically, Micaia distributed KTB hives. These hives have several attributes which makes beekeeping more accessible and less physical compared to traditional beekeeping which uses hives made of logs and suspended high in trees. KTBs are lighter and more transportable. They can be reused following harvesting. If maintained, they produce more honey and are easily accessed so part of the hive/honey can be removed while leaving a partial amount for the bees. Crucially, top-bar hives are mounted or suspended at around 1 metre off the ground, eliminating a beekeeper's need to climb trees to place their hives. As previously discussed, much of the resistance to female participation revolved around the physicality (or lack) of women and their perceived inability to climb trees to place these traditional log hives. Thus, the distributions of KTBs removed some of the communities' practical rationale for excluding women from beekeeping[25].

Second, MHC and Micaia maintained support for their male beekeepers during projects focused on increasing female participation. This took the form of field staff providing training, answering questions, and being available if emergencies arose, such as ant infestations. Andrew and Milagre speculate that without this continued support to male beekeepers the potential resistance to female only hive distributions could have been much more forceful[26].

Third, Micaia employed the experiences of established female beekeepers in the region to promote female participation in their own value chain. Previous development projects associated with the government and the Ford Foundation had involved women in beekeeping throughout Sussundenga,

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[23] Source 1

[24] Source 1

[25] 'We used technology to solve the issue of having to climb trees. Instead of having tree-based logs and women climbing trees we introduced the top bar hives to solve that issue […] We took away some of the excuses. We cleared away a lot of the myths and focused on just good practice in beekeeping. Which is gender neutral, there is nothing stopping women for example putting on a bee suit and cleaning a hive. Men and women are just as likely to be afraid of the bees'. Source 2

[26] Source 1

creating a small number of successful female beekeepers during the '90s and '00s. Micaia recruited these female beekeepers to act as role models and championed these women in the communities, showing them in action to demonstrate their skills and capabilities[27].

> *'We used the successful women to transform these norms. We took videos of the women beekeepers and used exchanges to demonstrate to communities that women can keep bees. We used the woman with her own honey business, her own casa de mel [honey house / storage], to demonstrate that women can keep bees'[28].*

Fourth, Andrew and Milagre suggest that Micaia's female staff have functioned as role models while working in the communities, which has potentially helped to break down barriers associated with gender. Although the female staff members did not operate as beekeepers themselves, they were nevertheless presented as successful women, capable of performing roles typically associated to men in Mozambique. For example, when working in the communities, female staff presented themselves as foresters (primarily a male role in Mozambique); as key or important participants in otherwise entirely male meetings within communities; as leaders of teams of men in the field, and as physically strong, capable of climbing hills and conducting physically taxing field work. Their visibility in the communities is suggested to have '*broke the mould*' and had positive contribution to changing gender norms.

> *'Another thing was when [Micaia field staff] was pregnant and she worked in the field and climbed mountains and walked miles I think that the communities (both men and the women seeing these things was important and had an impact. Many women would say things such as it is not proper etc. By showing them through doing is important'[29].*

Fifth, Micaia actively targeted and encouraged women from female-headed households to participate. Andrew suggested that women from female headed households were easier to recruit than those from male-headed households. Moreover, this was reported as one of Micaia's most successful strategies to increase the number of female beekeepers:

> *'We pushed it. Saimone was going out with the mission of getting women involved [...] It was opportunistic too. You have some households which are headed by women [...] The households are led by women for many reasons. You have a few divorced*

[27] Source 2
[28] Source 2
[29] Source 1

> *and also widows, and also households where their husbands and sons have gone to the mines to find work [...] in female headed households we would get more immediate buy in because sometimes they can lack money and are interested in the economic aspects[...] working with female headed households was important to gain traction in some communities'*

Interviews with community members suggest that men are acutely aware of the financial hardship that female headed households can face. Several men maintained the position that women should not keep bees but suggested that beekeeping was acceptable for '*widows in need of money*', '*women with hard lives*' and '*widows need to do these things*. Thus, some men seemingly soften these gendered barriers to female participation for certain groups.

Have gender norms changed through entrepreneurship?

Micaia's perceptions

Our focal entrepreneurs and several of Micaia's staff suggest that they have had remarkable success in bringing women into the value chain and empowering women in the process, but aspects of female participation in beekeeping remain limited[30].

> *'If you think about it as a long-term process of change the one thing that has already changed is that there is no real stigma, no real blockage to women being beekeepers in the communities. We have case studies of the men in the communities saying they weren't interested in beekeeping until my wife got into it, now we all do it, it's a family business'*[31].

That the stigma surrounding female beekeepers has mostly been dispelled and women now incorporate beekeeping as a livelihood is a significant claim suggesting clear progress overcoming gendered barriers to inclusion, especially considering the nature of the initial resistance they encountered. The entrepreneurs provide two key pieces of evidence to back up their claim: the increasing number of registered female beekeepers providing honey to MHC[32]; and the recent recruitment of women to leadership positions within MHC's network of producers. That is, women now occupy the role of lead beekeeper within several communities, and are responsible for

[30] Source 1 ; Source 2 ; Source 5 ; Source 6
[31] Source 2
[32] Honey buying book.

communicating with Micaia /MHC, organising the beekeepers during collections and relaying any training or messages to their community. '*So yes, now we do have women beekeepers and lead beekeepers, we have got women taking beekeeping seriously'*[33]**.** Andrew, Milagre and other Micaia staff attribute this change to the range of previously discussed strategies, '*it was because a range of factors, the technology, the suits...I don't think there is a single driver of change [in gender norms] it is a combination of factors'*[34]. They therefore emphasise that no single strategy can be attributed with this success and that longevity of their approach has been key. '*But I will stress that it has taken a long time. We've been at this 8 years. And it is still a work in progress'*[35].

Our entrepreneurs point to the evolution of ownership / labour relations around beekeeping, which potentially indicate a shift in gender norms. Specifically, some of the registered female beekeepers are reportedly paying men to maintain their hives for them[36]. This suggests that women are maintaining ownership of hives they receive, but do not want to or do not feel comfortable performing the associated physical tasks, e.g., cleaning hives or harvesting honey. I see multiple potential explanations for these arrangements. It could be because it is now widely accepted that women can own hives but other barriers still exist in relation to the activity of beekeeping, i.e., that the women involved simply do not think beekeeping is appropriate work for them. The explanation is potentially simpler, i.e., they are afraid of bees, do not like the work, don't have time or have other priorities. Nevertheless, it is important that the women forming these arrangements are maintaining hive ownership and are seemingly able to choose if they want to undertake the physical aspects of beekeeping.

Local perspectives on female beekeepers

Most respondents (37/52 non-beekeepers) thought women should be allowed to keep bees. Eight respondents declined to comment or did not know, whereas seven strongly oppose female beekeeping. Thematic analysis of the explanations reveals various beliefs and attitudes regarding why women should or shouldn't keep bees, alongside a range of perceived barriers to female participation.

Of the men (4) and women (3) openly disagreeing with female beekeeping, some argued that women would not physically cope with the activity[37]. Some of these respondents failed to elaborate further.

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[33] Source 2
[34] Source 2
[35] Source 2
[36] Source 2
[37] Household survey, female non-beekeeper, Mpunga Central, 27/11/2019, Household survey, female non-beekeeper, Mussapa, 13/09/2019, Household survey, female non-beekeeper, Mussapa, 13/09/2019; Household survey, female non-beekeeper, Mpunga Central, 27/11/2019

Others stated that specific tasks associated with beekeeping are barriers for women. Specifically, two respondents suggested harvesting was problematic as women would get stung or be unable to flee from the bees due to female traditional dress[38]. One woman suggested she would be unable to climb trees. '*Why? Because I will not manage this work. I don't have the strength to place the beehives*'[39]. One of the respondents suggested women '*will not be able to make fire breaks to prevent the hives being burned*'[40]. These views align with the previously discussed views Micaia encountered when they first tried to include women in the value chain. Evidently, for some, the view that women's physical abilities preclude them from beekeeping persists.

A small number of respondents suggested that women should not participate in beekeeping as women have other priorities or roles to fulfil. Two women suggested that that they have enough work to do between household tasks and tending to their farm: '*Here, women only work in the fields. They do not work with beehives*'[41]. Men also presented this view.

> 'I don't think women should do this [keep bees] because if a woman does these things, man's work, she may not manage to finish her other tasks, work that is for a woman. [for example] cooking for the children, taking care of the children and going to the fields[42]'.

One man spoke of how he would prevent his wife from having hives if she had the opportunity. '*I would not let my wife have beehives. I am a man, and my wife cannot have beehives without me having beehives first*'[43]. The view that it is unacceptable for a wife to own something her husband does not, or to receive something before him, reveals his expectations about himself and what he needs to do to remain respectable. One female spoke of how her husband prevented her participation:

> *'I would like it [to have bees] but my husband does not want it. He did not accept this for me, to start this activity'[44].*

Thus, some men actively prevent their wives from becoming beekeepers against their wishes, and gendered barriers to participation have not been removed for all. Although, the small number of respondents openly communicating these views should be noted.

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[38] Women wrap kapulana's round their legs which could potentially restrict their ability to run.
[39] Household survey, female non-beekeeper, Mussapa, 13/09/2019
[40] Non-beekeeper survey 6, entry 34, female, Mpunga
[41] Household survey, female non-beekeeper, Muoco 09/11/2019
[42] Household survey, male non-beekeeper, Mapunga 29/11/2019
[43] Household survey, male non-beekeeper, Muoco 08/11/2019
[44] Green notebook, Informal conversation, Mussapa

Respondents who did not know / declined to answer if women should be allowed to keep bees or not suggested that the head of household should ultimately decide if a woman should keep bees. Two respondents referred to female participation as a '*casa a casa*' or house by house decision[45], presenting the position that it is generally acceptable within their community for women to keep bees, but only if their head of household approves. A male respondent from Mpunga suggested that men vary in their ability to accept female beekeepers, '*you have men that can accept [their wives can keep bees] and men that cannot accept*'[46].

Those suggesting that women should be beekeepers provide insight into the restrictions and caveats surrounding female beekeeping. For example, why they do not keep bees, or why they themselves don't keep bees despite previously having the opportunity. Foremost, some stated that it was acceptable for women to keep bees, but only specific types of women. As previously discussed, multiple respondents spoke of widows and how they struggle financially. '*Women can keep bees too [as well as men] because there are women that do not have husbands, they also need food and can sell honey. Because of this, women can be beekeepers too*'[47]. Thus, for some men, the social norms associated with gender roles are evidently flexible, specifically for those that are in need.

A small number of women indicated that men in their household had been given priority for receiving beehives. '*I gave the opportunity to my husband to write his name first [for beehives] and I wanted to write my name after*'[48]. Importantly, these individuals suggest they would like to receive hives and communicate their intention to participate in the future. The reason that these women therefore give for not participating does not relate to any form of opposition to them keeping bees. It is the social norm dictating that husbands come first that has been a barrier in these cases.

A large group of women suggested that women should be allowed to keep bees, but personally have no desire to become a beekeeper. Respondents gave a variety of reasons. Some stated they were afraid of bees. '*Why I don't want bees? It is dangerous to have bees'*[49]. Others suggested they did not have the required knowledge to start keeping bees or would '*not manage this type of work'*[50], whereas some stated that they already have enough work to get on with between household tasks and agriculture, '*I'm not interested in apiculture. I don't have time. I have my business and agriculture*'[51]. Together, these views potentially illustrate poor communication between Micaia and the communities

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[45] Household survey, male, non-beekeeper, Muoco, 08/11/2019
[46] Household survey, male non-beekeeper, Mapunga, 27/11/2019
[47] Household survey, female non-beekeeper, Muoco, 09/11/2019
[48] Household survey, female non-beekeeper, Mussapa, 19/09/2019
[49] Household survey 6, female non-beekeeper, Muoco, entry 33
[50] Household survey 6, female non-beekeeper, Muoco, entry 26
[51] Household survey 6, female non-beekeeper, Mucawaio, entry 16

about beekeeping and what it involves considering Micaia provides training and equipment, and that the time commitment is minimal. Better communication would potentially allay the fears the respondents expressed.

Some women had the opportunity to become beekeepers but turned down the opportunity in favour of more conventional agriculture programmes (i.e., seed distributions). In 2017 (during a World Bank funded project, MozBio) individuals were given a choice between participating in apiculture or agriculture programmes. It seems that agriculture was seen as a safer bet.

> *'I chose seeds instead of beekeeping. Why I did this was because I do not know well how beekeeping works. I was afraid I would not produce anything with bees. I preferred seeds because I already know this work. I thought it was safer to get seeds as I already knew [or had skills in] agriculture'*[52].

Many spoke of how women and men are equals and are as capable as each other with regards to jobs or livelihood activities. As one woman put it, '*woman should keep bees as women are not different to men. All things that a man does a women can do too*'[53]. Similarly, a man in Mpunga stated '*yes [women should keep bees] because women are people too, the same as men that can make money to sustain their families*'[54]. Thus, many respondents, both male and female ostensibly view women and men as equal, and that livelihood opportunities can be undertaken by either sex.

Local perspectives on changes to beliefs or attitudes

Local perspectives are key to understanding the drivers behind increasing acceptance of female beekeepers. Most respondents considered female beekeeping to have increased in their community and presented an array of opinions regarding what had driven this change[55].

Community members connected two of Micaia's strategies with changes in gender norms around beekeeping. Foremost, many referred to the introduction of top bar hives: '*What has changed [why women keep bees when they didn't before] is the type of work involved. Between traditional beehives*

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[52] Household survey, female non-beekeeper, Mussapa, 20/09/2019

[53] Household survey, female non-beekeeper, Muoco, 08/11/2019

[54] Household survey, male non beekeeper, Mpunga, entry 49

[55] I asked 52 respondents across three communities (Mucawaio, Mpunga and Muoco) if they considered anything to have changed in terms of the people that participate in beekeeping. A follow up question, if they considered more women to be keeping bees than before, why do you think more women keep bees now. This question often elicited no response and was followed up by the more direct question on why women are now allowed to keep bees when they weren't before.

and the new hives, the new hives are easier to use than the traditional'[56]. Individuals therefore acknowledge that the introduction of KTB hives has made beekeeping more accessible to women, confirming the accounts of the entrepreneurs. Second, one spoke of the influence of widows. '*This activity was only for men before. But we had widows that would keep bees, and now things have changed, and it is good for all women to keep bees*'[57]. Community perceptions therefore confirm the acceptance of beekeeping in marginalised or vulnerable groups as setting a precedent and priming wider acceptance of women keeping bees.

Many respondents attributed wider societal changes as key to explaining the uptake of beekeeping by women in their communities. Foremost, respondents referred to global change in relation to women's rights and weakening patriarchal control over women.

> *'What has changed? What has changed is the world. Before, women were not allowed to choose what activities / jobs to do. Men decided the type of work women did. Now women have the right to choose any type of work'*[58].

Similarly, another respondent referred to a societal change in mind-set about what women can and cannot do as livelihood activities.

> *'…our thinking has changed. Before, no one thought in this way, that a woman can have bees because the men did this work for the women. And now women think that they too can do any type of work'*[59]**.**

Some linked improving standards of education to increased capabilities of women to fulfil roles that were previously reserved for men. '*I think women here are smarter now than they used to be. Education is better than it was before. [for example] During the war. Now they can do the jobs that men are doing*'[60]. Others suggested that there has been a shift associated with the acceptability of women earning, handling and possessing money[61]. These respondents suggested that women display an ambition to earn money, an attribute apparently lacking in previous generations of women. '*It is the*

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[56] Household survey, male non-beekeeper, Muoco, 09/11/2019; It is because of the types of hive. The hives we have here now [KTBs] make it easier for women because they are easier to handle than the traditional hives Household survey, male, non-beekeeper, Muoco, 10/11/2019.
[57] Household survey, female, non-beekeeper, Muoco, 09/11/2019
[58] Household survey, female non-beekeeper, Muoco, 08/11/2019
[59] Household survey, female non-beekeeper, Muoco, 07/11/2019
[60] Household survey, male non-beekeeper, Muoco, 09/11/2019
[61] Household survey, female, non-beekeeper, Mapunga, 29/11/2019

want and ambition of women to have money. Before, our grandmothers did not have the ambition to want or get money. Now, women here want money' [62].

One of the most powerful responses referred to how attitudes in the community had changed out of the widespread desire for women to access income earning jobs which can help combat poverty and better provide for their families.

> *'What changed is we want to be done with poverty. Before people used to say that only men should work [earn money], but now all people can work [earn money], woman or not. This is for the development of the family'* [63].

Discussion

A key finding of this chapter is that the patriarchy and male dominance over resources is on display in Micaia's experiences of men *gaming* female participation in youth projects, in women's refusal to participate in land improvement projects due to their precarious land tenure, and in Micaia's honey business where men originally dominated participation. These social norms restrict meaningful participation of women in MBIs and limit the benefits they can derive from entrepreneurial interventions.

Andrew and Milagre recognised the male control in their value chain and sought to understand the factors restricting female participation. They then engaged diverse strategies to overcome resistance to female inclusion. These strategies involved the use of role models, creating female only spaces, installing novel working arrangements, and opportunistically targeting female headed households. These strategies are well known to those working in development and previous studies suggest they have been deployed with varying degrees of success to include women in honey value chains elsewhere (Shackleton et al., 2011a).

A limited but increasing number of women have meaningfully participated in beekeeping, which, compared to the initial condition of no female participation, indicates a slow or partial modification of gendered norms that restrict women's benefits from entreprenuership. The array of strategies used and difficulty in measurement make it difficult to discern the interventions with the most influence, or the other external factors that could be at play. Nevertheless the study provides an exploration of the

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[62] Household survey, male, non-beekeeper, Mapunga, 29/11/2019; 'I think that women now want lots of money relative to the years.

[63] Household survey, female non-beekeeper, Muoco, 09/11/2019

various strategies and tactics that can be used as part of interventions to help overcome restrictive norms limiting the benefits of entrepreneurship to women. The resistance to female participation Micaia experienced from local communities when trying to increase meaningful female participation in their value chain has been dynamic. There were a significant volume of complaints and conversations about why woman don't keep bees, but this never transcended into significant confrontations between Micaia / MHC and local communities. The resistance Micaia experienced could be characterised as widespread but weak. Crucially, this was not the only resistance as stronger discussions and contestations are evident elsewhere, e.g., between resistant groups and local government, demonstrated at the household level where women argued to participate and where men rejected their wives becoming beekeepers. Thus, the resistance occurred at multiple levels, between different stakeholders and mainly without Micaia staff present. The characteristics of these contestations seemingly align with Noe, Howland and Brockington's (2021) analysis, that gendered contests over commercial crops occur as a central part of everyday life. On the other hand, I observe that contestations have also manifested in a different way, in key confrontations or encounters, either at the household or community level. This mixture of weak, strong, multilevel, every day and key contestations highlights the dynamic nature of culture and institutions interacting with entrepreneurial interventions and MBIs. A key question emerging from this research is, how can entrepreneurial efforts to create local-level institutional change and make MBIs more inclusive account for these dynamic contestations?

Conclusion

I argue that using entrepreneurship and MBIs to create institutional change, e.g., overcoming male dominance over resources, requires more than creating a successful business activity and stipulating or asking for change to occur. For MBIs to create institutional change they must be accompanied by supporting actions tailored to the community needs, specifically adapted to the ways in which communities resist change. Nevertheless, despite evidence of some change in gender norms and increased acceptance of female beekeepers across the communities of Chimanimani, MHC, after a decade of working with communities in Chimanimani, currently have few productive female beekeepers on their books. This indicates that MBIs for conservation and development have limited potential to create institutional change, and MHC's case adds evidence that women's interactions with entrepreneurship and MBIs, and the benefits they can derive from them, can be significantly constrained by sociocultural values, norms, and traditions (Ojediran & Anderson 2020).

Expecting change to happen automatically alongside MBI implementation seems to have been the *modus operandi* for some of Micaia's donors. Our entrepreneurs' experiences highlight the outcomes of naïve, donor enforced targets for female involvement in projects or enterprise. Donor stipulated targets for female participation are perhaps a logical response to the historical propensity of development projects and policy to overlook women (e.g., in agricultural development projects Carr, 2008; Sachs, 1996). Micaia's case demonstrates how the implementation of these targets can lead to superficial participation, compromising the ability of entrepreneurial innovations and interventions to deliver women's empowerment. At the same time, donors clearly play a significant role in making the focal social enterprises and value chains more inclusive. For example, our entrepreneurs' experiences of superficial participation and donor targets provided an important impetus for them to take additional action toward better understanding socio-cultural barriers, and donors provided the project funding needed to experiment with approaches to meaningfully involve women.

9. Local rule bending, MBI adaption and thick institutions

This chapter aims to explore how MBI's can work in unintended ways and the impacts of these dynamics. It again focuses on the interplay of agency and the institutional components of market-based instruments, this time focusing on the ability of rural participants to shape the norms of Baobab Products Mozambique (BPM) to create arrangements which better suit their needs. I explore the following main research questions

How do MBIs create change in local institutions and how are MBIs adapted by local actors and with what effect?

And the following sub-question

a. How do MBIs participants shape the working components of MBIs through everyday practice and how does this impact on MBI function, especially in relation to their socio-environmental goals?

This chapter first outlines and contrasts the informal and formal baobab value chains in Guro and Tambara, BPM and Malawian, providing important context for the rest of the chapter. Second, it provides a breakdown and comparison of the institutions associated with these two value chains, i.e., the rules and norms that BPM's collectors are meant to follow. Third, it uses the testimonies of baobab collectors and their families to explore how these rules and norms are perceived, revealing how and why some of these rules are flexed and broken. Fourth, it analyses the impacts of this rule bending on producers and their livelihoods, before providing a discussion including an analysis of the implications for entrepreneurship and adaption of MBIs.

The rules and norms of BPM: small fruits, male exclusion, and registration

Micaia and BPM operate in two districts Guro and Tambara, located in the north of Manica province, Central Mozambique. Here, Baobab collection and sale represents an important additional or supplementary livelihood to rural agriculture, providing one of the few sources of cash income (See Chapter 6). The importance of Baobab collection as a livelihood is likely amplified by its complementarity to the region's seasonal agriculture—baobab collection occurs during dry months (June, July, August)

during the post-harvest season when agricultural activity is low but before stored food supplies start to dwindle, i.e., before the hungry season[1].

Participating in BPM's value chain requires collectors to comply with a set of formal rules and norms, each of which perform different functions. For example, rules and norms are intended to ensure the general quality of the product, to improve the efficiency of processing or transport, to minimise impact on the environment, some are requirements of external certifications (organic), whereas others are to protect the role of women in the baobab value chain. I found three sets of rules or norms which were flexed, tested or reinterpreted by local communities.

Small fruits

To sell fruit to BPM, collectors are required to leave any small or cracked baobab fruits in the forest. This rule has a dual purpose. First, organic certification requires collectors to leave some fruits on the forest floor as they are an important source of nutrition for animals in the arid central regions of Mozambique, especially throughout the dry season and times of drought. Part of organic certification means to minimise environmental impacts, therefore the complete removal of a potential food source for animals is undesirable. Second, leaving small fruits improves BPM's efficiency and profit. If BPM bought small fruits, it would more time intensive due to the increased processing required to yield the same amount of pulp. Collectors are retrained each year about the requirement to leave small fruits and any small fruits collected are rejected by BPM buying agents[2].

These rules have however been difficult to enforce. Interviews with field agents suggest that collectors try to evade these rules, filling sacks with small baobab on the bottom with larger baobab on top. This requires field agents to manually check sacks if they suspect they are stuffed with small fruit.

> *'It is very tough [to enforce the rules] they [collectors] try to cheat the rules every year. Lots of people were filling the sacks with small fruits. I say show me the fruit, empty the sacks. One example is in Cabermunde, there is a house where there are a lot of good baobab. The man had three wives and each wife had brought two tonnes and he was meant to receive 24,000 meticais. I went there with the money but before I gave him the money. I asked to look at the fruit and it was all small fruit. He told me that [a field agent] had been there and had approved everything. I said sorry, I cannot buy from you. You need to start again. You can call the authority, call*

[1] Source 1

[2] Source 14; source 26; Source 27

> *[the field agent] I will not buy from you. You have to be tough on these people or everyone will do it, everyone will break the rules'*[3]

Not only do collectors try to hide small fruits to sell to BPM, they also sell small fruit into the informal value chain[4] or keep it to eat themselves[5]. One collector stated, 'w*e sell the baobab that we can't sell to BPM to the Malawians. Small, already cracked or rotten. We sell to make extra money, but we do not sell lots to them*'[6]. This practice is confirmed by BPM field agents. '*When the informal buyers come, they make the communities not leave any fruit in the forest. People will collect the fruit that is not good enough for BPM and crack it and sell it to the Malawians*'[7]. One collector suggests that people continue to collect small baobab as it provides an important source of income early in the year, when people need money but before BPM have made any payments.

> *'Some people still think that cracking and selling pulp is better than selling whole fruit as you do not need to wait, and you get money immediately and little bits of money. It is hard to convince people to wait and get all the money at the same time. When I tell them to wait, they tell me they don't have money and they need the money today. The people that need the money will crack the small fruit and guard the large fruit for BPM'*[8].

Collectors voiced their disapproval of BPM's rules on small baobab, suggesting that they do not entirely understand the reasons behind them. '*They reject small baobab. I don't know why…We complain a lot about this. BPM used to buy everything, all sizes, but now they only buy the big baobabs…we can't throw them away, we have suffered to collect them'*[9]. Another collector suggested that she does not even bother to register with BPM because she mainly collects small fruits, '*it is annoying that BPM only accept the large fruits. I find mainly small fruits in the forest. How can I register if I have many small fruits and only a few large fruits*'[10].

Men's exclusion

BPM has rules around registration and participation with only women allowed to register to sell baobab. The entrepreneurs and staff enforce this rule as baobab sale was controlled by women before BPM

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[3] Source 27
[4] Source 21, 26, 27, 35, 47
[5] Source 44
[6] Source 35
[7] Source 26
[8] Source 33
[9] Source 24
[10] Source 19

started to work in the area and BPM wish to channel the economic benefits of their business to women, intending to contribute to their empowerment[11]. The entrepreneurs however feared that increasing the value of the baobab would incentivise men to seize control of the resource, a trend clearly seen in other value chains and documented by previous research (see chapter 4). BPM field staff suggest they must occasionally enforce this rule when men try to sell them baobab directly.

> *'No men have ever been registered as collectors. Sometimes men come and say they are representing their wife, but we reject them in this case. We know they will lie. Potentially he has stolen the baobab from his wife, so we say no, you know the rules your wife must come'*[12].

It seems well established that BPM do not buy baobab from men, but there is considerable uncertainty and confusion about the role of men in the value chain. Field staff explain that channelling the benefits of BPM's value chain to women is complicated as men cannot be completely excluded. Primarily because the communities are patriarchal, men are controlling but also play a pivotal role in supporting women to collect baobab.

> *'The collectors need to put it [baobab] on a gota [a raised platform]. The men should build the gota as women cannot cut the wood and build that thing. The women say they cannot build these things. This makes them partners. So, when we go to buy, and the lady also comes and says I have 20 sacks, the man will also come with a scotch [ox] cart. If we pay the women, we must not pay them on their own as the men have helped…I was buying baobab and a truck came from far away and we finished very late. The ladies said to us we cannot leave without the money. "My husband will say what were you doing out until this time, and you have not brought back money". They were begging us to pay them so that their husbands don't give them trouble…the women are afraid of their husbands and men have extreme control over their wives…So, men are involved and even if they say we do not want men to be involved they still come in and help. Our idea was not to remove men completely from the project*[13].

The household survey reveals that the collectors have interpreted rules around male involvement differently. '*BPM will not buy our baobab if they see that the men are helping*'[14]. To this collector, receiving

[11] Source 14, also see chapter 1
[12] Source 27
[13] Source 27
[14] Source 4

help from men contradicts BPM's rules and can be sanctioned through the rejection of their baobab. I followed up with the village leader about this interpretation. He confirmed it was not an isolated stance,

> *'When BPM first started, they told us that men can't help the women. He [the BPM field agent] said, if we see the men helping then we will remove your name from the book. This didn't happen. But I don't know if men are allowed to help now'*[15].

BPM therefore threatened collectors with exclusion if men help them in the collection process. However, this rule has never been enforced, which has led to uncertainty about whether men are permitted to help female collectors or not. Follow up interviews with field staff and collectors confirm men play an important role in helping collectors, and that women have been reluctant to talk about male involvement in baobab collection but are now beginning to talk openly about the help they receive[16]. There has been considerable confusion and blurring around the rules related to male involvement in BPM's value chain.

Registration and selling through proxies

For a woman to sell fruit to BPM, as previously discussed, they must attend an annual training and registration event conducted by a lead collector. This strict registration protocol is required primarily due to BPM's organic certification. For BPM's fruit to qualify as organic, collectors must conform to certain practices (e.g., not to collect fruit from areas where inorganic pesticides have been sprayed and leave small or cracked fruits). The training and registration events function as evidence that the baobab collectors have been adequately trained to guarantee an organic product that minimises environmental impact.

Field agents suggest there is some difficulty applying these rules and getting participants to register every year. Collectors seem keen to avoid attending training as they view it as a waste of time to go over rules and practices they already know.

> *'We have registered almost all the women in these villages I think, but some alternate. They only collect alternative years. They sold last year but don't sell the next. Then they will say they do not want to come for the training. They say, "oh no I went to the training a few years ago"…but when the collectors come [to the collection points to sell baobab]. They tell us their name. We consult the list. If they*

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[15]Source 42
[16] Source 15

are not on the list, then we do not buy…it happens every time. There are people that want to cheat. They try to use the names of their friends or mother'[17].

BPM's collectors bend these registration rules by selling baobab through proxies. That is, unregistered collectors sell their baobab through registered collectors, granting them access to BPM's market (and price premium) while allowing them to skip meetings and official training / registration processes. This seemingly occurs in two overlapping forms: within immediate family groups and outside household groups.

Selling through immediate family groups relates to households which use a single registered person within the household to sell baobab collected by multiple unregistered male and female family members.

> *'I was buying from a [registered] collector at her compound and each of the family there had their own gotas [piles of baobab]. One for the wife [registered collector], the husband, another wife and [older] kids had their own piles too. They had all been collecting it [baobab] separately, but they sold together through the collector. When I made the payment, they were all there and they shared the money out between them'*[18].

The idea that the family of registered collectors are heavily involved in baobab collection was evidenced by the experiences of other BPM field staff. *'We came to a collector with 5 tonnes, her husband and family must have been helping her'*[19]. Also by the entrepreneurs themselves. '*In some cases you have situations where the husbands are collecting more than the women*'[20]. Thus, some registered collectors are acting as proxies for their close family members. It was however difficult to confirm how widespread this behaviour was by talking to collectors alone, with most claiming that the collected and transported baobab alone[21].

As I became slightly better known in the communities, men and women spoke candidly about their role in BPM's baobab value chain and the practice of selling through proxies. One man told of how he helps his wife with multiple aspects of baobab collection. '*I help her [his wife]. I will make the gota (store), I find the baobab in the forest, and I help her carry the baobab. I also help her collect. I even carry the*

[17] Source 27
[18] Source 25
[19] Source 27
[20] Source 32
[21] Source 20, 24, 29, 30. Many spoke instead of how specific members would help them fulfill normal household or agricultural duties while they were out in the forest.

baobab on my head sometimes'[22]. A security guard in the community spoke of how he and his wife collected baobab together for the last two years and store it separately so they know how much money each should receive[23]. Another young man spoke of how he collects the baobab adjacent to his fields and how his mother acts as a proxy[24]. Moreover, the Regulo of the community described the changing role of men in baobab collection. '*Some men do collect Baobab. Men used to only help with the transport but now men will help their wives to collect. They can earn 10,000 [meticais] for baobab. This is more money than people can earn from peanuts'*[25].

Unregistered collectors also sell through proxies outside their immediate household. As the survey progressed, I entered an isolated corner of the community of Cabermunde where it became increasingly difficult to find a registered baobab collector. Several consecutive households did not contain one registered collector[26]. This was unusual as most households I had previously talked to had at least one registered collector. People living in this area provided a different view regarding how BPM functions in practice, talking openly about how they sell through proxies outside of their household, or have sold through proxies in the past[27].

> *'I sell my baobab through other [registered] people to BPM. Anyone that will take it'*[28].

> *'...only a small number of people are registered with BPM here, most people will sell through others. If you have someone you trust, then you can take your baobab to them. Then they will sell for you...most people that are registered live on the other side of the community. That is where the lead collectors live so it is easier to be registered there...but the money is passing through too many hands...they can ask for a sack [of baobab] to sell for me'*[29].

The costs associated with getting registered sellers to act as proxies varied. A registered collector can charge around 100 meticais (1.10 GBP) for acting as a proxy, the same rate as a day's labour in the

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[22] Source 24
[23] 'For the last two years I have been going to the forest to pick with [my wife] .... we store what we collect in different gotas [piles]...it is important to sperate [the baobab] so we know how much money we each get' – Source 28
[24] 'I collect the baobab close to my machamba. There are lots there. When I know BPM will arrive, I take it to the village...my mother will use her name and sell it.
[25] Source 42
[26] Source 41
[27] Source 11: 'I usually manage to sell some sacks through others to BPM. They say that you have sold the baobab through my name so you must pay. I paid 30 meticais'
[28] Source 2
[29] Source 1

fields[30]. Other respondents reported paying between 30[31] and up to 200 meticais to middlemen[32]. This rate seemingly varies depending on the amount of baobab and the relationship to between the two actors[33]

Respondents gave additional detail of the process involved in selling through proxies. As BPM normally make multiple trips to a village per year, unregistered collectors will transfer their baobab to registered collectors for them to sell when BPM returns for a second time[34]: *'How it works is, after registered people have sold their baobab [the] unregistered people will pass their baobab to the registered people. When BPM return then all is sold'*[35]. One collector however suggested this system can misfire, with unintended consequences for the registered collector: '*Last year my mother sold my baobab for me first [before she sold her own]. When she tried to sell her baobab after, BPM did not return. They said they had enough and didn't want any more'*[36].

Interviews with people in the isolated neighbourhood provide insight into the reasons why these individuals fail to register with BPM. Multiple collectors claimed they often miss meetings or registration as it occurs when they are living in the bush and tending to their fields[37].One unregistered collector said they had been rejected and did not try to register again as they would be begging or asking a favour: '*I have not written my name [to register] as I don't want to beg people to write my name…I wrote my name once and I wasn't selected…I don't want to ask for a favour'*[38]. Others indicated that poor communication is an issue, especially for those on the outskirts of the community, '*to get registered [for BPM] they will call us but the last time we tried we were late and told the registration was over. People miss things here on the edge of the community. We don't have good signal [phone] and not many people pass by'*[39]. That different people receive information in different ways and how this is impacted by community layout emerged as a theme in other interviews.

> *'Sometimes the lead collector goes to the community leader, and he will play the drums and invite people to a meeting at his house. Sometimes people go and sometimes not many people go. It is far for us, so we do not always go. It also depends on the time of year and what people are doing. Sometimes information*

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[30] Source 33
[31] Source 11
[32] Source 8
[33] Source 33
[34] Source 1,2,4
[35] Source 1
[36] Source 8
[37] Source 21, 30, 35
[38] Source 7
[39] Source 41

arrives late. The last time there was a meeting I was pounding maize when I found out there was a meeting at the last moment. I could not stop what I had started and had to continue with the maize. This is a problem here that information is delayed getting to us. People receive the information differently'[40]

Thus, the location of this neighbourhood relative to where the lead collector lives and where meetings occur is key to understanding difficulties with registrations, the motivations for selling through proxies and why BPM's rules around participation are flexed. In short, collectors are fed up with meetings that repeat the same rules every year, those living on the physical fringes are put off going to these meetings due to the additional distance, and information transfer can be poor.

Impacts of rule bending

The ramifications of the rule bending detailed above range from mild annoyances to knock-on impacts which run contrary to the social and environmental objectives of Micaia and BPM. In the following sections I focus on the impacts of selling through proxies as this system broke down in 2018 with profound impacts on rural livelihoods.

Expectation, decline of the informal market, and drought

Three contextual factors are central to understanding how the informal system of selling through proxies broke down in Cabermunde and the problems it created. These factors interacted to create confidence in BPM and the informal proxy system, increase dependence on BPM as the sole buyers of baobab, and increase dependence on baobab as a source of income. All of which help explain why the breakdown of this informal network had a significant impact.

Foremost, BPM set two important precedents in 2017 which set community expectations for 2018: that BPM would buy as much baobab as a community had to offer; and, that BPM would make multiple visits to the community. In 2017, a year before the informal system broke down. BPM purchased significant volumes from the communities across Guro and Tambara. Andrew suggests that a spike in demand from the international market accompanied with good cash flow allowed BPM to buy almost all the baobab its focal communities had to offer in 2017[41]. One community member in Cabermunde remembers, '*the year before they came and took all the malambe*'[42]. This created significant expectation

[40] Source 40
[41] Source 14
[42] Source 1

and collectors anticipated the same to happen the following year[43]. Logistically, BPM made multiple trips to Cabermunde in 2017 and, as with the expected volume, collectors expected BPM to make multiple visits in 2018.

The second factor relates to how informal buyers ceased operating or greatly reduced their activity in the villages where BPM were active. Multiple community members confirmed Malawians reduced activity. For example, 'w*e don't sell to the Malawian buyers anymore. They haven't come again [since BPM arrived]. We refused to sell to them, so they have not returned to our community*'[44]. It is clear that Malawian agents could not compete with BPM's price premiums and preferential practices.

> *'We used to sell cracked baobab to the Malawians but when BPM appeared we liked the price and that we could sell them whole fruit. The price from the Malawians was too low. People suffer to collect baobab…the past few years the Malawians have disappeared'*[45].

The repercussions of this are important as both registered and unregistered baobab collectors now had reduced access to the region's largest group of buyers. As previously discussed, some collectors were displeased with the reduced activity, citing various advantages of the informal market: the opportunity to sell baobab early in the season before BPM starts to buy, there much more consistent presence throughout the season, the lower standards and willingness to take small or already cracked or rotting fruit, and their lack of registration requirements.

> *'We are angry that BPM have stopped the Malawians coming here, but I can't do anything. What can I do? They [BPM] are making money'*[46].

Third, environmental conditions motivated people to collect more baobab in 2018 than they normally would. Multiple sources confirm that 2018 was a dry year with poor crop production. '*The rain was poor. Many people didn't produce enough corn to eat [to last the hungry season]*'[47]. These statements suggest that baobab collection and sale is an important *safety net* activity in Guro when agricultural production dips. '*The crops were poor last year so people wanted to go to the forest and collect Malambe'*[48]. I argue in the following section that these factors interacted with the breakdown of BPM's informal system to severely impact rural livelihoods.

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[43] Source 15
[44] Source 16
[45] Source 1
[46] Source 7
[47] Source 17
[48] Source 1

Breakdown of the informal system

In 2018, BPM experienced significant cash flow problems which limited the amount of baobab they could buy from each of the communities. Interviews with Andrew reveal, in response to these cashflow issues, BPM's strategy was to buy a small amount of baobab from every registered collector. This was intended to honour the commitment BPM had made to their focal communities, to spread their limited finances and leave no collector without receiving a cash payment[49]. BPM consequently bought only a single load of baobab from Cabermunde in 2018, deviating from the preceding campaign in terms of purchased volume and logistics. This, in turn, removed the access unregistered collectors to BPMs market: there was no opportunity for unregistered collectors to pass their baobab to proxies to sell on BPMs return.

Crucially, the people of Cabermunde, or at least part of the community, were not aware of this change in practice. Multiple interviewees talked of how they expected BPM to return following the initial visit in 2018**,** explicitly claiming that it was never clearly communicated that BPM would not return[50]. Moreover, multiple people suggested the lead collector repeatedly stated BPM would return[51]. BPM field staff strongly dispute there was any confusion and assert that they properly informed the lead collector they would not buy anymore baobab. Nevertheless, no matter the scenario, there has been a significant break in the chain of communication between BPM and its producers.

> *'The people that were left with their baobab started to complain, they didn't understand why their baobab wasn't bought. They blocked[52] us because they didn't say anything. 'We were waiting for them [BPM], we thought they were coming'[53].*

This breakdown in communication understandably affected people's expectations and behaviours. Interviews suggest that people kept their baobab in storage waiting for BPM's arrival. '*If they had told us we could have tried to sell the baobab elsewhere*'[54]. The unregistered collectors (who were yet to sell any of their baobab) therefore thought they would still get an opportunity to sell through proxies. This led the unregistered collectors to avoid seeking out alternative buyers for their fruit. When it ultimately became clear that BPM would not return, they started to search for the informal buyers. Unfortunately, it seems only some were successful in offloading their baobab to informal buyers at the end of the 2018 season. The presence of new, informal Mozambican buyers apparently allowed some to offload their

[49] Source 14
[50] Source 1,2,4,6,7,9
[51] Source 1; 'Every time we asked [the lead collector] she told us BPM would come'.
[52] I assume this means blocked plans.
[53] Source 4
[54] Source 4

baobab at low prices. Others report having their baobab rejected by informal buyers, '…*we tried to sell the left over malambe to the informal buyers, but they refused to buy as it had been sitting for a long time*'[55]. Others apparently found it difficult to locate informal buyers, attributing their elusiveness to both the reduced activity of Malawians in their area and the late stage of the season[56]. When the rains arrived in 2018 many collectors still had their baobab stored outside their homes, where it eventually decayed and rotted.

In sum, the people of Cabermunde had worked throughout the season to collect baobab for BPM based on the precedent of the previous year. In 2018, there was additional motivation for people to collect baobab due to the year's poor rains and dire maize harvest. Baobab therefore took on additional importance as a supplementary livelihood, intended to bridge the gap left in household maize stores. Many registered collectors managed to sell some baobab to BPM. However, due to BPMs truncated season, poor communication and the existence of this informal system, some collectors were denied an opportunity to sell any of their baobab to BPM. Those collectors expecting to sell through proxies, and registered collectors that had prioritised selling others baobab before their own, were left with their baobab when the season ended. The informal system of selling through proxies therefore broke down and a group of collectors were left with very little or zero cash income from baobab in 2018. As I discuss in the next section, many community members were angry and disappointed. Others however weathered severe negative impacts.

Community disappointment, anger and hunger

Multiple respondents in Cabermunde spoke of BPM's failure to buy baobab in 2018, and the impact it had on them or others. The magnitude of these impacts however seems to differ widely, from being mildly inconvenienced to financial shortfalls and the subsequent deployment of hunger mitigation strategies.

Foremost, when asked about what had happened during the previous year's baobab campaign, one of the most common themes related to the anger community members felt toward BPM for wasting their time[57]. Multiple respondents spoke of the significant efforts they had expended to collect baobab that had ultimately rotted outside their homes. They talked about how they had '*suffered*' to collect this baobab, walking long distances with heavy loads, collecting from dusk until dawn, and, for some, overnight stays in the forest. When discussing these events, the feeling of resentment was palpable[58].

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[55] Source 18
[56] Source 1, 4, 10, 19, 20
[57] Source 16, 34, 35, 36, 7, 10, 21,22
[58] Source 1, 23

One collector succinctly voiced his disappointment, *'I collected a lot of baobab that I ended up burning. I was very angry. We wasted time in the forest, all that time suffering'*[59].

The lead collector confirmed the broad anger and disappointment in her community.

> *'People were angry. They complained that they had to walk long distances to collect malambe, then they [BPM} don't come to buy. [They said] they waste our time... I was being hassled by people last year. They wanted to know what was going on with BPM. They were coming to my house to shout at me'*[60].

BPMs failure to buy had a knock-on effect, weakening the trust the community previously had in BPM. Multiple respondents spoke about how they had been demotivated to collect baobab the following year. An informal conversation with a community member while he was fixing his bicycle under a baobab tree illustrates this feeling of demotivation:

> *'I am becoming weak because of this business with baobab. I may stop collecting. It promised us money, but the money did not come'*[61].

This apparent demotivation was confirmed by other community members. '*This year we only collected few baobab because we thought the same thing would happen, that BPM wouldn't buy again*'[62]. It also left some in doubt over BPMs future in the community. '*We also thought that Micaia would not return to buy baobab at all this year, but Micaia came and told us they would buy everything*'[63].

Interviews with the lead collector and other registered collectors suggests this demotivation has been short lived. '*People complained last year they would never sell to BPM again, but this year they are selling. The price is good. They can't get better*'[64]. In sum, an impact of BPM's truncated campaign was that the communities felt significant anger, manifesting in threats to stop dealing with BPM, coupled with increasing uncertainty over BPMs future reliability. This anger, although evidently not yet forgotten by community members, has seemingly been allayed by BPM's subsequent performance during 2019's campaign.

> *'Last year we felt pain and we complained that we will not collect a lot of baobab this year as a lot rotted when BPM failed to arrive. Many people did not collect at all*

[59] Source 21
[60] Source 5
[61] Source 7
[62] Source 33
[63] Source 18
[64] Source 5

> *because bpm didn't come last year…These people started to collect again once they saw that BPM was buying again. This year we were happy [with BPM] as they bought all our baobab and next year we will collect more'*[65].

Community members spoke of the impacts of BPM's truncated 2018 campaign on them and others in their community. Many spoke about general impacts, claiming it had prevented them (or others) from executing a '*plan*' they envisaged for their income [66]. Others spoke more explicitly, detailing items they wanted to buy or actions they wanted to take with their forecasted earnings. For example, some spoke of wanting to buy household items. '*By not selling the baobab some people missed many things, people were meant to buy salt, soap, and food. People were complaining that they didn't have these things because of BPM*'[67]. One man spoke of how he was stopped from making home improvements. *'I wanted to buy chapas (corrugated roof tiles) for my house, but I couldn't. Because of BPM I have no-one to sell to. I was without money this year*[68]*'*. Others spoke of how they had plans to open new fields and expand their agricultural endeavour but had to postpone these activities until the following year. '*My plans stopped last year. I wanted to open a field for peanuts. I managed to do it this year, but I had to wait*'[69].

Others claimed that some had experienced more serious hardship. The lead collector spoke generally about how BPM's failure to buy compounded issues of food insecurity created by 2018's poor harvest. '*People suffered last year when BPM did not arrive. It was a bad year for rain. There was hunger. We were waiting for BPM. It [BPM not returning] made it worse*'[70]. Multiple respondents confirmed this position,

> *'BPM not arriving caused many problems. The crops were poor last year so people wanted [were motivated] to go and collect Malambe. When they [BPM did not arrive] our women were disappointed as they wanted to sell [to BPM] to buy food. Some people had big problems…people had hunger when BPM didn't buy'*[71].

Similarly,

> *'We were hungry last year. It was very bad for some. The rain was poor so many didn't produce enough corn to eat. People used different strategies to deal with it*

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[65] Source 23
[66] 'Many people had plans for that money that they couldn't continue'. – Source 36; '*We were planning on buying some things, I can't remember what, but we didn't manage to buy that year (2018)'*. – Source 38
[67] Source 4; Source 39, '*It did have an impact. I had things I wanted to buy but I couldn't buy them. I wanted to buy dishes, plates, clothes*.
[68] Source 7
[69] Source 41
[70] Source 5
[71] Source 1

[hunger]. Some people will sell animals, bulls or goats. Some people will go to neighbours and family and ask for food. Others will have money saved…people will help each other here'[72].

Discussion

The rule bending and informal access system exhibited in BPM's value chain illustrates how MBIs for conservation and development can be adapted and perform in unforeseen ways. Despite BPM's official registration system being designed as '*open to all*'[73], with as few barriers as possible, the rules and norms around participation were still subject to adaptation by local actors. An excluded group, eager to access BPM's price premium for baobab, sidestepped the registration processes by selling through proxies, creating informal norms of access. I argue this system has interacted with volatile demand to have significant effects.

This chapter contributes to two main debates in the literature. 1) Debates related to the how market-based instruments for conservation and development adapt through what processes and if these processes yield more resilient and better functioning institutions. 2) Debates on the impacts of MBIs and NTFP commercialisation, the conditions which allow them to succeed in their objectives and their appropriateness as tools for rural development and conservation.

Do MBIs adapt through bricolage?

Applying the lens of institutional bricolage provides a useful framework to unpack and understand the development of BPM's informal access system. If we conceptualise BPM as a bundle of rules and norms, I argue that the rules associated with participation have been through an observable process of alteration, a specific form of institutional bricolage. Alteration happens when introduced institutions are tweaked through improvisation and adaptation, involving the blending of formal and informal practices, to make them better fit with livelihoods or identity (Koning & Cleaver, 2012; Cleaver, 2017). In Guro unregistered baobab collectors faced the challenge of being excluded from BPM's value chain and a lack of alternative buyers for their produce. They undertook a necessary improvisation and innovation of daily practice, and, in turn, created a new and informal organisational arrangement of access to the value chain. The creation of this informal access system can be conceptualised as an adaptation to the rules and norms that dictate who can and cannot participate in the MBI. The formal rules however still

[72] Source 40

[73] From the perspective of BPM Micaia there are no barriers to those that want to register and sell to BPM.

exist and are maintained by the practice of BPM staff and collectors—by the conscious behaviour of the field staff through buying only from trained and registered buyers. Selling through proxies therefore represents an informal, alternative pathway to access BPM's value chain that runs parallel or overlaps with the formal pathway.

As well as a process of alteration, our case exhibits other processes and themes associated with critical institutionalism. First, we see how conscious and non-conscious action and moral rationalities play a role to shape the rules of MBIs. That is, what led individuals to access BPM through proxies has been influenced by the habituated practices and conventions (such as the ways of collecting baobab and where it is stored) and by overlapping social identities (the role of collectors as mothers, wives, farmers and members of specific neighbourhoods which means accessing registrations and trainings can be more or less difficult) and by views of external institutions (that the rules of conservation enterprise do not make sense, do not need to be strictly adhered to and can be flexed).

Second, the plurality of institutional components is clearly on display as BPM's boundary rules have been adapted to have two alternative pathways for collectors to sell their baobab, the formal and the informal. Third, there is evidence that these institutional pathways function intermittently for individuals, with collectors switching between the formal and informal pathways, using one pathway one year and the other the next year. Fourth, the adaptation of BPM's boundary rules has had both intended and unintended outcomes, a distinctive outcome of bricolage (Koning and Cleaver, 2012; 2015). The intended outcomes relate to the expansion of participation to those that are excluded from registration processes, whereas unintended consequences relate to those that were unable to sell any baobab and being excluded from Micaia's efforts to compensate collectors.

Fifth, BPM's case illustrates how institutional components of MBIs elude design or are not suited to local realities when they are first implemented. This is strongly evidenced as effort was made to design BPM in a way that was open to all women with as few barriers as possible. Yet, adjustment and experimentation were still needed by local actors to make the MBI better fit to local realities.

Sixth, we see how the processes of everyday life, imbued with power relations, systems of meaning, and the right ways of doing, all impact on BPM's institutional components, and make the hybridised arrangements coming from bricolage seem appropriate (Cleaver & Whaley, 2018). That is, the practice of selling through proxies is justified through multiple discourses derived from, for example, livelihoods (we are poor, we must find ways to sell our baobab at the best price); precedent (I would always sell baobab through others to Malawians); gendered roles and the patriarchy (I cannot have all my wives waste time with training; only one must go); and isolation or marginalisation (we never hear of these things because we live far from the centre of the community). Moreover, though our entrepreneurs and

BPM staff seemed largely unaware of these practices, they too offered justifications (hence legitimising the arrangement) due to their perceptions of scale (there can't be many people doing this) or community members as rational economic actors (it makes no sense for people to sell through a proxy, it costs money). Considering how the process of BPM's adaptation aligns with critical institutionalism, it seems clear that MBIs for conservation and development can and do adjust their norms and practices through processes of institutional bricolage.

Geography, marginalisation and selection processes

For BPM's case, I did not find clear examples of powerful community members intervening to influence the participation rules of BPM (unlike the example of gender norms in the previous chapter). Nevertheless, I suggest that the case provides an interesting example of how power influences MBI adaptation, illustrating how societal patterns of marginalisation contribute to, and are recreated by, bricolage.

Collectors using the informal access arrangements do so partially due to the location of their households. Those reporting selling through proxies mainly lived on the outskirts of Cabermunde where the opportunity costs of attending various trainings, meetings and registrations for BPM are relatively high compared to those that live adjacent to where these events take place – normally at a central point in the community. These families apparently experience frequent miscommunications about development projects due to a lack of phone signal and dependence on inconsistent word of mouth transfer[74]. Consequently, they do not receive all the information about BPM's key events (registrations, calls to gather baobab, buying campaigns, trainings), sometimes learning about events at the last moment. I speculate that these patterns interact with BPM's intervention, creating a feedback loop which compounds their marginalisation. That is, the less powerful (those living on the fringes) become dependent on the relatively more powerful (the centrally located, officially registered and better-informed actors) and must pay them to access BPM's preferential market.

The impact of MBIs and the role of expectation and accountability

This chapter contributes to debates about the impact of MBIs and enterprises on rural communities. As previously discussed, there has been much work that criticises the impacts of MBIs for conservation and development, from green washing to negative social impacts on rural communities (Holmes & Cavanagh, 2016; Dempsey, 2016; Fletcher, 2020).

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[74] This is an issue I observed in several communities with some communities relying on primary school children, who travel to the village centre on a more frequent basis than some adults, to relay key messages to their parents by word of mouth.

This case study provides an example of how erratic demand interacts with expectations and bricolaged practices of MBIs to negatively impact on rural producers. When demand dipped in 2018, collectors had no alternative place to sell their baobab. Collectors were left without the level of supplementary income they anticipated. This had different consequences for different people, with the worst affected deploying strategies to cope during the hungry season. People consequently lost trust in BPM's formal market and were demotivated to collect baobab for BPM the following season. Nevertheless, this animosity was short-lived.

The complementarity of Informal and formal markets to rural livelihoods

This case demonstrates positive and negative impacts of formalising trade and economic activity to rural people. This case study provides an interesting example of how the characteristics of formal and informal markets for baobab reinforce livelihoods in different ways, and the potential disadvantages of each. The advantages of BPM to rural producers is that it buys baobab at a high price and as whole fruit (requiring less labour); whereas the Malawian value chain takes small and low quality fruit, collectors do not have to attend training, the agents are present earlier in the season and for longer, and they trade directly for essential household items which some collectors prefer. The price premium BPM pays clearly benefits its communities and is transforming livelihoods (see chapter 6), but our case potentially indicates how a stable and flexible informal market can be replaced by more temperamental formal market. It is well established how NTFP collection and trade can act as safety nets for rural communities (Shackleton & Shackleton, 2005; Paumgarten 2005; Shackleton et al., 2011b). There is some indication that formalising markets for baobab has removed its ability to function as a safety net and created short periods of enhanced impoverishment. A more rigorous comparison of the formal and informal value chains is required to draw normative conclusions about the impacts of formalisation of the baobab value chain. Nevertheless, social entrepreneurs interested in protecting and enhancing rural livelihoods should be aware that formal markets may not be superior to informal markets in every way. Even '*exploitative*' informal markets have valuable characteristics which enhance and match rural livelihoods in ways formal markets potentially cannot.

Conclusion

I conclude that MBIs for conservation and development adapt through processes of institutional bricolage when exposed to realities in rural Mozambique. When local people can tinker with how these tools work and then this creates pragmatic adaptations suited to local needs, specifically the marginalised that find it more difficult to access MBIs due to their geography and social status.

Concomitantly this can establish practices (largely invisible and) incongruous with the wider objectives of the MBI and lead to unintended impacts.

10. Discussion

By providing an in-depth case study of the impacts of MBIs and the processes associated with how entrepreneurs navigate their institutional environment, the findings of this study are relevant to multiple areas of research linked to MBIs for conservation and development, NTFPs, and socio-environmental entrepreneurship. This research follows a trend in applying business frameworks to understand the internal workings of hybrid business models and how they interact with the external environment in the global South. It answers calls to use ethnographically inspired and critical institutional framework to provide a better understanding of MBIs and how they adapt in the field and behave in unintended ways (van Hecken et al., 2015). It appeals to the social entrepreneurship literature by providing a discussion on entrepreneurial intervention resulting in socio-economic change, specifically by answering calls to provide case studies that explore social entrepreneurship in developing countries and its role in enhancing women's empowerment (Agrawal et al., 2021).

I wish to examine three main contributions of this thesis:

1) debates on approaches to conservation and development, specifically MBIs/NTFP commercialisation and their potential to address poverty and conservation in the global South. Part of the study's value is that it provides local voices and interpretations, which are relatively rare in the NTFP literature (as called for by Shackleton & Pullanikkatil, 2019).

2) debates on how social and environmental entrepreneurs overcome or navigate institutional challenges (Rivera-Santos et al., 2015). Specifically the role and interaction between entrepreneurial and institutional bricolage in navigating impediments and how this applies to conservation and development settings.

3) debates on the use of entrepreneurship as an appropriate lens to apply to conservation. By doing so I hope to provide a contribution to recent discussions on professionalisation in conservation, (see Appleton et al., 2021), and debates on appropriate models of innovation in the global South (Jiménez & Roberts, 2019)

Chapter summaries

Chapter 5 explored the impact of honey commercialisation on rural households across four communities in Chimanimani, using quantitative and qualitative data. I identify three groups of beekeepers: specialist / high earners; negligible income; and small but highly valued income. For the small number of high earners, MHC's value chain has been transformative, allowing them to invest in assets. There are a significant group of negligible earners that have failed to earn any consistent

income and have become largely disillusioned with beekeeping. These individuals suggest they have had bad luck or do not have the *spirit of honey* on their side. Most beekeepers, however, receive small incomes (median payment of 23 USD per year in one of the most productive communities) which they highly value. Many in this group spoke passionately about the impact of this money, stressing the importance of these small incomes, contrasting with the modest incomes and indicating a significant impact on poverty mitigation. Part of the value to local people relates to the characteristics of beekeeping and its market, e.g., it is accessible, consistent, low effort and compatible with other livelihoods. There is evidence that these small contributions have reached some of the most vulnerable in the communities, allowing more elderly people an opportunity to earn a source of income, providing income for widows, and helping those that experience shortfalls through the hungry season. On the other hand, there is evidence of elite capture and exclusion, with aspiring beekeepers waiting multiple years for beehives and numerous complaints about the skewed nature of equipment distributions in favour of the better connected, '*people give to their friends here'*. Asking beekeepers to speculate about what would happen if Micaia stopped working in their community was met with both optimism and pessimism. Many suggested beekeeping would continue and that they would find a way to sell their honey, whereas others suggested it would be impossible for them to coordinate in the same way which would inevitably result in a loss of market access. An important finding is that many people in Chimanimani agree that other conservation and development interventions have had little tangible benefit to peoples' livelihoods. In this context of ineffectual development projects, the importance of the cash received from beekeeping is likely amplified, potentially causing people to exaggerate the positive impact of beekeeping on their lives due to fears that negative reviews might lead to the activity's removal.

Chapter 6 explored the impact of baobab commercialisation on rural households across two communities in Guro, analysing local perceptions to better understand how NTFP commercialisation and social entrepreneurship are perceived by their beneficiaries. The study reveals that baobab has been through two stages of commercialisation in the area: the first when informal buyers established an informal international value chain, supplying Malawi; the second when BPM and Micaia established an international value chain supplying Europe. Local perceptions of the value of baobab have changed in step with these phases of commercialisations, baobab was '*just some fruit*' used to make porridge for children or eaten in times of hunger, or something women could exchange for small bits of money or household items. Now, it is a highly valued resource providing an important source of supplementary income. Although selling baobab to BPM remains a supplementary form of income, the collectors suggest the current baobab trade is superior in many ways. It is worth more money than selling crops or livestock. It is 'easier' foraging for baobab than working in the fields. It is harder for husbands to control the money female collectors earn. It is more reliable than crops which can fail due

to drought, and it has allowed collectors to invest in a variety of assets they could not previously afford, or reinforce other livelihoods (e.g., by clearing or opening new fields). Importantly, not everyone has welcomed the changes that formalisation has brought, citing difficulty of access and a lack of flexibility in BPM's formal market.

Chapter 7 explored entrepreneurial agency behind these two enterprises, and broadly aimed to unpack how the focal entrepreneurs navigated their institutional environment to establish their social enterprises catering to national and international markets. The chapter first investigated how the focal entrepreneurs mobilised financial resources before exploring their experiences of resource limitations. This chapter confirms that central Mozambique was an unsupportive environment for formal NTFP commercialisation, evidenced by the complicated economic, political and socio-cultural environments. To combat the poor economic environment, our entrepreneurs have been adept resource seekers and bricoleurs, capitalising on their experiences in the development sector to secure diverse funding to support their innovations where few others are doing so. A pivotal point for the development and growth of the businesses came after the entrepreneurs secured a working capital fund from one donor, a type of funding donors do not commonly offer. This chapter provides evidence that there are misalignments between the types of funds available from donors and the funds that entrepreneurs need, which could explain limited activity of social and environmental entrepreneurs in the area.

Despite Micaia's successful mobilisation of resources from the donor sector, they have extensively deployed processes of entrepreneurial bricolage, making do with the resources at hand to solve problems or to endure lean times. I argue that the formal regulatory processes for baobab and honey are '*light touch*', suggesting an institutional void regarding the governance of these resources in Mozambique, and providing an opportunity for the entrepreneurs to shape the governance of the value chain. Informal governance processes associated with corruption have however been a challenge for the entrepreneurs. The most apparent areas of entrepreneurial bricolage related to how our entrepreneurs made do with a shortage of the labour and skills they deemed important for their businesses to prosper. Micaia has constantly reworked how it uses labour, not only due to resource limitations but to find configurations that deliver more value to rural communities and build trust, even if these configurations are less efficient economically. Skills shortages have commonly been filled by the entrepreneurs. The hybrid structure of the organisation plays an important role in facilitating bricolage in the businesses, representing a pool of resources that can be drawn on when challenges arise.

Chapter 8 sought to explore a different form of entrepreneurial agency, investigating how our entrepreneurs adjust or tinker with external institutions to remove impediments to their social or environmental goals. Specifically, how the entrepreneurs challenged gender norms preventing

women’s participation in beekeeping. When our entrepreneurs first became involved in the honey business, female inclusion was not their priority as they were more concerned with establishing a functioning supply chain. This changed when their early attempts to push for female inclusion resulted in superficial female participation. Our entrepreneurs’ strategies to challenge gender norms were diverse, championing female beekeepers, using other female role models in position of power, creating female only spaces, designing hybrid arrangements and targeting female headed households. I find that the resistance to female inclusion was widespread across Chimanimani as men asserted traditional gender roles to keep control of the resource, but resistance was also heterogeneous and dynamic with communities presenting differing levels of contest. Applying the lens of bricolage/critical institutionalism at the community level reveals three processes of bricolage at play. Some of the focal communities have rejected Micaia’s attempts to alter norms around gender with men maintaining control and their wives and using them as vehicles to access equipment. Other communities have seemingly embraced female beekeeping, as it already aligned with norms and beliefs about women working and earning money. Whereas other communities have seemingly bricolaged unique arrangements or compromises of institutional components, where it is acceptable for some women to keep bees (widows and female headed households) or where women can own beehives but are not allowed to do the physical work, relying on men to maintain their hives. Our entrepreneurs’ agency and strategy, intended to remove barriers to female inclusion, has interacted with other factors contributing to norm heterogeneity at the local level and has consequently delivered varied outcomes when it comes to women’s empowerment.

The final data chapter explores how MBIs for conservation and development are reshaped by external actors through rule bending or flexing, with a focus on rules around participation. The chapter first reviews the two value chains for baobab active in Guro. The study finds three ways in which the rules associated with BPM are flexed by collectors and local actors, related to the size of fruits, male participation in the value chain, and official registration processes. The chapter focuses on how collectors sell through proxies, either because they miss registration events or purposely avoid ‘repetitive’ registration processes. This informal system of selling through proxies however broke down in 2018 with unintended consequences. Cash flow problems at BPM meant they only made limited trips to Cabermunde. This did not align with local expectations and the precedent that BPM set during their previous campaign, when BPM made multiple trips and bought all the baobab the community could harvest. Poor communication between BPM and the communities exacerbated the problem; communities thought BPM would still return late in the season. As BPM had outcompeted the alternative value chain, collectors struggled to sell their product. The outcome was collectors expecting to sell through proxies when BPM returned did not sell any of their baobab. This in turn led to dip in expected supplementary incomes, with impacts ranging from inconvenience to having to

deploy coping strategies to survive lean times, e.g. borrowing from neighbours against the following harvest, using savings or selling livestock. This chapter highlights the impacts commercialisation and market fluctuations can have on rural collectors, and how these fluctuations interact with the realities of MB rule bending and adaptation on the ground. I argue that local actors have reconfigured components of this enterprises through institutional bricolage, creating an informal, alternative way to access BPM that fits in better with their livelihoods. This contributes to institutional thickness of the MBI but leads to unintended consequences, concomitantly jeopardising some of the goals of the instrument while potentially reinforcing patterns of geographical marginalisation.

The potential of NTFPs, MBIs and the importance of entrepreneurship to the conservation and development sector

The debates around the impact and potential of entrepreneurship, MBIs and NTFPs to deliver social and environmental benefits are convoluted. There has been much work that highlights the ineffectiveness or negative impacts of market-based instruments in general, from green washing to negative social impacts on rural communities (Holmes & Cavanagh, 2016; Dempsey, 2016; Fletcher, 2020). Like other MBIs, the potential of NTFPs to deliver benefits in terms of poverty alleviation and conservation has been extensively questioned and critiqued. For example, Belcher & Schreckenberg (2007) warned that benefits of NTFP commercialisation are difficult to realise as commercialisation is highly challenging compared to other activities, necessitating a long-term and multidisciplinary approach incorporating technical and social support coupled with an understanding of markets. It seems a substantial body of opinion suggests NTFPs are incapable of providing a pathway out of poverty for many of the rural poor (Angelsen et al 2014; Shackleton & Pullanikkatil, 2019).

Yet, the MBIs I focused on were framed by multiple people and communities as the only interventions making an appreciable difference to the poverty they knew. This was surprising considering that the focal areas of Chimanimani and Guro have been the focus of substantial conservation and development funding from a myriad of international and national organisations. People repeatedly spoke of how conservation and development funding has been largely ineffective, how NGOs are all talk, subjecting rural people to lengthy meetings that rarely lead to tangible benefits. Every community provided multiple examples of where NGOs had promised activities and benefits that never materialised. These included eco-lodges that were never built, seed distributions that never took place, aid deliveries that were a third of what was apparently promised.

People are therefore widely disillusioned with NGO or state-led meetings and projects. Many local people resist or refuse meetings with NGOs until they are clear that benefits exist. Some communities

have become increasingly direct about asking, *what is in it for us*? Understandably, people in the rural communities of Chimanimani and Guro do not want to attend NGO meetings when they have little faith they will see any form of benefit. Yet, people remain hopeful (and fearful) that the next meeting may deliver significant, or at least some, benefits. This weary hope interacts and reinforces local patterns of marginalisation within communities. Those with high opportunity costs of attending meetings, will be even less likely to attend meetings with little or inconsistent benefits. This situation highlights how participation in development can be 'tyrannical', requiring extensive local agency but seldom providing any benefits (Kothari & Cooke, 2001). The long list of ineffective interventions provided by the communities I spoke to uncomfortably parallels my own, early-career observations of the conservation and development sector (Method, Conceptual Framework and Research Questions 3).

Previous work by Virtanen (2020) highlights the weakness of previous development projects in Chimanimani. I find that local perceptions in 2019 aligned with Virtanen's (2020) conclusions, 10 years after their study's data collection. People were generally confused about the performance of development projects and interventions. Many blamed corruption, others blame the political environment. I personally witnessed the alarming politicisation of emergency aid funding first hand following cyclone Idai when a representative of Frelimo questioned why they should help communities that vote for the opposition.

Thus, part of understanding beekeeping and baobab's impact, and the worth of entrepreneurship to conservation and development, is relative to this surrounding legacy of ineffectual and highly politicised development projects and initiatives. Shackleton & Pullanikkatil (2019) suggests that NTFP commercialisation is unlikely to lift large amounts of people out of poverty but highlight that no single intervention will and there is a need to facilitate a suite of complimentary interventions. Micaia's case provides evidence that NTFP commercialisation, a form of direct market MBI (Pirard, 2012), has been the most effective externally led poverty alleviation tool among a suite of large-scale initiatives in central Mozambique. Considering the qualitative data of this study, the importance of these interventions to local people is clear: to a minority group it has provided significant wealth; to a large group it has provided small amounts of additional income that are highly valued. I agree that NTFP commercialisation should be viewed as one of a suite of measures that can contribute to poverty alleviation and recognised in national plans, but I underscore, in some contexts such as central Mozambique, it is the only measure seemingly capable of having any impact at all.

Despite the comparative success of Micaia's MBIs, this study provides evidence of the negative impacts and paradoxes that can be created by MBIs for development and conservation, and calls into question their potential to alleviate poverty and incentivise institutional change. The most severe impact detected related to the collapse of the baobab market in 2018, which left communities without

their anticipated level of supplementary income, unintentionally exposing a small proportion of collectors to increased hardship, requiring some people to deploy coping strategies (borrowing, relying on relatives, savings) to make it through the hungry season. Collectors interviewed in Cabermunde voiced their disappointment at the collapse in the market. The impacts were nevertheless more severe for some than others, and in the eyes of the communities, BPM's overall contribution to local livelihoods over multiple years has balanced the negative impact of the collapse. This does not hold for all individuals, with multiple collectors indicating they were demotivated or gave up collecting baobab for BPM following the collapse as they had little faith BPM would return. Nevertheless, the majority of the people interviewed for this study continue to engage with BPM and would rather enjoy the prosperity these markets bring and tolerate bouts of volatility than stay continuously poor.

> *'Last year we felt pain and we complained that we will not collect a lot of baobab this year [2019] as a lot rotted when BPM failed to arrive [2018]. Many people did not collect at all because BPM didn't come last year…These people started to collect again once they saw that BPM was buying again. This year we were happy [with BPM] as they bought all our baobab and next year we will collect more'*[75].

The collapse in demand for baobab highlights what can go wrong with entrepreneurship and markets for conservation and development, specifically when a permanent, pervasive and lower paying local market is replaced by a more temporary, limited and higher paying international market. I argue that BPM's case demonstrates how connecting people to direct markets and increasing their productive capacity can have positive impacts on wellbeing (as argued by Karani, 2017) but, at the same time, can outcompete local entrepreneurship while creating dependencies. This ties peoples' wellbeing to the volatile markets which can ultimately leave them vulnerable to exogenous shocks (as has occurred with ecotourism, see Mitchell and Ashley, 2010).

Second, this study provides evidence that the capabilities of MBIs to create significant institutional change is limited. MHC and its honey market has contributed to a slow shift in gender norms and women's empowerment, with beekeeping increasingly accepted as an activity for women across the communities of Chimanimani. Women's participation however remains contested, with participation rates and honey production limited. MHC's case illustrates how women's interactions with entrepreneurship and MBIs are significantly limited by sociocultural values, norms, and traditions (Ojediran & Anderson 2020), even when additional strategies to increase participation are deployed.

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[75] Source 23

Third, in the case of beekeeping in Chimanimani, there is some evidence that the benefits of the honey market are accruing asymmetrically to those with power over equipment distributions in communities, allowing them to keep more hives for themselves and their networks and, in turn, produce more honey and increase their share of the money paid to communities. Although more research needs to be conducted on this topic in Chimanmani and Guro, I argue this adds evidence that entrepreneurial / market-based interventions for conservation can exacerbate social difference through elite capture (see To et al. 2012; Benjaminsen et al. 2013; Cavanagh and Benjaminsen 2015) than others interventions can.

These three findings illustrate some key limitations of entrepreneurship and MBIs as tools for conservation and development, suggesting practitioners must be careful how they design and deploy these interventions. The type of issues detected suggest there is a need for these interventions to be implemented with accompanying transparency and accountability structures; a need to guard against high levels of dependency on single markets, especially if it draws significant time away from mainstay agriculture; a need to maintain awareness of the impacts of interventions on local entrepreneurship and markets; and a need for contingency plans to counteract unintended impacts. That is not to say that Micaia did not have these structures in place. They clearly exercise accountability and liability towards communities and deploy contingency plans when negative impacts are detected (evidenced by their apology and compensation given to communities for the failure to buy). They unfortunately did not detect the problem sooner due to reconfigured practices of BPM (selling through proxies) and reasons discussed in Chapter 9. If MBIs can be designed and implemented with consistently functioning and adequately sensitive accountability structures in place, this could help avoid severe negative impacts.

Considering the positive and negative impacts of Micaia's interventions, I argue that entrepreneurship and MBIs are important tools to alleviate poverty and advance the goals of the conservation sector, but that they are double edged and there is a need for caution and acknowledgement of their limitations. My research concords with those calling for more innovation and experimentation (Harris and Nelson, 2016) in the sector. Conservation needs more willing entrepreneurs capable of creating MBIs that extend markets into rural communities to promote more resilient livelihoods. To avoid negative impacts they must, inter alia, build accountable relationships with communities, be aware of the potential negative impacts (e.g. volatility) and plan for ways in which these tools can fail and create misfortune. In central Mozambique, extending these markets into rural communities is not only what rural people want, but also the only intervention successfully shifting the needle on the poverty they know. If biodiversity conservation depends on ameliorating poverty, in central Mozambique, entrepreneurs seem to be more effective than state and NGO-led initiatives.

Toward understanding entrepreneurship in conservation

Yet, despite the importance of entrepreneurship to the conservation and development sector, the form of entrepreneurship I have observed is clearly hindered by a hostile entrepreneurial environment. Institutional impediments are often blamed for the failure or limited impact of social entrepreneurship, NTFP commercialisation and other MBIs, or for these initiatives behaving in unintended ways. This is reflected in literature on conservation enterprises that seeks to understand the conditions that are likely to achieve desired outcomes, and if some conditions are more important than others (e.g., Boshoven, Hill & Baker, 2021). Diverse literatures suggest that the institutional environments in the global South, where MBIs for conservation are most commonly implemented and experimented with, are relatively unpredictable and unsupportive relative to the global North. For example, Belcher & Schreckenberg (2007) suggest that NTFPs are often overlooked in many national policy environments, resulting in regulations that discriminate against the development of these businesses. Moreover, multiple studies demonstrate how local institutions act as barriers to PES initiatives behaving as intended (Osborne, 2011; McElwee et al., 2014; Shapiro-Garza, 2013).

My research suggest that entrepreneurs find the general institutional context in Mozambique challenging (Chapter 7). There are challenges across economic, sociocultural and political realms, with the issues faced by Andrew and Milagre ranging from a predatory banking sector, unscrupulous partners to poorly skilled staff. As Andrew and Milage said, '*nothing helps*'.

Nevertheless, the case studies provide empirical examples of how entrepreneurs use their skills and experience to navigate around a relatively unsupportive institutional environment to take their NTFP enterprises to national and international scale. It illustrates how entrepreneurs either work with, navigate around, or try and remove these institutional impediments. Part of understanding Micaia's success lies in their well-developed sector experience, social networks, key collaborations with commercial entrepreneurs, resource seeking skills, bricolage skills across multiple domains, significant intrinsic motivation combined with a willingness to bear opportunity costs.

Micaia's ability to overcome the hostile economic environment of Mozambique is partly due to their deft resource seeking, which has procured significant and varied forms of financial investment from an array of donors. Our entrepreneurs attributed their success in securing funding to their previous experiences and knowledge of the donor sector, coupled with a lack of competition for these funds in central Mozambique. Donors therefore play an essential role in funding social-environmental entrepreneurship, plugging the gap left by a generally hostile financial environment. Yet, my study highlights that donor funding does not precisely match the needs of social and environmental ventures. First, the establishment and achieving enterprise sustainability takes longer than typical 2, 3 or 5-year donor funding cycles associated with conservation and development projects (Boshoven, Hill

& Baker's 2021), requiring our entrepreneurs to secure multiple projects. Second, donor funds are more prescriptive than loans or rare unrestricted funding, e.g., some of Micaia's donor funds could be used to develop the value chain (for producer training or equipment or for certification processes) but not to develop the businesses (e.g. to pay salaries or as working capital). Thus, donors do not give entrepreneurs complete autonomy over these funds and consequently they cannot be spent on what is needed to develop MBIs for conservation and development. This study raises questions about the accessibility of these funds to nascent entrepreneurs as they only seem to be available to individuals with extensive resources—Andrew and Milagre are two individuals with extensive experience in the development sector and well developed national and international networks. As they put it, *they know where to look* for available funds and support. Considering the vital role of donor funds in helping entrepreneurs navigate institutional impediments, there is clearly a need to reassess how this money is accessed and distributed. If the aim is to maximise social and environmental entrepreneurship, donor funding needs to be available to nascent entrepreneurs, not only those with a wealth of development experience and the well connected, and it needs to be better tailored to the types of funding entrepreneurs need to grow their business, e.g., working capital. I therefore argue that donor funding is currently paradoxical for entrepreneurs, providing essential support but also hindering innovation.

The process of resource seeking of the focal entrepreneurs has combined with processes of entrepreneurial bricolage. I find that Andrew and Milagre have engaged in high levels of entrepreneurial bricolage relating to labour and skills. With BPM, for example, they have repeatedly experimented with how labour is used, switching from *in situ* processing, to *ex situ* processing, back to in situ processing by baobab collectors under controlled conditions. This experimentation has allowed BPM to find a way to maintain product quality while reducing processing costs, but also increasing the value to collectors by giving them more paid work. Through this process, BPM have responded to the needs of communities keen to undertake the processing, increased contact with collectors and, in turn, fostered trust. One of the most prominent areas of making do has been with skills, specifically leadership skills and personal values. The lack of autonomy associate with donor funds, specifically around salaries, means that our entrepreneurs have struggled to employ the staff they want. This has necessitated that they promote from within their organisation, taking chances on individuals that they were uncertain had the necessary skills or values for the role. This has often required the entrepreneurs to fill the gaps with their own labour and skills, e.g., by being available to coordinate or manage activities, complete reporting requirements. An interesting finding suggests that the formal regulatory environments for baobab and honey in Mozambique are not burdensome for our entrepreneurs. This runs contrary to Andrew and Milagre's assessment of other institutional domains (e.g., financial institutions) and entrepreneurship research that suggests that regulatory environments are often unfavourable (Desa, 2012), or that regulations can be onerous and a major impediment to

social ventures in the global South (Mzembe et al, 2019). Although this finding does align with previous NTFP research suggesting that NTFP governance arrangements can be fragile, weak or non-existent (Ingram, 2017). In sum, entrepreneurial bricolage has clearly been an important skill for the case study entrepreneurs, helping their innovation/businesses to develop when financial resources are scarce or limited.

Reflecting on the western origins of the theories I have applied, their relevance to Mozambique, and the influence this has had on the research. That I found these theories useful in understanding entrepreneurship and that some of the relationships defined by these theories seem to hold (e.g. the influence of social networks, sector experience, entrepreneurial bricolage) suggest there is something about the context in Mozambique that matches these theories or makes them relevant to Micaia's case, at least in part. The apparent applicability of these theories could stem from multiple factors associated with how the focal entrepreneurs have carried out their business. For example, Andrew Kingman is British, educated in the UK and is therefore highly influenced by Western ideas and practices, which he has likely transferred to the way Micaia have structured their businesses in Mozambique. The interaction and reliance of Micaia's businesses on development organisations and funding, acknowledged to be a key source of Western ideas (Gupta and Govindarajan, 1991), has also potentially influenced the structure of the businesses. Moreover, Micaia's reported lack of interaction and avoidance of informal governance structures is potentially significant for the applicability of these theories. Andrew and Milagre have endeavoured to keep their businesses formal, operating in line with regulations which potentially makes their entrepreneurship more knowable through Western theories based on businesses operating in the formal sector. If Andrew and Milagre had to interact and rely more on informal governance systems, this could have significantly altered the shape of their entrepreneurship, requiring different traits, skills and processes.

Entrepreneurial bricolage is potentially the best fitting theory to Micaia's case. I find that Andrew and Milagre have made extensive use of entrepreneurial bricolage. Despite being developed through observations of Western contexts, entrepreneurial bricolage process seems to be highly relevant to our entrepreneurs in central Mozambique due to the interplay of factors such as persistent resource limitations. The extent to which Andrew and Milagre engage in bricolage (faced with consistent resource limitations over multiple years requiring repeated bricolage across multiple domains) concords with findings that suggest entrepreneurs in emerging markets engage in bricolage at a higher frequency that those in developed economies (Simba et al., 2020).

The apparent fit of these theories does not mean they explain every aspect of entrepreneurship correctly or offer a complete understanding of the entrepreneurial process. Using theories based on Southern epistemologies, e.g. ubuntu, would potentially steer attention toward different concepts and

potentially offer better fitting explanations for the observed processes of entrepreneurship in Mozambique. Nevertheless, considering the apparent fit of Western theories used here and acknowledging alternative pathways to innovation, I suggest Micaia's entrepreneurship could also be hybridised or plural, informed by both western and southern ideas of entrepreneurship due to the influences discussed above and, e.g. through Milagre (a Mozambique national), influences of Mozambican staff, and interactions with communities and institutions. Exploring this interaction between Western and Southern ideas of entrepreneurship is important work which I leave to subsequent research.

Figure 17 provides a summary of the combination of attributes and extrinsic factors that I have observed as having significant influence on Micaia's process of entrepreneurship in central Mozambique. This list is not an exhaustive account of factors shaping / explaining the observed entrepreneurship, but those with the greatest influence in this case. By highlighting these factors I hope to provide contribution to recent discussions on professionalisation in conservation, the skills required within conservation enterprises and those that need to be fostered to ensure better outcomes (see Appleton et al., 2021). I hope those engaging in more complete theory building relating to entrepreneurship in the conservation sector consider these as potentially influential factors in future investigations.

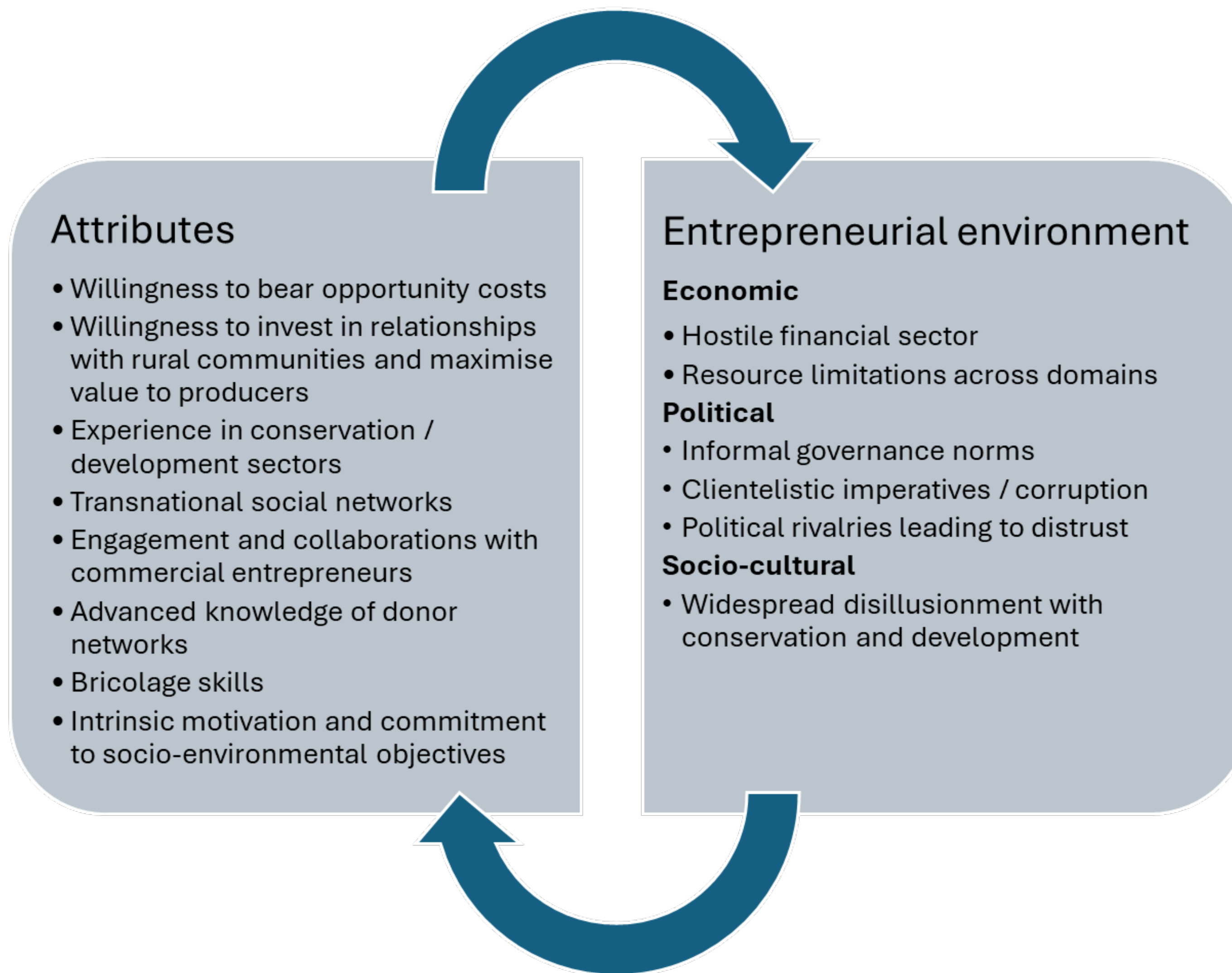

Figure 18. List of significant attributes and extrinsic factors influencing the entrepreneurship process observed in this study.

Institutional entrepreneurship

Alongside the traits, processes and experiences detailed above, I find that the socio-environmental goals of MBIs means that the commercial entrepreneurship that is fundamental to their creation is inextricably interwoven with processes of institutional entrepreneurship. I highlight this at two levels: the entrepreneurs' attempts to alter and engineer community level institutions 2) the efforts of external actors or participants to mould and adapt Micaia's MBIs to better suit their needs.

Of local level institutions

The most apparent example of our entrepreneur's institutional entrepreneurship relates to Andrew and Milagre's efforts to trigger change in gender norms in the honey value chain, which were inhibiting women's participation in the honey value chain and preventing empowerment. Micaia's response was to engage diverse strategies to try and win support and adapt beliefs around women's participation in beekeeping. These involved the use of role models (including Milagre herself), creating female only spaces, installing novel working arrangements, and targeting female headed households. The nature of these strategies is potentially important: some of these strategies were apparently meticulously planned, e.g., the use of exchanges and videos to present existing female beekeepers to the communities; others have been improvised and opportunistic, e.g. the targeting of female headed households. Thus, the agency of the entrepreneurs to create local-level institutional change was a mix of the highly strategic and the improvised.

These efforts seemingly had differing levels of success, triggering different processes of institutional bricolage in different communities. Micaia's introduced norms (female participation in beekeeping) have been incorporated into local settings to different degrees—some communities have rejected female participation outright (articulation), some have partially accepted female beekeepers for certain groups of women (aggregation) whereas other communities seemingly had little problem with allowing women to participate. This differing level of success demonstrates the heterogeneous nature of norms in rural communities and their influence on female access to entrepreneurial interventions (see Ojediran & Anderson, 2020).

I argue that efforts to change local norms, especially norms that are contested, which is typically the desire of conservation MBIs providing income to the rural poor, must also be accompanied by parallel efforts of institutional entrepreneurship. This can involve an array of strategies, but how such strategies will be received and the degree to which they actually cause norms to change will depend on an array of variables linking an individual community's history, connections to other communities, cities and previous experiences with development/conservation interventions. Entrepreneurs need to be adaptive, tailoring their efforts to engineer norms to a community context.

Of MBI structure and function

A key question in the literature relates to if institutional bricolage can be transformational in the sense of generating better functioning 'thick institutions' which endure and adapt over time (Cleaver & Koning, 2015). Therefore, I ask if institutional bricolage has generated a better functioning market-based instrument for development and governance of natural resources. Previous research has demonstrated how top-down efforts to create better institutions for NTFP governance, such as baobab, can have negative impacts such as increased corruption, distorted trade and reduced livelihood benefits (Wynberg et al., 2015). There is preoccupation in development linked literature with creating 'arrangements that work', often conceptualised as the practical hybrid arrangements that people create to get a job done and ensure meaning and social fit (Booth, 2012; Jones, 2015).

Crucially, in alignment with other 'wicked problems', the fairness of an institution, or if an institution 'functions better' than an alternative, depends on the stakeholder and their position (Venot 2011). That better functionality depends on perspective certainly seems to fit our case. On one hand, I argue that the creation of informal access arrangements is beneficial for both collectors and the enterprise. Participation is extended to those that would struggle to register, making the MBI more inclusive and spreading the benefits to marginalised people living on the outskirts of their communities. Intermediaries that sell baobab for others' financially gain. The informal system allows more baobab to flow into BPM, strengthening the business by making more product available to sell.

On the other hand, the creation of the informal access arrangement has negative consequences. The dip in cash flow interacted with the bricolaged arrangements leading to unexpected hardship in the communities. As previously argued, bricolaged arrangements potentially reinforce existing patterns of marginalisation, where the less powerful must pay the relatively powerful for access. Furthermore, the inclusion of unregistered, untrained collectors has potential ramifications for the social enterprise's formal objectives and standards. If unregistered collectors do not abide by the rules set by BPM, e.g., on leaving small fruits in the forest for animals or collecting baobab from areas sprayed with inorganic pesticides, then this could jeopardise their certification and, in turn, access to international markets. This case suggests tensions can emerge for social enterprises and MBIs exposed to institutional bricolage.

I argue that institutional bricolage paradoxically creates better performing, pragmatic MBIs for conservation and development, better suited to local needs, but concomitantly gives rise to practices (largely invisible and) incongruous with the wider objectives of the MBI. Future work could compare qualitative examinations of MBIs to better understand the degree to which bricolage occurs in different institutional components, e.g., boundary rules (who participates), and the impacts this has on creating 'thick', better functioning MBIs and for who. Considering the broad church that constitutes

MBIs and the confusing lexicon, sub-categories of MBIs could be compared, e.g., conservation enterprises, payments for ecosystem services and offsets.

Conclusion: entrepreneurship as a lens for conservation

The key conclusion of this thesis is that entrepreneurs are important to advance conservation goals as they connect rural people to markets (providing alternative livelihoods) and contribute to positive institutional change. However, the exploitation of entrepreneurial opportunities in the sector is ultimately hindered by a hostile environment, poorly structured support, and the institutional flexibility of MBIs (the ability of external and internal actors to reconfigure the rules and norms required to make MBIs function). These approaches also carry risks for participating local communities. I observe that MBIs that directly connect rural people to markets can increase their exposure to market volatility, which has caused hardship for some. Moreover, although this study provides evidence of positive institutional change associated with MBIs, the degree of change seems to be limited and depends on extra activities implemented in parallel to the MBI to promote change (at least in the case of gender norms).

Entrepreneurship in conservation and development contexts such as Mozambique is clearly challenging according to the focal entrepreneurs. It is complicated by the institutional environment, which requires a certain combination of skills, traits and experience to navigate. The application of entrepreneurial theory presented herein provides a partial explanation of what skills, traits and experiences lie behind the creation of successful MBIs for conservation in Mozambique. This is by no means a complete offering of what entrepreneurship looks like in the sector. Other case studies applying different theories will surely reveal different combinations of traits and will provide alternative models of how innovation unfolds. For example, examinations of different forms of MBIs for conservation (see Pirard 2012), more local forms of entrepreneurship (e.g. Jiménez & Roberts, 2019), different countries, or entrepreneurship that interacts more with the informal sector. Nevertheless, it is established that conservation practice requires a diverse set of skills, including entrepreneurship (Appleton et al., 2021), and my research unpacks what the entrepreneurial dimension looks like.

The negative impacts and limitations of entrepreneurship mean practitioners should deploy entrepreneurship and market-based instruments for conservation with caution. Entrepreneurial endeavours in conservation can learn lessons from the deep well of critical scholarship on entrepreneurship for development and potentially be designed to include measures capable of shielding vulnerable people from some known negative impacts, e.g. through adequate relationship

building between businesses and communities, transparency and accountability structures to detect negative impacts; promotion of livelihood diversification to guard against high levels of dependency on single markets; an awareness on the impacts of interventions on local entrepreneurship and markets; and the need for contingency plans to counteract unintended impacts. Nevertheless, I acknowledge the local communities want these markets, and, in the case of baobab, would not reject them even if they are occasionally volatile and cause bouts hardship.

My research leads me cautiously to call for entrepreneurship in the conservation sector to be better supported. The hostile environment and the combination of skills required to navigate it, means the bar is incredibly high, and there are good reasons that the conservation and development sector lacks entrepreneurship. Entrepreneurs like Andrew and Milagre clearly need significant support to succeed in their goals. I argue, where funding from international donors is essential to support entrepreneurship in the sector it is also inhibitory, untailored to the needs of entrepreneurs and MBIs. Making the sector more entrepreneurial requires a change in how this funding is allocated and monitored. Better supporting entrepreneurs with socio-environmental objectives may also require promoting collaborations with more commercially orientated entrepreneurs, but this, I have demonstrated, also carries risk and reward.

Finally, I conclude that entrepreneurship is an illuminating lens for the conservation sector and argue that conservation publications should pay more attention to it. I have found the entrepreneurial theories used in this thesis useful and with explanatory power when it comes to understanding how and why NTFP enterprises (direct market MBIs) in Mozambique adapt in the field, and why they succeed or not. Some elements of the theories have been illuminating and matched closely to what was observed (e.g. influence of different aspects of the entrepreneurial environment and traits as defined by Shane (2003)), whereas other aspects did not. I call for improved communication between conservation and entrepreneurship scholars, more studies of entrepreneurs operating in the sector and for the development of more cohesive application of entrepreneurship theory to conservation. A key area of future research should be the exploration and application of models and ideas from Southern epistemologies, their fit with entrepreneurship in conservation contexts, and their overlap or hybridisation with Western models.

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Appendix 1. Participant information sheet

You are being invited to take part in a research project relating to the impact of conservation and development initiatives. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part. Thank you for reading this.

1. What is the project's purpose?

This research is part of a doctoral research project conducted by William Mitchell at the university of Sheffield, United Kingdom. This research is investigating the impacts of conservation and development projects in rural Mozambique. Specifically, the impact of conservation and development projects on local communities and institutions associated with natural resource governance (e.g. the rules, social norms and beliefs people have about their environment).

I would be grateful if you would answer a few questions about your involvement with conservation and development projects, and the impacts of those projects. The interview lasts about 1 hour and you have the right to skip questions or withdraw at any time.

2. Why have I been chosen?

You have been chosen as for this research project as you have been identified as an individual that has a) been involved in implementing or shaping conservation and development projects in this area; or b) has knowledge of the impacts of conservation and development projects in this area.

3. Do I have to take part?

It is up to you to decide whether to take part. If you do decide to take part you will be given this information sheet to keep (and be asked to sign a consent form) and you can still withdraw at any time without any negative consequences. You do not have to give a reason. If you wish to withdraw from the research, please contact William Mitchell: email - wtmitchell1@sheffield.ac.uk; Tel - +258 849 046520.

4. What will happen to me if I take part? What do I have to do?

If you choose to participate in this research project, you will be required to give an hour of your time to participate in an interview. Follow-up interviews may be required if you have significant insight relating to focal conservation and development initiatives. Interviews will be conducted at a public location which is convenient for you. The interview will be recorded using a Dictaphone. The interview will be qualitative and questions will be open ended. The interview will therefore take the form of an open discussion.

The interview will focus on conservation and development initiatives you have helped to implement or been involved with. The main topics to be discussed include the creation of these initiatives; how these initiatives have been shaped by key individuals after implementation; and the impacts of these initiatives on local institutions relating to natural resource management (rules, norms and beliefs). You will be required to discuss your role in implementing or shaping the focal conservation and development initiatives.

5. What are the possible disadvantages and risks of taking part?

There are no significant foreseeable disadvantages associated with participation in the project.

6. What are the possible benefits of taking part?

Whilst there are no immediate benefits for those people participating in the project, it is hoped that this work will increase support and interest in conservation and development in your area.

7. Will my taking part in this project be kept confidential?

All the information that we collect about you during the course of the research will be kept strictly confidential and will only be accessible to members of the research team. You will not be directly identified (by name) in any reports or publications unless you have given your explicit consent for this. If you agree to us sharing the information you provide with other researchers (e.g. by making it available in a data archive) then your personal details will not be included unless you explicitly request this.

There is a possibility, due to the nature of the research, that the information you provide could be traced back to you by others that have knowledge of the events and circumstances you describe.

If you describe any activity that can be considered criminal or endangers public safety, then the researcher may be obliged to disclose this information to the authorities.

8. What is the legal basis for processing my personal data?

According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest' (Article 6(1)(e)). Further information can be found in the University's Privacy Notice https://www.sheffield.ac.uk/govern/data-protection/privacy/general

9. What will happen to the data collected, and the results of the research project?

Due to the nature of this research it is very likely that other researchers may find the data collected to be useful in answering future research questions. We will ask for your explicit consent for your data to be shared in this way.

10. Who is organising and funding the research?

The research is funded by the economic and social research council in the UK. The ESRC provides funding and support for research and training work in the social sciences and economics

Appendix 2. Consent Form

Formulário de consentimento do participante

Por favor, marque as caixas apropriadas	**Yes**	**No**
Participar do projecto		
Li e entendi a folha de informações do projeto ou o projeto foi totalmente explicado para mim. (Se você responder não a esta questão, por favor, não prossiga com este formulário de consentimento até que esteja plenamente ciente do que sua participação no projeto significará.)	☐	☐
Foi me concedida a oportunidade de fazer perguntas sobre o projecto.	☐	☐
Eu concordo em participar do projecto. Eu entendo que a minha participação no projecto incluirá tomar parte em uma entrevista relacionada com apicultura e os impactos de apicultura na minha communidade. Você será obrigado a falar com profundidade sobre o seu papel em apicultura.	☐	☐
Eu entendo que a minha participação é voluntária e que eu posso me afastar do estudo a qualquer momento / antes de 20/010/2019; Não tenho que explicar por que não quero mais participar e não haverá consequências adversas se eu decidir desistir.	☐	☐
Confirmo que tenho mais de 18 anos na época da pesquisa.	☐	☐
Como minhas informações serão usadas durante e depois do projecto		
Eu entendo que os meus detalhes pessoais, como nome, número de telefone , endereço e endereço electrónico, etc , não serão revelados para pessoas de fora do projecto.	☐	☐
Eu entendo e concordo que minhas palavras podem ser citadas em publicações, relatórios, páginas da web e outros resultados de pesquisa. Eu entendo que não serei nomeado nessas saídas, a menos que eu solicite isso especificamente	☐	☐
Eu entendo e concordo que outros pesquisadores autorizados terão acesso a esses dados somente se concordarem em preservar a confidencialidade das informações solicitadas neste formulário.	☐	☐
Eu entendo e concordo que outros pesquisadores autorizados podem usar meus dados em publicações, relatórios, páginas da Web e outros resultados de pesquisa, somente se eles concordarem em preservar a confidencialidade das informações conforme solicitado neste formulário.	☐	☐
Eu dou permissão para que o dados que forneço sejam depositados em repositórios de dados para serem usados em futuras pesquisas e aprendizado	☐	☐
So that the information you provide can be used legally by the researchers		
Concordo em atribuir os direitos autorais que possuo em qualquer material gerado como parte deste projecto para a University of Sheffield.	☐	☐

Name of participant: Signature Date

Name of Researcher: William Mitchell Signature Date

Project contact details for further information:

For general information, please contact the Principle investigator	For complaints, please contact the University of Sheffield
Name: William Mitchell Tel (Moz): +284 849 046 520 Email: wtmitchell1@sheffield.ac.uk	Name: Juan Miguel Kanai Email: Miguel.Kanai@Sheffield.ac.uk

Appendix 3. Interview questions – beekeepers

!Beekeeper_Survey_MedEntre_V006

Esta pesquisa é parte de um projeto de pesquisa de doutorado conduzido por William
Universidade de Sheffield, Reino Unido. Esta pesquisa está investigando os impactos d
conservação e desenvolvimento na zona rural de Moçambique. Especificamente, o imp
projetos de conservação e desenvolvimento nas comunidades locais. Este é um projet
independente, e nós não somos afiliados com qualquer governo ou organização de car
suas respostas serão mantidas anônimas. Eu ficaria muito grato se você responder a al
perguntas sobre o seu bem-estar. As informações que você fornecer serão mantidas e
confidenciais.

Questoes introdução

1. Date

yyyy-mm-dd hh:mm

2. Name of enquirer

- Hosia Mavato
- William Mitchell

3. Community name

4. Village name (nome de povoada)

6. Name of village (local) chief (regulo de povoada)

7. Sex

- ◯ Male
- ◯ Female

8. Você é um apicultor líder para o MHC?

- ◯ Sim
- ◯ Nao

9. Você é desta vila ou se moveu para cá?

- ◯ Local
- ◯ Migrant

10. Qual é o seu estado civil actual?

- ◯ CASADO/A
- ◯ SOLTEIRO/A
- ◯ UINÃOMARITAL
- ◯ SEPARADO/A OU DIVORCIADO/A
- ◯ VIÚVO/A

11. Quantos filhos/as voce tem?

12. Qual é a sua relação de parentesco com o/a chefe de agregado familiar?

- ◯ CHEFE de familia.
- ◯ ESPOSA./O
- ◯ PAI/MAE
- ◯ FILHA/O
- ◯ GENRO/NORA
- ◯ NETA/O
- ◯ IRMÃ/O
- ◯ OUTRO

13. Quantos adultos voce tem na sua agredado familiar?

____

14. Quantos filhos voce tem na sua agredado familiar?

____

Perfil de subsistência

15a. Quais são as principais maneiras pelas quais você contribuiu para sua família nos
anos?

- [ ] Pecuária - pastoral móvel (usando pastagens abertas)
- [ ] Pecuária - pastoral estacionária, em torno de casa
- [ ] Cultivo de cultivo - culturas de subsistência
- [ ] Cultivo que cultiva comercial / colheitas de dinheiro
- [ ] Cultura de prata de árvores para subsistência
- [ ] Cultura de prata de árvores para venda comercial
- [ ] Pesca comercialmente
- [ ] Coleção de produtos florestais
- [ ] Turismo
- [ ] Doméstico
- [ ] Apicultura
- [ ] Transporte
- [ ] O negócio
- [ ] Outro trabalho remunerado

15b. Quais são as mais importante maneiras pelas quais você contribuiu para sua famí
cinco anos? Por favor, classifique de mais para menos importante.

Classifique do mais importante ao menos importante

1st choice

○ Pecuária - pastoral móvel (usando pastagens abertas) ○ Pecuária - pastoral estacionária,
○ Cultivo de cultivo - culturas de subsistência ○ Cultivo que cultiva comercial / colheitas de
○ Cultura de prata de árvores para subsistência ○ Cultura de prata de árvores para venda c

Nao tem | Nao tem | Nao tem

3rd choice

Nao tem | Nao tem

Pecuária - pastoral móvel (usando pastagens abertas) | Pecuária - pastoral estacionária,
Cultivo de cultivo - culturas de subsistência | Cultivo que cultiva comercial / colheitas de
Cultura de prata de árvores para subsistência | Cultura de prata de árvores para venda c
Pesca comercialmente | Coleção de produtos florestais | Turismo

4th choice

Pecuária - pastoral móvel (usando pastagens abertas) | Pecuária - pastoral estacionária,
Cultivo de cultivo - culturas de subsistência | Cultivo que cultiva comercial / colheitas de
Cultura de prata de árvores para subsistência | Cultura de prata de árvores para venda c
Pesca comercialmente | Coleção de produtos florestais | Turismo

5th choice

Pecuária - pastoral móvel (usando pastagens abertas) | Pecuária - pastoral estacionária,
Cultivo de cultivo - culturas de subsistência | Cultivo que cultiva comercial / colheitas de
Cultura de prata de árvores para subsistência | Cultura de prata de árvores para venda c
Pesca comercialmente | Coleção de produtos florestais | Turismo

15c. Se a resposta anterior incluir outro trabalho numerado ou negocio, por favor expli aqui

Doméstico | Apicultura | Transporte
O negócio | Outro trabalho renumerado | Nao tem
Nao tem | Nao tem | Nao tem
Nao tem | Nao tem

Apicultura

16. Por quanto tempo você manteve abelhas.

Number of years

17. O que te motivou a começar a criar as abelhas?

18. Você começou a manter abelhas por causa dos projectos do MHC e Missio?

19. Quantas colmeias voce tem actualmente?	Quantas voce tem actualmente	Quantas das estão produz ano?
Colmeias tradicionais	*	
novas colmeias (e.g. kenya topbox)	*	

20. A que distância estão as suas colmeias?

21. Por que você colocou suas colmeias lá?

22. Quantas mel você vendeu ao MHC da última vez que comprou de você?

Volume de mel and price se possivel?

23. O que você fez com o dinheiro que você recebeu do MHC pela última vez?

24. Qual a importância da apicultura / venda de mel para você e sua família como meio subsistência no último ano?

- ◯ Muito importante
- ◯ Importante
- ◯ Moderadamente importante
- ◯ De pouco importancia
- ◯ Desimportantes

24b. Por que voce disse isto?

25. Nos últimos dez anos, alguma coisa mudou sobre como as pessoas geralmente fala apicultura como um meio de subsistência / uma maneira de ganhar dinheiro?

26a. Voce tem um contracto com MHC, quais sao regras que o contracto tem?

26b. Quais são as punições se você violar essas regras ou não fizer essas coisas?

27. Você tem apicultores femininos antes de MHC começou a trabalhar em sua comun

- ◯ Sim

27a. Por que a mulher não manter as abelhas antes MHC?

27c. O que modou? Por que mulheres podem manter albaelhas agora mas nao antes?

Satisfaction with Micaia and development projects

28. Como você recebe informações sobre as atividades da MICAIA?

Por exemplo, quando você tem uma reunião, quem vai informar-te sobre a reunião?

29. Você já descobriu que você perdeu ou não recebeu uma mensagem sobre as ativid ou MHC?

Por exemplo, sobre uma reunião, treinamento ou qualquer outra actividade?

30. Comparecimento às reuniões da MICAIA pode, por vezes, por pobres, por que você é?

31. Micaia e MHC tiveram problemas para comprar Mel em sua comunidade no ano pa causou problemas e que impacto isso teve para você e sua família?

descreva qual impacto isso teve

33. O que você acha que aconteceria se os projetos de MICAIA pararam em sua comun

34. Você está satisfeito ou insatisfeito com os projectos de apicultura e Micaia?

- Muito Insatisfeito
- Insatisfeito
- Nem sateisfeito ou satisfeito
- Sateisfeito
- Muito Sateisfeito

34b. Por favor, explique sua resposta.

Gestao Floresta

35. Aqui na sua communidade, o que regras TRADICIONAIS voce tem sobre iniciar fogo

Regras que foram feitas na sua comunidade

36. Aqui na sua communidade, o que regras NOVAs voce tem sobre voce tem sobre ini quimar?

Regras introduzidas de fora da Comunidade (Regras de governo nacional, zona de tampao)

38. Como você define um incêndio descontrolado ou queimada?

39. Como você define um incêndio controlado ou queimadura?

40. Como essas regras sobre fogo e mudaram nos últimos 10 anos?

41. Atualmente, você tem alguma preocupação com os recursos naturais de sua comu
de florestas, ou com o ambiente?

42a. Você acha que suas perguntas e preocupações sobre as floresta ou ambiente e re
ao redor da sua aldeia são ouvidas e postas em prática?

- ◯ Nao
- ◯ Escutado, mas nenhuma ação tomada
- ◯ Ouvido e algum esforço feito para incluir meus pontos de vista na decisão gerencial
- ◯ Ouvido e atuado em integralmente
- ◯ Nao tenho / ainda nao tinha preocupacoes sobre as florestas

42b. Por favor, forneça um exemplo por que voce acha que isso

43. Você está satisfeito com a forma como as florestas são geridas em torno de sua alc

- Muito Insatisfeito
- Insatisfeito
- Nem satisfeito nem insatisfeito
- Satisfeito
- Muito satisfeito

43b. Por favor, explique sua resposta

44. Voce tem um comite de gestao da recursos naturais na sua communidade?

- Sim
- Nao

Appendix 4 Interview questions – non-beekeepers

!Non_Beekeeper_Survey_MedEntre-V006

Esta pesquisa é parte de um projeto de pesquisa de doutorado conduzido por William
Universidade de Sheffield, Reino Unido. Esta pesquisa está investigando os impactos d
conservação e desenvolvimento na zona rural de Moçambique. Especificamente, o imp
projetos de conservação e desenvolvimento nas comunidades locais. Este é um projet
independente, e nós não somos afiliados com qualquer governo ou organização de ca
suas respostas serão mantidas anônimas. Eu ficaria muito grato se você responder a a
perguntas sobre o seu bem-estar. As informações que você fornecer serão mantidas e
confidenciais.

Questoes introdução

1. Date

yyyy-mm-dd hh:mm

2. Name of enquirer

- ◯ Hosia Mavato
- ◯ William Mitchell

3. Community name

3. Community name

- ◯ Mapunga
- ◯ Mussapa

5. Name of community chief

6. Name of village (local) chief

7. Sex

- Male
- Female

8. Você vende mel para o MHC actualmente?

- Sim
- Nao

9. Você é desta vila ou se moveu para cá?

- Local
- Migrant

10. Qual é o seu estado civil actual?

- CASADO/A
- SOLTEIRO/A
- UINÃOMARITAL
- SEPARADO/A OU DIVORCIADO/A
- VIÚVO/A

12. Qual é a sua relação de parentesco com o/a chefe de agregado familiar?

- ◯ CHEFE de familia.
- ◯ ESPOSA./O
- ◯ PAI/MAE
- ◯ FILHA/O
- ◯ GENRO/NORA
- ◯ NETA/O
- ◯ IRMÃ/O
- ◯ OUTRO

13. Quantas adultos voce tem na sua agredado familiar?

____

14. Quantos filhos voce tem na sua agredado familiar? (Menos de 18 anos)

____

Perfil de subsistência

15a. Quais são as principais maneiras pelas quais você contribuiu para sua família nos anos?

- [ ] Pecuária - pastoral móvel (usando pastagens abertas)
- [ ] Pecuária - pastoral estacionária, em torno de casa
- [ ] Cultivo de cultivo - culturas de subsistência
- [ ] Cultivo que cultiva comercial / colheitas de dinheiro
- [ ] Cultura de prata de árvores para subsistência
- [ ] Cultura de prata de árvores para venda comercial
- [ ] Pesca comercialmente
- [ ] Coleção de produtos florestais
- [ ] Turismo
- [ ] Doméstico
- [ ] Apicultura
- [ ] Transporte
- [ ] O negócio
- [ ] Outro trabalho remunerado

15b. Quais são as mais important maneiras pelas quais você contribuiu para sua famíli cinco anos? Por favor, classifique do mais importante ao menos importante?

Classifique do mais importante ao menos importantenos?

1st choice

- ◯ Pecuária - pastoral móvel (usando pastagens abertas)
- ◯ Pecuária - pastoral estacionária,
- ◯ Cultivo de cultivo - culturas de subsistência
- ◯ Cultivo que cultiva comercial / colheitas de
- ◯ Cultura de plantas de árvores para subsistência
- ◯ Cultura de platas de árvores para venc

Nao tem Nao tem Nao tem

3rd choice

Nao tem Nao tem Nao tem

Pecuária - pastoral móvel (usando pastagens abertas) Pecuária - pastoral estacionária,

Cultivo de cultivo - culturas de subsistência Cultivo que cultiva comercial / colheitas de

Cultura de plantas de árvores para subsistência Cultura de platas de árvores para venc

Pesca comercialmente Coleção de produtos florestais Turismo

4th choice

Pecuária - pastoral móvel (usando pastagens abertas) Pecuária - pastoral estacionária,

Cultivo de cultivo - culturas de subsistência Cultivo que cultiva comercial / colheitas de

Cultura de plantas de árvores para subsistência Cultura de platas de árvores para venc

Pesca comercialmente Coleção de produtos florestais Turismo

5th choice

Pecuária - pastoral móvel (usando pastagens abertas) Pecuária - pastoral estacionária,

Cultivo de cultivo - culturas de subsistência Cultivo que cultiva comercial / colheitas de

Cultura de plantas de árvores para subsistência Cultura de platas de árvores para venc

Pesca comercialmente Coleção de produtos florestais Turismo

15b. Se a resposta anterior incluir outro trabalho numerado ou negocio, por favor expl aqui

Doméstico Apicultura Transporte

O negócio Outro trabalho remunerado Outro trabalho

Nao tem Nao tem Nao tem

Nao tem Nao tem Nao tem

Participação em MHC e apicultura?

16. Existem atividades de subsistência ou projectos em sua comunidade que você gost começar a fazer, mas você não faz no momento?

- Sim
- Nao

16b. Se sim, quais atividades de subsistência ou projectos você quer começar?

17. Você quer comecar a manter abelhas?

- Sim
- Nao

18. Você já teve a oportunidade de participar de projetos de apicultura ou receber equ
apicultura no passado?

- Sim
- Nao

18b. Se sim, por que você não participa da apicultura agora?

18c. Se não, por que você acha que não lhe foi dada a oportunidade no passado?

19. Nos últimos dez anos, alguma coisa mudou sobre como as pessoas geralmente fal
apicultura como um meio de subsistência / uma maneira de ganhar dinheiro?

20. Voce acha que mulheres devem manter albelhas?

- Sim
- Nao
- Nao sei

20b. Por que voce acha isso?

21. Antes na sua communidade mulheres nao puderam manter albelhas mas agora mu
albelhas. O que mudou?

22. Você acha que alguma coisa poderia ser melhorada sobre o processos de participa
projectos de apicultura acontecendo na sua communidade?

Satisfaction and challenges with conservation and developmen

23. Como você recebe informações sobre as atividades e projectos que esta acontecen
commmunidade?

24. Você já descobriu que você perdeu ou não recebeu uma mensagem sobre atividad
na sua communidade?

Alguma vez ja perdeu informacoes de avisos para participar em alguma reuniao de algum projecto na sua con

25. Aqui na sua communidade, você já encontrou quaisquer dificuldades ou desafios q
com projectos de desenvolvimento no passado?

26. Você acha que alguma coisa poderia ser melhorada sobre os projectos de desenvo

27. O que você acha que o aconteceria se os projectos de desenvolvimento pararem e
comunidade?

Por favor, deixa a pessoa para responder e depois pergunta sobre o impacto no ambiente - o que vai aconte

28. Você está satisfeito ou insatisfeito com os projectos de desenvolvemento e conserv
communidade?

- ◯ Muito Insatisfeito
- ◯ Insatisfeito
- ◯ Nem insatisfeito ou satisfeito
- ◯ Satisfeito
- ◯ Muito satisfeito

28b. Por favor, explique sua resposta.

Gestao Floresta

29. Aqui na sua communidade, que regras TRADICIONAIS tem sobre iniciar fogos e qui

Regras que foram feitas na sua comunidade

30. Aqui na sua communidade, o que regras NOVAs voce tem sobre voce tem sobre ini
quimar?

Regras introduzidas de fora da Comunidade (Regras de governo nacional, zona de tampao)

32. Como você define um incêndio DESCONTROLADO ou queimadura?

33. Como você define um incêndio CONTROLADO ou queimadura?

34. Como essas regras sobre fogo e mudaram nos últimos 10 anos?

35. Atualmente, você tem alguma preocupação com os recursos naturais de sua comu de florestas, animais, ou com o ambiente? *

O que preocupacoes voce tem?

36. Você acha que suas recomendações ou preocupações sobre as floresta o ambiente sua aldeia são ouvidas e postas em prática?

- ◯ Nao
- ◯ Escutado, mas nenhuma ação tomada
- ◯ Ouvido e algum esforço feito para incluir meus pontos de vista na decisão gerencial
- ◯ Ouvido e atuado em integralmente
- ◯ Nao tenho / ainda nao tem preocupacoes sobre as florestas

36b. Por favor, explica e forneça um exemplo por que voce acha que isso

37. Você está satisfeito com a forma como as florestas são geridas em torno de sua alc

- Muito Insatisfeito
- Insatisfeito
- Nem satisfeito nem insatisfeito
- Satisfeito
- Muito satisfeito

37b. Por favor, explique sua resposta

38. Voce tem um committee de gestao da recursos naturais na sua communidade?

- Sim
- Nao

39. Se sim, o que voce acha que o committe de gestao fazem?

Commentarios addicionais

Appendix 5. Interview questions – baobab collectors

Collector_Survey_Malambe_V002

Esta pesquisa é parte de um projeto de pesquisa de doutorado conduzido por William Universidade de Sheffield, Reino Unido. Esta pesquisa está investigando os impactos d conservação e desenvolvimento na zona rural de Moçambique. Especificamente, o imp projetos de conservação e desenvolvimento nas comunidades locais. Este é um projeto independente, e nós não somos afiliados com qualquer governo ou organização de car suas respostas serão mantidas anônimas. Eu ficaria muito grato se você responder a al perguntas sobre o seu bem-estar. As informações que você fornecer serão mantidas es confidenciais.

Questoes introdução

1. Date

yyyy-mm-dd hh:mm

2. Name of enquirer

- Hosia Mavato
- William Mitchell

3. Community name

4. Village name (nome de povoada)

6. Name of village (local) chief (regulo de povoada)

7. Sex

- ◯ Male
- ◯ Female

8. Você é um coletor lider para o BPM?

- ◯ Sim
- ◯ Nao

9. Você é desta vila ou se moveu para cá?

- ◯ Local
- ◯ Migrant

10. Qual é o seu estado civil actual?

- ◯ CASADO/A
- ◯ SOLTEIRO/A
- ◯ UINÃOMARITAL
- ◯ SEPARADO/A OU DIVORCIADO/A
- ◯ VIÚVO/A

11. Quantos filhos/as voce tem?

12. Qual é a sua relação de parentesco com o/a chefe de agregado familiar?

- ◯ CHEFE de familia.
- ◯ ESPOSA./O
- ◯ PAI/MAE
- ◯ FILHA/O
- ◯ GENRO/NORA
- ◯ NETA/O
- ◯ IRMÃ/O
- ◯ OUTRO

13. Quantos adultos voce tem na sua agregado familiar?

____

14. Quantos filhos voce tem na sua agregado familiar?

____

Perfil de subsistência

15a. Quais são as principais maneiras pelas quais você contribuiu para sua família nos
anos?

- ☐ Pecuária - pastoral móvel (usando pastagens abertas)
- ☐ Pecuária - pastoral estacionária, em torno de casa
- ☐ Cultivo de cultivo - culturas de subsistência
- ☐ Cultivo que cultiva comercial / colheitas de dinheiro
- ☐ Cultura de prata de árvores para subsistência
- ☐ Cultura de prata de árvores para venda comercial
- ☐ Pesca comercialmente
- ☐ Coleção de produtos florestais
- ☐ Turismo
- ☐ Doméstico
- ☐ Apicultura
- ☐ Transporte
- ☐ O negócio
- ☐ Outro trabalho remunerado

15b. Quais são as principais maneiras pelas quais você contribuiu para sua família nos
anos? Por favor, classifique do mais importante ao menos importante

1st choice

- ○ Pecuária - pastoral móvel (usando pastagens abertas)
- ○ Pecuária - pastoral estacionária,
- ○ Cultivo de cultivo - culturas de subsistência
- ○ Cultivo que cultiva comercial / colheitas de
- ○ Cultura de prata de árvores para subsistência
- ○ Cultura de prata de árvores para venda c

Nao tem

3rd choice

Pecuária - pastoral móvel (usando pastagens abertas) | Pecuária - pastoral estacionária,
Cultivo de cultivo - culturas de subsistência | Cultivo que cultiva comercial / colheitas de
Cultura de prata de árvores para subsistência | Cultura de prata de árvores para venda c
Pesca comercialmente | Coleção de produtos florestais | Turismo

4th choice

Pecuária - pastoral móvel (usando pastagens abertas) | Pecuária - pastoral estacionária,
Cultivo de cultivo - culturas de subsistência | Cultivo que cultiva comercial / colheitas de
Cultura de prata de árvores para subsistência | Cultura de prata de árvores para venda c
Pesca comercialmente | Coleção de produtos florestais | Turismo

5th choice

Pecuária - pastoral móvel (usando pastagens abertas) | Pecuária - pastoral estacionária,
Cultivo de cultivo - culturas de subsistência | Cultivo que cultiva comercial / colheitas de
Cultura de prata de árvores para subsistência | Cultura de prata de árvores para venda c
Pesca comercialmente | Coleção de produtos florestais | Turismo
Doméstico | Apicultura | Transporte
O negócio | Outro trabalho renumerado | Nao tem
Nao tem | Nao tem | Nao tem
Nao tem

15b. Se a resposta anterior incluir outro trabalho numerado ou negocio, por favor expl
aqui

Malambe

16. Por quanto tempo você coleta malambe.

Number of years

17. O que te motivou a começar a coletar malambe?

19. Durante o último ano, ate que ponto tem sido importante coletar e vender malamb
subsistência?

- ◯ mais importante do que TODAS as outras atividades de subsistência que eu faço
- ◯ Mais importante do que a MAIORIA das outras atividades de subsistência que eu faço
- ◯ Tão importante quanto minhas outras atividades de subsistência que faço
- ◯ Menos importante do que a MAIORIA das outras atividades de subsistência que eu faço
- ◯ Menos importante do que TODAS das outras atividades de subsistência que eu faço

20. Por que voce acha isso?

21. Que quantidade de malambe você vendeu da última vez a BPM?

Volume of honey and price se possivel?

22. Como é que o tempo que você gasta coletando malambe mudou nos últimos 5 anc

- ◯ Aumentou muito
- ◯ Aumentou
- ◯ Permaneceu o mesmo
- ◯ Diminuiu
- ◯ Diminuiu muito
- ◯ Nao sabe

24. O que você fez com o dinheiro que você recebeu do BPM pela última vez?

25. Nos últimos cinco anos, alguma coisa mudou sobre como as pessoas geralmente fa
malambe como um meio de subsistência / uma maneira de ganhar dinheiro?

Por favor, forneça detalhes como as pessoas pensavam de coleção Baobab antes e agora?

Outro comparadores

26. Como o seu comércio com outros compradores de Malambe (não BPM) mudou des
começou a comprar Malambe?

- ◯ eu nunca costumava vender para outros comerciantes, eu tenho apenas cada Malambe vendid
- ◯ Eu parei de vender para outros comerciantes
- ◯ Outros comerciantes não são autorizados a comprar em nossa aldeia
- ◯ Eu vender menos para os outros comerciantes do que eu costumava
- ◯ Eu vender mais para outros comerciantes do que eu costumava
- ◯ Nenhum mudança

27. Como se compara a quantidade de Malambe que voce vende para BPM e a quantic
vende para outros compradores?

28. Como tem a prática de outros comerciantes (não BPM) mudou desde BPM começo

29. Quais são as vantagens e desvantagens de lidar com os comerciantes informais?

30. Você já teve que vender para outros comerciantes porque BPM não chegou. Se Sim
aconteceu?

31. Você já teve conflito com os comerciantes informais? Por favor, especifique que tip
você teve.

Empowerment and gender

32. Em termos de dinheiro que voce ganha, como é que as decisões são tomadas para
sua família?

33. Ao longo dos últimos 5 anos, você se tornou mais ou menos envolvido neste proce
de decisão em sua casa?

- muito mais envolvido
- mais envolvidos
- meu envolvimento permaneceu o mesmo
- menos envolvido
- muito menos envolvido

34. Por que você diz que seu envolvimento mudou?

Por favor, forneça um exemplo de como

35. De que maneiras os outros membros de sua família o ajudam quando você está co malambe? Algum de seus membros da família toma sobre alguma de suas outras resp por exemplo cozinhando ou limpando?

Satisfaction with Micaia and development projects

36. Normalmente, como você recebe informações sobre as atividades da MICAIA?

37. Você já descobriu que você perdeu ou não recebeu uma mensagem sobre as ativid BPM? Por exemplo, sobre uma reunião, treinamento ou qualquer outra atividade?

38a. Você acha que pessoas de outras comunidades devem poder coletar malambe de localizadas perto da sua comunidade?

- ◯ Sim
- ◯ Nao
- ◯ Nao sei

39. O que Micaia faz na sua comunidade?

---

40. O que BPM faz na sua communidade?

---

41. Micaia e BPM tiveram problemas para comprar Malambe em sua comunidade no a
Isso causou problemas e que impacto isso teve para você e sua família?

descreva qual impacto isso teve

---

42. Você está satisfeito ou insatisfeito com BPM e Micaia?

- ◯ Muito Insatisfeito
- ◯ Insatisfeito
- ◯ Nem sateisfeito ou satisfeito
- ◯ Sateisfeito
- ◯ Muito Sateisfeito
- ◯ Nao sabe

43b. Por favor, explique sua resposta.

Gestao Floresta

44. Na sua comunidade, quais são as regras associadas à coleta de Malambe ou ao usc recursos naturais importantes em sua comunidade?

Regras que foram feitas na sua comunidade ou a fora

42. Quais são as punições se você violar essas regras ou não fizer essas coisas?

Se houver punições tradicionais e novas, especifique entre elas.

44. Como essas regras sobre mudaram nos últimos 10 anos?

45. Atualmente, você tem alguma preocupação com os recursos naturais de sua comu de florestas, ou com o ambiente?

46a. Quando você tem preocupações com as florestas e o meio ambiente, sente que é autoridades apropriadas (vila, anciãos, seu regulamento, governo local, fiscais) e agiu?

- Nao
- Escutado, mas nenhuma ação tomada
- Ouvido e algum esforço feito para incluir meus pontos de vista na decisão gerencial
- Ouvido e atuado em integralmente
- Nao tenho / ainda nao tinha preocupacoes sobre as florestas

48. Você está satisfeito com a forma como as florestas são geridas em torno de sua alc

- Muito Insatisfeito
- Insatisfeito
- Nem satisfeito nem insatisfeito
- Satisfeito
- Muito satisfeito

48b. Por favor, explique sua resposta

49. Voce tem um committee de gestao da recursos naturais na sua communidade?

- Sim
- Nao
- Nao sabe

Appendix 6. Interview questions – non-baobab collectors

Non_CollectorSurvey_Malambe_V002

Esta pesquisa é parte de um projeto de pesquisa de doutorado conduzido por William
Universidade de Sheffield, Reino Unido. Esta pesquisa está investigando os impactos d
conservação e desenvolvimento na zona rural de Moçambique. Especificamente, o imp
projetos de conservação e desenvolvimento nas comunidades locais. Este é um projeto
independente, e nós não somos afiliados com qualquer governo ou organização de ca
suas respostas serão mantidas anônimas. Eu ficaria muito grato se você responder a al
perguntas sobre o seu bem-estar. As informações que você fornecer serão mantidas e
confidenciais.

Questoes introdução

1. Date

yyyy-mm-dd hh:mm

2. Name of enquirer

- Hosia Mavato
- William Mitchell

3. Community name

3. Community name

- Mapunga
- Mussapa

5. Name of community chief

6. Name of village (local) chief

7. Sex

- Male
- Female

8. Você vende mel para o MHC actualmente?

- Sim
- Nao

9. Você é desta vila ou se moveu para cá?

- Local
- Migrant

10. Qual é o seu estado civil actual?

- CASADO/A
- SOLTEIRO/A
- UINÃOMARITAL
- SEPARADO/A OU DIVORCIADO/A
- VIÚVO/A

12. Qual é a sua relação de parentesco com o/a chefe de agregado familiar?

- ◯ CHEFE de familia.
- ◯ ESPOSA./O
- ◯ PAI/MAE
- ◯ FILHA/O
- ◯ GENRO/NORA
- ◯ NETA/O
- ◯ IRMÃ/O
- ◯ OUTRO

13. Quantas adultos voce tem na sua agredado familiar?

____

14. Quantos filhos voce tem na sua agredado familiar? (Menos de 18 anos)

____

Perfil de subsistência

17a. Quais são as principais maneiras pelas quais você contribuiu para sua família nos anos?

- ☐ Pecuária - pastoral móvel (usando pastagens abertas)
- ☐ Pecuária - pastoral estacionária, em torno de casa
- ☐ Cultivo de cultivo - culturas de subsistência
- ☐ Cultivo que cultiva comercial / colheitas de dinheiro
- ☐ Cultura de prata de árvores para subsistência
- ☐ Cultura de prata de árvores para venda comercial
- ☐ Pesca comercialmente
- ☐ Coleção de produtos florestais
- ☐ Turismo
- ☐ Doméstico
- ☐ Apicultura
- ☐ Transporte
- ☐ O negócio
- ☐ Outro trabalho remunerado

15a. Quais são as principais maneiras pelas quais você contribuiu para sua família nos anos?

Classifique do mais importante ao menos importantenos?

1st choice

- ○ Pecuária - pastoral móvel (usando pastagens abertas)
- ○ Pecuária - pastoral estacionária,
- ○ Cultivo de cultivo - culturas de subsistência
- ○ Cultivo que cultiva comercial / colheitas de
- ○ Cultura de plantas de árvores para subsistência
- ○ Cultura de platas de árvores para venc

Nao tem | Nao tem | Nao tem

3rd choice

Nao tem | Nao tem | Nao tem

- Pecuária - pastoral móvel (usando pastagens abertas)
- Pecuária - pastoral estacionária,
- Cultivo de cultivo - culturas de subsistência
- Cultivo que cultiva comercial / colheitas de
- Cultura de plantas de árvores para subsistência
- Cultura de platas de árvores para venc
- Pesca comercialmente
- Coleção de produtos florestais
- Turismo

4th choice

- Pecuária - pastoral móvel (usando pastagens abertas)
- Pecuária - pastoral estacionária,
- Cultivo de cultivo - culturas de subsistência
- Cultivo que cultiva comercial / colheitas de
- Cultura de plantas de árvores para subsistência
- Cultura de platas de árvores para venc
- Pesca comercialmente
- Coleção de produtos florestais
- Turismo

5th choice

- Pecuária - pastoral móvel (usando pastagens abertas)
- Pecuária - pastoral estacionária,
- Cultivo de cultivo - culturas de subsistência
- Cultivo que cultiva comercial / colheitas de
- Cultura de plantas de árvores para subsistência
- Cultura de platas de árvores para venc
- Pesca comercialmente
- Coleção de produtos florestais
- Turismo

15b. Se a resposta anterior incluir outro trabalho numerado ou negocio, por favor expl aqui

- Doméstico
- Apicultura
- Transporte
- O negócio
- Outro trabalho remunerado
- Outro trabalho
- Nao tem
- Nao tem
- Nao tem
- Nao tem
- Nao tem
- Nao tem

Malambe sale - not BPM

16. Você vende malambe?

- Sim
- Nao

17. Answer the rest of this section only if the previous answer was yes

18. Se sim, por quanto tempo você vende malambe?

19a. Durante o último ano, como importante tem coletando e vendendo malambe sidc subsistência?

- mais importante do que TODAS as outras atividades de subsistência que eu faço
- Mais importante do que a MAIORIA das outras atividades de subsistência que eu faço
- Tão importante quanto minhas outras atividades de subsistência que faço
- Menos importante do que a MAIORIA das outras atividades de subsistência que eu faço
- Menos importante do que TODAS das outras atividades de subsistência que eu faço

19b. Por que voce disse isto?

20. Onde voce vende sua malambe e com quem?

Informal Trade

21. Como a prática de outros compradores (não BPM) mudou desde que o BPM começ Malambe (Durante as ultimos cincos anos)

Por exemplo, onde eles compram, quanto compram, preços, como compram.

22. Algumas comunidades impediram que algumas pessoas comprassaram Malambe e

23. Se sim, por favor, descreva o que aconteceu na sua communidade?

24. Se você vende malambe, você já teve alguns desafios com compradores?

Gender and empowerment

25. Em termos de dinheiro que voce ganha, como é que as decisões são tomadas para sua família?

Quem vai decidir sobre o que coisas? Se voce tem

26a. Ao longo dos últimos 5 anos, você se tornou mais ou menos envolvido neste proc de decisão em sua casa?

- muito mais envolvido
- mais envolvidos
- meu envolvimento permaneceu o mesmo
- menos envolvido
- muito menos envolvido
- eu não sei

26b. Por favor, forneça um exemplo.

27. Quem guarda o dinheiro que voce ganha?

- ◯ Guarda todo sozinho
- ◯ Entrega uma parte ao seu marido
- ◯ Entrega todo dinheiro ao seu marido
- ◯ Entrega uma parte ao seu outro membros da minha familia
- ◯ Entrega todo dinheiro ao seu outro membros da minha familia

28. De que maneiras os outros membros de sua família o ajudam quando você está co malambe?

Participação em BPM?

29. Você quer comecar a vender Malambe de BPM?

- ◯ Sim
- ◯ Nao

30a. Você já teve a oportunidade de vender Malambe de BPM?

- ◯ Sim
- ◯ Nao

30b. Se sim, por que você não vende malambe de BPM agora?

30c. Se não, por que você acha que não lhe foi dada a oportunidade no passado?

Satisfaction and challenges with Micaia

37. Normalmente, como você recebe informações sobre as atividades e projectos na su communidade. Por exemplo as actividades da MICAIA?

38. Você já descobriu que você perdeu ou não recebeu uma mensagem sobre as ativid BPM? Por exemplo, sobre uma reunião, treinamento ou qualquer outra atividade?

31a. Você acha que pessoas de outras comunidades devem poder coletar malambe de localizadas perto da sua comunidade?

- ◯ Sim
- ◯ Nao
- ◯ Nao sei

Por que voce acha isso?

O que Micaia faz na sua communidade?

O que BPM faz na sua communidade?

33. Em geral, voce acha que pessoas estao satisfeito ou insatisfeito com Micaia e BPM r
communidade?

- ◯ Muito Insatisfeito
- ◯ Insatisfeito
- ◯ Nem insatisfeito ou satisfeito
- ◯ Satisfeito
- ◯ Muito satisfeito

34. Por que voce acha que isso?

Gestao Floresta

35. Na sua comunidade, quais são as regras associadas à coleta de malambe ou ao usc
recursos naturais importantes em sua comunidade?

Regras que foram feitas na sua comunidade ou a fora

36. Quais são as punições se você violar essas regras ou não fizer essas coisas?

Se houver punições tradicionais e novas, especifique entre elas

37. Como essas regras sobre à coleta de Malambe ou ao uso de outros recursos natura
em sua comunidade mudaram nos últimos 10 anos?

39a.. Você acha que suas recomendações ou preocupações sobre as floresta o ambien
sua aldeia são ouvidas e postas em prática?

- Nao
- Escutado, mas nenhuma ação tomada
- Ouvido e algum esforço feito para incluir meus pontos de vista na decisão gerencial
- Ouvido e atuado em integralmente
- Nao tenho / ainda nao tem preocupacoes sobre as florestas

39b. Por favor, explica e forneça um exemplo por que voce acha que isso

40a. Você está satisfeito com a forma como as florestas são geridas em torno de sua al

- Muito Insatisfeito
- Insatisfeito
- Nem satisfeito nem insatisfeito
- Satisfeito
- Muito satisfeito

40b. Por favor, explique por que você diz isso / fornece um exemplo de quando você le
preocupações sobre a floresta ou o meio ambiente?

41a. Voce tem um committee de gestao da recursos naturais na sua communidade?

- Sim

42b Se sim, o que voce acha que o committe de gestao fazem?
Commentarios addicionais

Appendix 7. Interview questions – regulos and community elites

Regulo_Survey_Malambe_V001

Esta pesquisa é parte de um projeto de pesquisa de doutorado conduzido por William
Universidade de Sheffield, Reino Unido. Esta pesquisa está investigando os impactos d
conservação e desenvolvimento na zona rural de Moçambique. Especificamente, o imp
projetos de conservação e desenvolvimento nas comunidades locais. Este é um projeto
independente, e nós não somos afiliados com qualquer governo ou organização de car
suas respostas serão mantidas anônimas. Eu ficaria muito grato se você responder a al
perguntas sobre o seu bem-estar. As informações que você fornecer serão mantidas es
confidenciais.

Questoes introdução

1. Date

yyyy-mm-dd hh:mm

2. Name of enquirer

- Hosia Mavato
- William Mitchell
- Patricio

3. Community name

4. Village name (nome de povoada)

6. Name of village (local) chief (regulo de povoada)

7. Sex

- ◯ Male
- ◯ Female

8. Você é um coletor lider para o BPM?

- ◯ Sim
- ◯ Nao

9. Você é desta vila ou se moveu para cá?

- ◯ Local
- ◯ Migrant

10. Qual é o seu estado civil actual?

- ◯ CASADO/A
- ◯ SOLTEIRO/A
- ◯ UINÃOMARITAL
- ◯ SEPARADO/A OU DIVORCIADO/A
- ◯ VIÚVO/A

11. Quantos filhos/as voce tem?

12. Qual é a sua relação de parentesco com o/a chefe de agregado familiar?

- CHEFE de familia.
- ESPOSA./O
- PAI/MAE
- FILHA/O
- GENRO/NORA
- NETA/O
- IRMÃ/O
- OUTRO

13. Quantos adultos voce tem na sua agregado familiar?

14. Quantos filhos voce tem na sua agregado familiar?

Malambe

Quantas mulheres na sua communidade vende malambe para BPM?

- Todo
- A maioria
- Mais ou menos meia
- A minoria
- Ninguem

22.Como a quantidade de malambe que sua comunidade está coletando mudou nos ú

- Aumentou muito

Sua esposas coleta malamabe e vende a BPM?

- Sim
- Nao

A venda para BPM aumentou a renda em dinheiro que suas esposas ganham?

24. O que elas fizeram com o dinheiro que elas receberam do BPM pela última vez?

Quais impactos BPM estao ter em sua casa?

In terms of what your wives spend their time doing or what impact the money is having?

Se sua esposas estao a coletar malambe, elas tem menos tempo para outra coisas?

25. Nos últimos cinco anos, alguma coisa mudou sobre como as pessoas geralmente fa malambe como um meio de subsistência / uma maneira de ganhar dinheiro?

Por favor, forneça detalhes como as pessoas pensavam de coleção Baobab antes e agora?

Outro comparadores

26. Como o comércio (em sua communidade) com outros compradores de Malambe (r
mudou desde que o BPM começou a comprar Malambe?

Como tem a prática de outros comerciantes (não BPM) mudou desde BPM começou a
Malambe?

Onde eles vao comprar, quando, precos, outra coisas?

Quais são as vantagens e desvantagens de lidar com os comerciantes informais?

Você já teve que vender para outros comerciantes porque BPM não chegou. Se Sim, o

Você já teve conflito com os comerciantes informais? Por favor, especifique que tipo de
teve.

Satisfaction with Micaia and development projects

36. Normalmente, como você recebe informações sobre as atividades da MICAIA e BPM

Estas informações e sempre claro ou nao? Por favor, forneça um exemplo quando as ir micaia estiverem claras ou nao estiveram claras?

37. Você já descobriu que você perdeu ou não recebeu uma mensagem sobre as ativid BPM? Por exemplo, sobre uma reunião, treinamento ou qualquer outra atividade?

38a. Você acha que pessoas de outras comunidades devem poder coletar malambe de localizadas perto da sua comunidade?

- ◯ Sim
- ◯ Nao
- ◯ Nao sei

38b. Por que voce acha que isso?

39. O que Micaia faz na sua comunidade?

41. Micaia e BPM tiveram problemas para comprar Malambe em sua comunidade no a
Isso causou problemas e que impacto isso teve para você e sua família?
descreva qual impacto isso teve

42. Você está satisfeito ou insatisfeito com BPM e Micaia?

- ◯ Muito Insatisfeito
- ◯ Insatisfeito
- ◯ Nem sateisfeito ou satisfeito
- ◯ Sateisfeito
- ◯ Muito Sateisfeito
- ◯ Nao sabe

43b. Por favor, explique sua resposta.

Community delimitation and Duats

MICAIA ajudou a sua comunidade passar por um processo de delimitação para a sua c
quais as vantagens que você vê do processo de delimitação da Comunidade

O que desvantagens você vê?

Você já usou os mapas e as ferramentas do processo de delimitação para qualquer coi

Entretanto, a obtenção de duats para sua comunidade foi rejeitada aqui. Você pode ex aconteceu? Por que você acha que as duatas foram uma má idéia?

Gestao Floresta

44. Na sua comunidade, quais são as regras associadas à coleta de Malambe ou ao usc recursos naturais importantes em sua comunidade?

Regras que foram feitas na sua comunidade ou a fora

42. Quais são as punições se você violar essas regras ou não fizer essas coisas?

Se houver punições tradicionais e novas, especifique entre elas.

44. Como essas regras sobre mudaram nos últimos 10 anos?

45. Atualmente, você tem alguma preocupação com os recursos naturais de sua comu de florestas, ou com o ambiente?

46a. Quando você tem preocupações com as florestas e o meio ambiente, sente que é
autoridades apropriadas (vila, anciãos, seu regulamento, governo local, fiscais) e agiu?

- Nao
- Escutado, mas nenhuma ação tomada
- Ouvido e algum esforço feito para incluir meus pontos de vista na decisão gerencial
- Ouvido e atuado em integralmente
- Nao tenho / ainda nao tinha preocupacoes sobre as florestas

47. Por favor, forneça um exemplo por que voce acha que isso

48. Você está satisfeito com a forma como as florestas são geridas em torno de sua alc

- Muito Insatisfeito
- Insatisfeito
- Nem satisfeito nem insatisfeito
- Satisfeito
- Muito satisfeito

48b. Por favor, explique sua resposta

49. Voce tem um committee de gestao da recursos naturais na sua communidade?

- Sim

Appendix 8. Interview questions – adaptation of MBIs and entrepreneurship

Part 1: Functional components of MBIs

1. Please provide an account of how the focal MBIs currently work in practice. Please detail what conservation and development issues the focal initiative is intended to solve, and what strategic actions are undertaken as part of the focal initiative to achieve its objectives.

Guiding questions / topics to discuss

a. What are the main conservation and development issues you are trying to solve with the focal intervention / MBI?
b. What are the desired outcomes of your interventions? Both social and environmental.
c. What communities have been targeted and why?
    i. How were / are participants selected to participate?
d. What actions does your organisation need to take to ensure the MBI runs as intended?
e. What are the participants or beneficiaries required to do?
    i. Are there any sanctioned actions for participants?
f. Are there any informal or formal rules associated with participation?
g. What information is provided to participants? E.g. Training?

Part 2: Recognition and development of the opportunity

1. Please provide an account of how you first came to **recognise the opportunity** to create your initiative / MBI. Please provide an account of any strategic actions you undertook to create the opportunity, followed by the most important factors you believe contributed to your ability to **recognise** the opportunity, including internal and external factors.

Guiding questions / topics to discuss

a. How did you identify the conservation and/or development issue that you seek to address with the MBI?
b. Were you inspired by previous projects or initiatives?
    i. did you borrow ideas/concepts/components from conservation and development initiatives?
c. Did you have multiple ideas or envisage multiple ways to develop your MBI / solve the conservation and development issue you wanted to solve?
    i. If yes, how did you choose between them?
d. Did you have to undertake any strategic actions to create the opportunity before you could start to develop your initiative/s? E.g. raise awareness, change policy / legislation, change social norms, make connections, lobby or campaign.
e. What factors contributed to you recognising the opportunity?
    i. What internal factors contributed to you recognising the opportunity? e.g. experience, education / knowledge, skills, motivations and other personal traits?
    ii. What external factors contributed to you recognising the opportunity? E.g. the political environment (economy), socio-demographic (population changes), physical (droughts), technological?

2. Please provide an account of how you **developed the MBI / intervention. I.e.** from the point that you decided to act on your initial ideas, to the point that the MBI was launched. Please provide an account of your main actions and strategies, and the most important factors (both internal and external) that you believe contributed to your ability to **develop** the opportunity.

Guiding questions / topics to discuss

a. How did you plan for the implementation of your MBI?
    i. Was there a business plan?
b. What strategic actions did you undertake to develop the MBI / prepare for its implementation?
c. What resources did you require to develop the opportunity? E.g. Labour, financial, skills, markets, customers, regulations?
    i. How did you mobilise these resources?
    ii. Did you face resource restrictions and how did you overcome these limitations?
d. What factors contributed to the development of the focal MBI?

Part 3: Key changes to the structure of the MBI

1. During the lifetime of the focal MBI has there been any key/major changes (either gradual or sudden) to how these MBIs function in practice? If yes, please describe these main changes and the role of key individuals or groups in bringing about these changes?

    a. For example, has there been a change in who can participate, how people are rewarded or sanctioned, the decision-making positions, information that is distributed, etc.

Guiding questions / topics to discuss

a. Why do you think these changes occurred? E.g. changes to increase profitability, changes to improve efficiency, changes in the political environment (policy changes, conflict, policy), changes to the physical environment (drought), logistics, conflict, negotiation, policy or law.

b. Which individuals or groups have been particularly influential in bringing about these changes?

    i. What role did each of these groups play in causing change to the way the MBIs function in practice.

        1. Specifically, how have your interactions with different funding bodies modified the design of your initiatives.

        2. Have any groups tried to take advantage of these initiatives to benefit themselves at the expense of others and how has this led to changes in the structure of the MBIs.

        3. What roles have governmental departments played in influencing how the focal MBI functions in practice.

Part 4: The impact of MBI on local institutions for natural resource management.

1. Please provide an account of the impact the MBIs have had on the communities you work with and their environment. I am particularly interested on how these initiatives have impacted on communities' institutions (rules, norms and beliefs) related to natural resource management. Please consider any general impacts you think these initiatives have had, and also the impact of the MBI has had on individuals with varying degrees of involvement in the initiative.

Guiding questions / topics to discuss

a. How do the communities you target with your initiatives govern their natural resources / environment.?
b. What informal or formal rules or norms exist in these communities relevant to natural resource management?
    i. How do these rules and norms manifest in daily practices?
        1. What actions do individuals take to comply (or not) with these rules and norms?
        2. Are certain rules flexible or inflexible depending on context or circumstance. I.E. do these rules or norms differ within the same community
    ii. Which rules and norms are internal to the community which have been introduced/ externally enforced.
c. What impact have these MBIs had on the communities in which they have been implemented.
    i. Specifically, what impact have your initiatives had on the rules and norms communities use to govern natural resources?
    ii. Has there been any impacts of MBIs you did not foresee?
d. Do associations established have multiple functions beyond what they were intended to do.

Appendix 9. Stakeholder analysis questions

Section 1: Identification of MBIs in the region

1. What MBIs for conservation and development are currently being implemented in Chimanimani area and adjacent communities?
    a. And what form do these MBIs take? For example, ecotourism, payments for ecosystem services, non-timber forest product enterprises or market/value chain modifications?
1. Which communities do they target?
2. What organisations are involved in the implementation of these MBIs.
3. What role do these organisations play in the delivery of MBIs? For example, funder, implementor, technical advisor, monitoring and evaluation, other roles?
    a. Has there been any other organisations involved in the implementation of MICAIAs MBIs

MBI name	**Description/type**	**Organisation**	**Organisation role**	**Communities**

4. Have any MBIs been implemented in the past that have now come to an end?
5. Are any new MBIs planned for the region in the near future?

Part 2: Functional components of MBIs

2. Please provide an account of how each of the MBIs currently work in practice. In other words what actions by what groups are required for the MBI to function? Please describe all stages of implementation from preparation by the NGO and selection of participants through to the completion of the initiative.

3. Additional guiding questions.

    a. How have participants been selected to participate in the MBI

    b. What are participants required to do to participate in the MBI?

        1. Specific actions required to participate

        2. Sanctioned actions. What are participants not allowed to do?

    c. Are there any formal rules associated with participation?

        1. How are these rules enforced?

        2. Are these rules commonly broken?

    d. What information is provided to participants? E.g. Training?

    e. Is any form of permission required for the MBIs to operate as intended?

        1. Do individuals participating require any form of permission

Do the organisations require any form of permission?