



Research

Waves and legacies: the making of an investment frontier in Niassa, Mozambique

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ABSTRACT. The literature on land-use frontiers has overwhelmingly focused on active frontiers of expansion. We focus on an emerging frontier. We studied the decisions, narratives, and practices of the actors driving land-use change in Niassa, Mozambique. Based on ethnographic research carried out between early 2017 and late 2018 among investors engaged in commercial agriculture and plantation forestry, we show how successive waves of actors with different backgrounds, motives, and business practices arrived in Niassa and attempted to establish farms or plantations yet repeatedly failed and left, or remained but continued to struggle. We show how even though waves come and go, they do leave sediments behind, legacies that over time add up to overcome the various constraints that investors face and gradually form the conditions for a frontier to emerge. We argue that the build-up of these legacies, particularly after the end of the civil war in 1992, has given rise to a new wave, which is qualitatively different from the previous ones in the sense that the actors did not arrive from elsewhere but were already present in Niassa. This wave thus emerges from within the region, building on the legacies of previous waves, indicating that over time endogenous processes may replace externally driven waves. We contribute to frontier theory by arguing that waves and legacies shape emerging frontiers through their dynamic interaction.

Key Words: *ethnography of investors; frontier emergence; land-use change; land-use investment; Mozambique; Niassa*

INTRODUCTION

The farthest edge of the investing frontier has now reached Mozambique. The Economist, 23 November 2013.

Frontiers are spaces facing a rapidly expanding force (Imamura 2015). From a land-use change perspective, frontiers are relatively resource-abundant areas where a new land use is rapidly expanding across the landscape (Rindfuss et al. 2007).^[1] In many contemporary frontiers, rapid land-use change is driven by large-scale, capitalized actors producing commodities for distant markets (le Polain de Waroux et al. 2018) or extracting or exploiting newly discovered or (re)invented natural resources (Rasmussen and Lund 2018).^[2] Frontier expansion can occur into forests through deforestation or into non-forest lands, and by replacing or displacing existing land uses (e.g., cropland extends over grazing lands; Meyfroidt et al. 2014). Therefore, the abundance of land and natural resources that characterizes frontier areas does not mean that these lands are unoccupied, unused, or unclaimed, although they often feature low population densities (Geiger 2009). Frontiers hold abundant resources, including free or easily accessible land, for a given commodity or commercial purpose that has hitherto remained unexploited, and this abundance of resources is relative to the capital or labor needed for commercial production (Barbier 2011). Resource abundance thus depends on one's interest and position yet is a key discursive element in the narratives (Larsen 2015) that underlie actors' search of potential profits in the frontier (le Polain de Waroux et al. 2018).

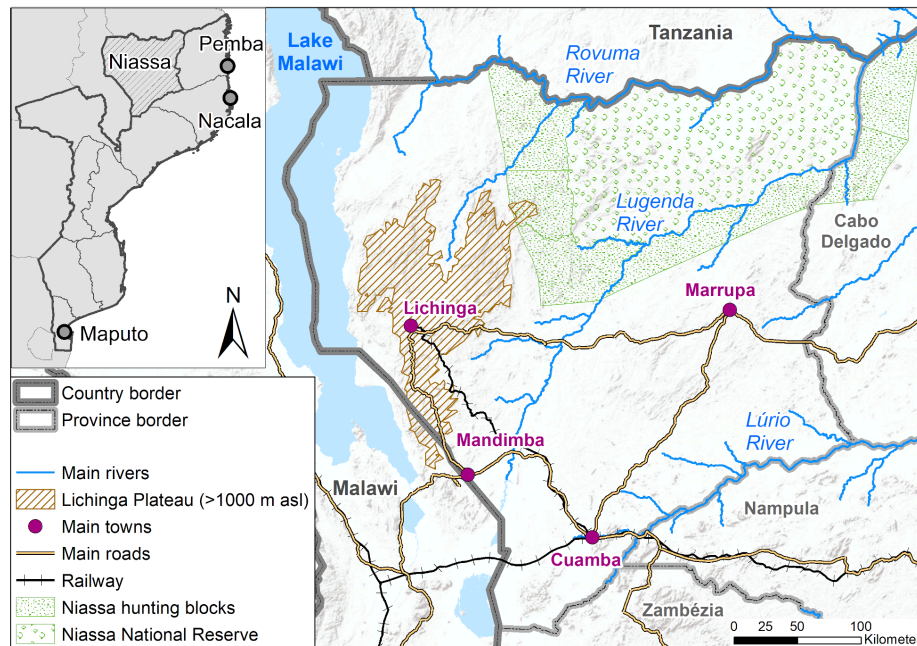
Frontier areas are thus not devoid of human presence; they are often already inhabited by people who use the land for subsistence purposes and local markets, e.g., small farmers, transhumant pastoralists, artisanal miners. The land-use changes they generate are gradual. Although it can be that these local actors switch to

a new land use, producing an internal or indigenous frontier (Li 2014), oftentimes they are displaced to more marginal lands or lose access to important resources by more powerful incoming actors or local elites. The literature on the global land rush, i.e., the acceleration of large-scale land acquisitions by investors across the world since 2008 (Alden Wily 2012), referred to this process of dispossession as “land grabbing.” Frontiers are thus also spaces of social interaction between actors of unequal power (Geiger 2009) and thus frequently sites of struggle and land-use competition (Haberl et al. 2014), which can turn into land conflicts and violence (Walker et al. 2011).

Le Polain de Waroux et al. (2018) distinguished five stages of frontier development: pre-frontier (which is actually a non-frontier area), early frontier, active frontier, late frontier, and post-frontier. Frontier studies have predominantly focused on active, already established frontiers such as the soya and cattle deforestation frontiers of the Amazon (e.g., Pacheco 2012), the Cerrado (e.g., Jepson 2006), and the Gran Chaco (e.g., le Polain de Waroux et al. 2018) in South America; the rubber frontiers in mainland Southeast Asia (e.g., Junquera and Grêt-Regamey 2019), oil palm frontiers in insular Southeast Asia (e.g., McCarthy and Cramb 2009), and the cocoa frontier in West Africa (e.g., Knudsen and Agergaard 2015). Much of the emphasis has been on understanding agricultural frontier expansion (Southgate 1990, Walker et al. 2009, Ioris 2016) and its further development or transition to post-frontier or consolidated situations (Browder et al. 2008, Pacheco 2012, Larsen 2015). Although studies have investigated how land-use change accelerates and early frontiers open up after crossing a “tipping point” (Müller et al. 2014)—identifying several mechanisms such as agglomeration economies (Garrett et al. 2013, Richards 2018), agricultural intensification (VanWey et al. 2013), or the network and herd effects of

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Fig. 1. Niassa province, Mozambique.



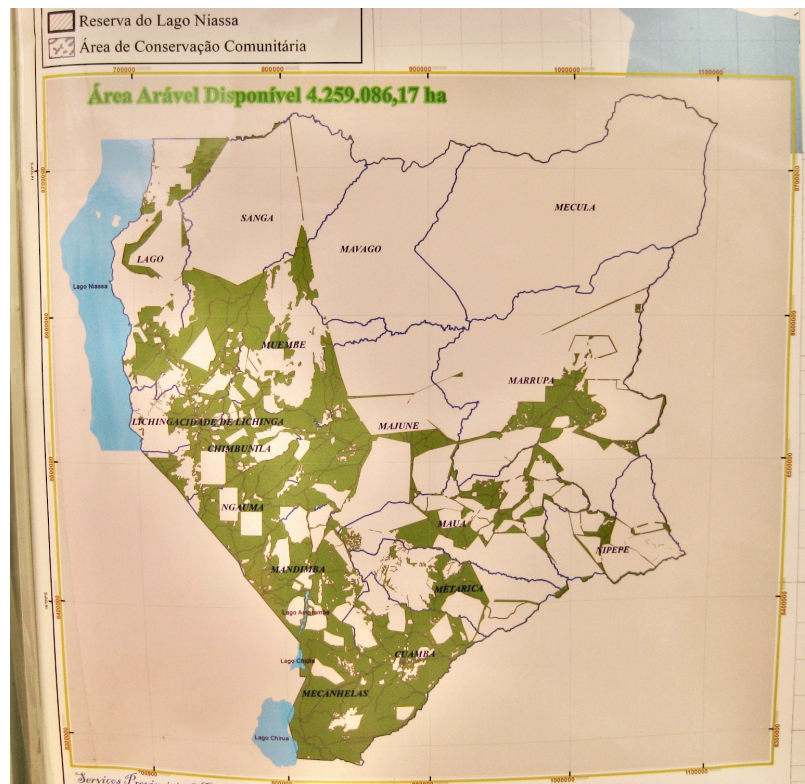
transnational producer cohorts (le Polain de Waroux 2019)—how and from what processes frontiers emerge remains little explored. This article contributes to the growing body of literature on land-use change and frontiers by focusing on an emerging frontier, that is, an area that has the potential of becoming an active frontier (Meyfroidt 2015, *unpublished manuscript*, https://ercmidland.files.wordpress.com/2017/02/erc_stg_midland_projectdescription.pdf). Emerging frontiers are places where rates of land-use change are still low (Meyfroidt 2015, *unpublished manuscript*), but where the appearance of potential profits or rents (le Polain de Waroux et al. 2018) may lead to an acceleration of land-use change. Emerging frontiers are thus tentative, preceding early frontiers in which they may morph if investment conditions improve and further constraints are overcome (Gasparri et al. 2016). Rents make previously uninteresting pre-frontier areas interesting for investment and may appear through a change in accessibility, a rise in commodity prices, the introduction of a new technology, or the implementation of a new policy (le Polain de Waroux et al. 2018). Frontiers emerge when actors, typically outside pioneers and speculators (le Polain de Waroux et al. 2018), identify and define a new resource (Rasmussen and Lund 2018), move in, and essentially activate a new frontier as they succeed in capturing the associated rents (le Polain de Waroux et al. 2018). Emerging frontiers can be populated by subsistence-oriented actors, and the growing interest and mobilization from investors, foreign and domestic, targeting the land and resources, increases the likelihood of land-use competition between different actors (Meyfroidt 2015, *unpublished manuscript*). Recent literature indicates that the Southern African region, and in particular northern Mozambique, with its perceived availability of suitable farmland, and growing interest by large-scale land-use actors, is a potential frontier area (Deininger et al. 2011, Lambin et al. 2013,

Gasparri et al. 2016). Northern Mozambique is also attracting a host of foreign investments in the extractives sector since 2003 (EITI 2008), following the discovery of enormous reserves of coal (Kirshner and Power 2015, Wiegink 2018), natural gas (Salimo 2018), heavy mineral sands (Chichava et al. 2019) and graphite, and of deposits of ruby (Maquenzi and Feijó 2019) and gold.

In this article, we examine frontier emergence in one of Mozambique's northern provinces: Niassa (see Fig. 1). We focus on investments in medium- to large-scale commercial agriculture and plantation forestry because these may potentially trigger rapid and expansive land-use change.^[3] Historically neglected by the state and tucked away in the country's north-western corner, Niassa is often described as the forgotten province of Mozambique. Although there have been meaningful attempts at commercial land use in the past, currently the number of investments is very small (around 15). In contrast, frontier developments have been underway more to the south in the better-connected provinces of Nampula and Zambézia, which contain investment hotspots like the Gurué area (Di Matteo and Schoneveld 2016, Zaehring et al. 2018, Bey et al. 2020).

Niassa is the poorest province of the country and its population largely depends on shifting cultivation for a living, with some cash income derived from staple crop sales (Landry and Chirwa 2011, Bleyer et al. 2016, GPN 2017). Niassa is also the largest province of the country, with the lowest population density, and known for its fertile soils, especially on the Lichinga plateau (GPN 2017). In combination with its favorable climate, it is generally seen as having great potential for the development of mechanized agriculture and plantation forestry (GPN 2017). Recent and planned improvements in road and railway infrastructure, both within Niassa and in the wider region, partly linked to

Fig. 2. Map displayed at the Niassa provincial stand at the Maputo International Trade Fair (3 Sept 2017).



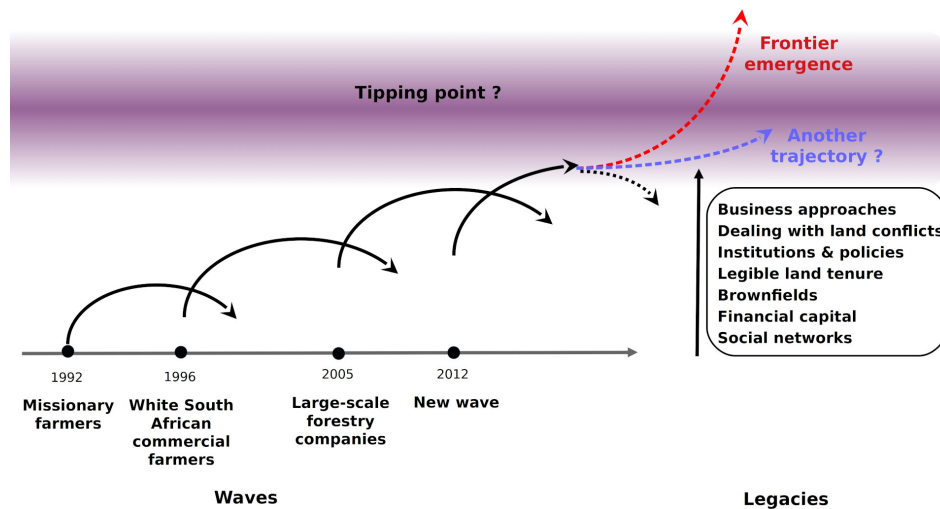
developments in the Nacala corridor (Scholvin and Plagemann 2014), not only promise to bring Niassa out of its relative isolation but have also made export-oriented investments more competitive, as connectivity to the Pemba and Nacala ports has improved. At the same time, the provincial government has embarked on a renewed marketing campaign to promote Niassa's agricultural and forestry potential and attract investors (GPN 2017), such as through an international investors conference in 2018. Much of the effort during investor platforms goes into making Niassa's resource wealth and alleged land availability known. At the 2017 Maputo International Trade Fair (FACIM), a map displayed in the Niassa provincial stand explicitly inventoried "available arable [land] area" (*área arável disponível*) for investment (see Fig. 2). Meanwhile, to reduce potential conflicts with investors, several NGOs have worked to enhance community land rights through community land delimitation and demarcation processes, and the registration of land-use right certificates.

To understand how frontiers emerge, we employ a historically embedded actor-centered approach, which focuses on what actors do, why, and how and which is particularly suitable to capture change, and an analytical lens organized around the twin notions of waves and legacies. Our research focused on the land-use decisions and practices of the actors that drive land-use change in Niassa through their investments, i.e., companies and commercial farmers. We particularly aimed to understand how and why they chose to venture and invest in Niassa, gaining

insights into their motivations, narratives and dreams; (translocal) social networks and relations with other actors in Niassa (e.g., smallholders); business practices and investment trajectories; life histories; and challenges, successes, and lessons learned. By adding historical depth to an analysis of what actors do, how, and why, we show how successive waves of actors since the end of the colonial period in 1975 arrived in Niassa and attempted to establish businesses, farms, or plantations yet repeatedly failed and left, or remained but without really being successful, for a variety of reasons such as the outbreak of war and lack of access to markets. We show how even though waves come and go, they do leave sediments behind, legacies, that over time add up and may overcome the various constraints that investors face and gradually form the conditions for a frontier to emerge. We argue that the build-up of these legacies, particularly after the end of Mozambique's civil war in 1992, has given rise to a new wave, which is qualitatively different from the previous ones in the sense that the actors did not arrive from elsewhere but were already present in Niassa (see Fig. 3). This wave thus emerges from within the region, building on the legacies of previous waves, suggesting that with the accumulation of conditions for frontier emergence, endogenous, self-reinforcing processes start to take the upper hand vis-à-vis externally driven waves.

The work presented here is based on qualitative, ethnographic fieldwork carried out in Niassa province and Mozambique's capital Maputo from February 2017 to December 2018. Information was gathered through 70 open interviews and

Fig. 3. Waves, legacies, and frontier emergence in Niassa.



informal conversations, and on-site observations during visits to farms, plantations, factories, company offices, investor platforms, and other multi-actor events, villages, and short stays at remote farms, by the lead author. Most interviews were individual but occasionally couples or groups were interviewed. Some key informants were interviewed several times. The majority of research participants were investors, i.e., capitalized land-use actors (commercial farmers and company owners that manage their own farms) or actors positioned along transnational land-use investment chains (Kish and Fairbairn 2018). Capitalized land-use actors had medium (between 20 to 200 hectares) to large (between 200 and 1000 hectares, with two outliers beyond 5000 hectares) estates, with only a fraction under production. They were of Mozambican or foreign origin, and their companies or farms were either family-based or set up by friends. The investment chain actors were linked to landholdings that ranged between 3800 to over 100,000 hectares. They included a corporate executive of a transnational investment company, an investment manager in the Mozambique office of a development finance institution, directors or farm/plantation managers of large-scale companies with international capital, company office employees, farm/plantation workers, as well as chairmen and staff from mediating institutions, i.e., institutions dedicated to improving the business environment and/or facilitating investment and commercial farming in Niassa. Interviews were also held with NGO staff, government officials, diplomats/donors, and local community members. This information has been supplemented and corroborated with data from six investor interviews by the third author in July 2017 and six by the second author in October 2018, and the rich discussions between a number of research participants and project researchers (including all authors) during a two-day workshop held in Maputo in October 2018. The article also benefits from two weeks of exploratory fieldwork in Nampula and Zambézia provinces in March 2017, and draws from documents and other materials collected during fieldwork (e.g., company strategic plans) as well as online newspaper articles, reports, and company and other official websites.

With this “ethnography of investors” we complement the land-grab scholarship with its focus on local impacts of large-scale land acquisitions, and the challenges that rural communities face when investors take their land. Indeed, Mozambique features heavily in the land-grab literature (e.g., UNAC and GRAIN 2015),^[4] with studies highlighting issues of displacement (e.g., Salomão 2020), contestation (e.g., Shankland and Gonçalves 2016), and land conflicts (e.g., Norfolk and Hanlon 2012). However, relatively few efforts have been made to get an in-depth understanding of the experiences of the investors themselves (but see Hammar 2010, 2013, Di Matteo and Schoneveld 2016, Kish and Fairbairn 2018). We are mindful of the possible land-grabbing effects of investors’ frontier-making practices and narratives (see Bey and Meyfroidt 2021), and in no way wish to minimize them, but here we focus on the causes of frontier making and the role of investors therein, including Mozambican local and national elites and entrepreneurs.

We propose a new way for understanding frontiers as constituted by the interaction of waves and legacies, based on empirical findings. We introduce our analytical framework and offer a “thick description,” based on the investors’ own understandings, narratives, and stories of the waves that arrived in Niassa after the civil war. We draw primarily from fieldwork data; secondary sources are cited to complete and corroborate information. Thereafter we identify the key legacies from these waves and discuss how the newest wave in Niassa builds, draws, and emerges from them. An analysis of the interaction between waves and legacies is offered next. The article concludes by highlighting the contribution made to frontier theory.

DEFINING WAVES AND LEGACIES

We define waves as successive groups of land-use actors that share common attributes and arrive or emerge in a (potential) frontier area around the same time. We build on, yet rework, earlier articulations of the metaphor of waves. Frederick Jackson Turner (1893), the first scholar to theorize on frontier, argued that Americanness originated in the historical movement of Euro-

American immigrants to the “free lands” in the Great West. His portrayal of a frontier was that of a moving frontier line of settlement comprising successive waves of actors (the trader and the trapper, the rancher and the miner, the farmer, and finally the townsman), each wave replacing the previous one as it advanced further west, thereby opening up successive frontiers (the trading frontier, the mining frontier, the farming frontier, etc.). Turner’s waves of actors and successive frontiers have been echoed in later work on settler farmers, particularly in the Brazilian Amazon (e.g., Godfrey and Browder 1996).^[5] But as these historical frontiers of small-scale farmers transitioned (Browder et al. 2008), came to coexist (Barbier 2012), or were overtaken (le Polain de Waroux et al. 2018) by more capitalized and market-oriented frontiers operated by medium- to large-scale actors, the concept of frontier also evolved. Populist (Godfrey and Browder 1996), settlement (Geiger 2009), and smallholder frontiers (le Polain de Waroux et al. 2018), started to be distinguished from corporatist (Godfrey and Browder 1996), capitalist (Pacheco 2005, Tsing 2005), neoliberal (Hecht 2005), and commodity frontiers (le Polain de Waroux et al. 2018). Barney (2009) analyzed the resource frontier of Laos by looking at successive frontiers, showing how a first frontier associated with French colonial and subsequent authoritarian rule was followed by a second neoliberal frontier driven by new corporate investments to produce the spatially patchworked frontier landscape of upland Laos today. Le Polain de Waroux (2019) showed how coherent waves or transnational producer cohorts of large-scale agricultural producers who came from a common geographical region and invested in the same frontier region had a substantial impact on the development of commodity frontiers in the Gran Chaco and Chiquitano of South America.

The metaphor of waves has been criticized for its connotations of linearity, irreversibility, and sustained success. Geiger (2009) criticizes Turner’s (1893:1) description of a frontier as “the outer edge of the wave” for its tidal wave image of sweeping transformation by a rapidly advancing frontier of settlers, until the lands became fully settled and the frontier closed. This image of a tidal wave or tsunami has dominated the literature, even though this pattern of sustained frontier expansion, inevitable frontier closure, and successful economic development has been claimed to have held empirically only in a few places such as the United States and Canada (Barbier 2012). Oftentimes, frontier actors struggle to survive and opened frontiers may close or fail before having been consolidated or resources exhausted. Frontiers operate through friction (Tsing 2005) rather than smoothness. Frontiers can retain their frontier character for a long time because they are “constantly reproduced” and “perennially re-negotiated” (Geiger 2009:26). “Frontier dynamics are not linear, but a-rhythmic and cyclical” (Rasmussen and Lund 2018:390). They may advance and recede or “boom and bust” (Agergaard et al. 2009:1) in line with fluctuations in world market prices for commodities. However, even when nonlinear frontier trajectories (le Polain de Waroux et al. 2018) and boom and bust patterns are recognized (Barbier 2005), frontier theories still see frontier development as monotonic, with frontier consolidation and closure expected in the long-run. Studies on frontier development hinge on the initial success of pioneers to understand how frontier expansion takes off (le Polain de Waroux 2019). What remains hidden and

forgotten, and we seek to uncover, are the failures of previous actors that may have preceded frontier emergence. These failures are important because, we argue, they may be productive of future successes.

To articulate the dimension of struggle and failure more clearly, we highlight the two-way movement of waves rather than the one-way movement conveyed by the image of a tidal wave. Waves come and go and this observation better captures the mobility, struggles, and failures of actors in frontier areas. By explicitly incorporating an element of failure (from the perspective of frontier actors), we account for the open-endedness and multi-directionality in frontier dynamics and trajectories.

We build on Edelman and León (2013), who identified three main cycles or historical waves of postcolonial land grabbing in Honduras that preceded the investments in oil palm plantations associated with the 2008 global land rush. Each new wave of investment had to face and was thus shaped by pre-existing rural particularities. They argue that to comprehend each of these waves it is necessary to understand how particular actors and new rural conditions had emerged from the previous wave. The first cycle of land grabbing, for coffee during liberalism, conditioned the second wave of foreign investments in banana plantations through infrastructure building, private appropriation of previously non-private land, the creation of a labor force from dispossessed people, and the government’s fiscal dependence on foreign investments. We propose to formalize these insights with the notion of legacies, that is, the physical, social, economic, political, and institutional sediments or deposits that waves of land-use actors leave behind as they come and go, and that shape further frontier dynamics. We are interested in the productive side of historical legacies. Most of the literature that employs such a perspective in the context of land-use investments has focused on physical or social dimensions of legacies, such as landscape modifications (e.g., Håkansson and Widgren 2014) and social networks (e.g., le Polain de Waroux 2019). Aside from physical and social dimensions, we also identify legacies with economic, political, and institutional characteristics such as financial capital, land conflicts, and land-tenure legibility. We highlight the historical continuities and processes that connect successive waves in a region rather than the breaks and suspensions that, for example, Rasmussen and Lund (2018) emphasize in their cyclical analysis of frontier dynamics, i.e., that acts of frontier making erase and dissolve institutions of resource access and control to establish institutional orders anew. We argue that it is not about the sweeping transformation of a tidal wave but the layering of gradual changes as waves come and go.

WAVES

Historical background

The first foreign-owned company to invest in Niassa was the Niassa Company (Companhia do Niassa), a chartered company that in 1891 during the colonial period was granted the whole region north of the Lúrio River, i.e., present-day Niassa and Cabo Delgado provinces, by the Portuguese. Losing capital in efforts to pacify the region and on financial speculation, the company failed to make a profit (Neil-Tomlinson 1977, Galli 2003, Newitt 2017). It did, however, open roads and set up administrative posts (Neil-Tomlinson 1977). The Niassa Company also facilitated the start

of a wave of colonial actors involved in plantation agriculture as it granted a few small and medium-scale agricultural sub-concessions, and company officials also had their own plantations (Neil-Tomlinson 1977, Galli 2003). Originally Portuguese, the company changed hands several times: British, South African, German, and finally British again (Neil-Tomlinson 1977, Newitt 2017). During the First World War, northern Mozambique became a major battle ground (Galli 2003) following German invasions from present-day Tanzania into the company's territory (Newitt 2017). The chaos that ensued reversed the little authority that the Niassa Company had achieved in this vast area. So, when the charter expired in 1929, it was not renewed (Newitt 2017), and the Portuguese assumed direct control over the region (Neil-Tomlinson 1977).

In the period 1937–1940, cotton companies were given thousands of hectares and forced local farmers to grow cotton (Isaacman et al. 1980, Galli 2003). At the same time, Portuguese colonists, which were few in comparison to central and southern Mozambique (Hall and Young 1997), continued to operate agricultural plantations, also depending on forced labor (Galli 2003). Around Lichinga, the provincial capital of Niassa, the colonial state established pine tree plantations (MA 2006, Bleyer et al. 2016; Waterhouse, Lauriciano, and Norfolk 2010, *unpublished manuscript*, <https://www.open.ac.uk/technology/mozambique/sites/www.open.ac.uk/technology/mozambique/files/pics/d128185.pdf>), and according to an interviewee, there was also a Portuguese-owned dairy farm. In general, however, Niassa remained largely neglected by the colonial authorities and little infrastructural advancements were made (Galli 2003). Weak colonial state control (Isaacman et al. 1980) was taken advantage of by the Mozambique Liberation Front (Frelimo, *Frente de Libertação de Moçambique*), who initiated the war for independence in 1964 from bases in Tanzania (Hall and Young 1997, Newitt 2017). Frelimo attacked settlers and commercial establishments, and destroyed key infrastructure such as bridges (Galli 2003). Portuguese settlers and a large portion of the local population fled from Niassa (Galli 2003), leaving Niassa and the country at large with a nearly ruined agricultural sector (West and Myers 1996, Hall and Young 1997, Newitt 2017).

After independence in 1975, agricultural policy was designed on the principles of socialist modernization (West and Myers 1996, Hall and Young 1997). A new wave of state farms and state-run agricultural projects followed the nationalization of many of the abandoned plantations and settler farms. West and Myers (1996) identified seven state farms in Niassa, amounting to at least 50,200 hectares. Four of these state farms were located on the fertile Lichinga plateau, and there was also at least one state forestry plantation. Some, if not all, of these state farms were integrated in a very large and ambitious agricultural project called the Four Hundred Thousand Hectare Enterprise (*Empresa Quatrocentos Mil Hectares*) that extended over the Niassa and Cabo Delgado provinces (West and Myers 1996, Galli 2003; Waterhouse, Lauriciano, and Norfolk 2010, *unpublished manuscript*). This project was initiated in the early 1980s, and various East European and Asian countries provided technical assistance and agricultural equipment to roll out large-scale mechanized agriculture (West and Myers 1996, Galli 2003; Waterhouse, Lauriciano, and Norfolk 2010, *unpublished manuscript*). The Matama state farm (*Empresa Agrícola de Matama*) for example,

was established in 1979 close to Lichinga, ran by Chinese who produced rice, and employed 1500 workers (UNAC and GRAIN 2015).^[6] The civil war that broke out in 1977 eventually forced the closure of the Four Hundred Thousand Hectare Enterprise after the Mozambican National Resistance guerrilla (Renamo, *Resistência Nacional Moçambicana*) killed 12 of the foreign staff and destroyed much of the infrastructure (Galli 2003). Renamo came to control parts of northern and central Mozambique during the civil war.

The brutal and protracted civil war made Niassa a no-go zone for investors until 1992 when the war ended (Juergensen and Pereira Krugman 1997). When local farmers who took refuge in neighboring countries came back, some returned to growing tobacco and cotton but now under contract farming arrangements with foreign companies (Juergensen and Pereira Krugman 1997, Galli 2003). This aligned with the country's transition toward capitalism and the introduction of neoliberal policies that encouraged foreign investments into all sectors including agriculture, which was seen as the best way to fast-track development and recover from the war (Salomão 2020). Mozambique's shift to capitalism started in the late 1980s following the country's economic collapse and it joining the structural adjustment programs of the World Bank and the IMF (Hanlon and Smart 2008). The country gradually became dependent on donor aid (De Renzio and Hanlon 2007), and administrative corruption and opportunistic state capture by elites increased (Hanlon 2004). It is in this context that Niassa slowly opened up to companies and foreigners.

“Life is hard on a family here”: missionary farmers

Christian missionaries were the first to arrive in Niassa after the war stopped. Those who would later get involved in farming arrived between 1992 and 1995. Missionaries came with their families, or formed families later, and most were South African Afrikaners linked to the Dutch Reformed Church. The Dutch Reformed Church in South Africa is a Protestant denomination with a Calvinist creed that traces its origins to the first white settlers that arrived in Cape of Good Hope from the Netherlands in the mid-17th century (Giliomee 2011). They and their descendants later came to be known as Afrikaners (Giliomee 2011).

We call this group of Christian missionaries that took up commercial farming “missionary farmers” to distinguish them from a later wave of Afrikaner farmers, because their motivation for moving to Niassa was, in the first place, missionary, i.e., to spread Christianity, and not because of the availability of land to farm. They explained their move to Niassa as a decision made in close consultation with God through prayer. “I felt the Lord wanted us to come and I checked it with my wife and she felt the same,” explained one missionary farmer. The general pattern in their stories was that faith brought them to Niassa as the north was an isolated region where people had not heard about God and the Bible. They had decided to come to a country where during colonial times the Catholic Portuguese had blocked Protestant missionary work (Morier-Genoud and Anouilh 2012), especially in the north, and during socialist times the government had been determined to destroy any religion (Serapiao 1993). Unlike southern Mozambique where Protestantism was much more established (Harries 1998), the north lacked protestant churches

after the civil war. This, they felt, was a place where it made sense to promote Christianity. But they also felt that they could make a difference aside from the evangelizing mission because Niassa was an undeveloped and poor province without schools and clinics, and people lacked means to earn a cash income.

Mission stations were ideally located in “the middle of nowhere” and consisted of a pastor, a teacher, a farmer, a doctor, and their families, each professional serving the local people through their skills and expertise. The missions were expected to become financially sustainable in the long run through economic projects like commercial farming. However, with Mozambique coming out of its socialist phase, registering commercial ventures and other business activities was difficult. To facilitate this and to save the trouble of registering each and every commercial activity in the missions, it was decided in 1995 to set up a single company that could serve as an umbrella company for all these smaller commercial projects.

Beyond the practical motivation, the vision was broader: the umbrella company was seen as a vehicle for Christian businessmen to come in and develop and invest in the country, especially in agriculture, and in rural areas that did not get much government attention such as rural Niassa. The dream was to introduce an approach at doing business that serves society and is based on the Christian values of honesty, fairness, integrity, and justice and ethics in the workplace. This includes not giving in to corruption no matter how much easier and financially attractive it may be as well as choosing investment projects not only for their profitability and viability, but, importantly, for their potential to improve the living conditions of the local population.

Most of the missionaries that arrived after the civil war have since returned to their home countries. As one missionary farmer explained: “Life is hard on a family here” and the well-being of the family, a key social institution for Afrikaners (Giliomee 2011), is especially important. Living in a remote farm, with malaria, no good schools (children are typically home-schooled by their mothers), weighted on these families. Often the wives got tired of living in the bush or the children grew up and needed higher education. Some had to go back because of health issues, because church support dried up, or because they finished their work (like translating the Bible into the local language). Only three of these missionary farming families remained behind and are still farming in Niassa.

The farms of those that stayed are middle-sized, and their commercial activities include sunflower oil production, coffee, citrus fruits, dairy farming (yoghurt, cheese), and beef farming. However, they are all struggling to keep a viable business and earn a living from their farm. Coffee is technically a very difficult crop, requiring knowledge and experience, especially when lacking neighbors from whom to learn. Sunflower supply has become insufficient to keep the oil factory running as many local farmers have turned to tobacco that pays better. Attempts at growing jatropha, developing essential oil production and commercializing goats, all failed. For those farms located in remote and isolated places, distance to the local markets and the accompanying cost of transportation over bad roads is one of the biggest challenges, especially for commodities that cannot be stored for long, like fruits. Transportation costs have wider implications. Within Mozambique, Niassa is isolated and lacks access to basic inputs

and services like a well-stocked veterinary pharmacy, good quality animal feed, agricultural chemicals, agricultural equipment, and spare parts for machinery. Such key inputs need to be brought by plane or via bad roads from Nampula, Maputo, and even all the way from South Africa, or illegally from Malawi and Tanzania, hiking up prices. Bureaucracy, import duties, taxes, fines, lack of good agricultural and business information, customs, work permits, and administrative corruption make doing business difficult and costly, not only for the missionary farmers but for commercial farmers in general. Last, with business partners leaving and internal problems emerging, the initial optimism surrounding the Christian umbrella company slowly gave way to disillusionment. Those that stayed carried on as best as possible.

“They left us like a rotten potato”: white South African commercial farmers

Toward the end of 1996, between 11 and 17 (depending on the source) white commercial farmers trekked from South Africa all the way to Niassa in search of land to farm. The story goes that these Afrikaner farmers were on the road for about three weeks, bringing with them agricultural equipment and farm machinery like tractors. Some were joined by their families, living in their caravans during this journey, while in other cases, the families joined them later in Niassa. This voyage is reminiscent of the Great Trek of the 1830s when thousands of Afrikaner families moved out of the Cape Colony, carrying their possessions and camping out in their ox-wagons, to pioneer farms in “the deep interior” (Giliomee 2011), and the Niassa trek was heroically compared to this historical trek by outsiders and participants alike (Juergensen and Pereira Krugman 1997),^[7] and even captured in a 1997 documentary called *Mozambique: The New Voortrekkers*.^[8] The historical Great Trek was partly to escape British rule following their conquest of the Cape, but it was also the lure of seemingly abundant land that drew Afrikaners, or Boers (“farmers” in Afrikaans), to move to the north-eastern frontier (Giliomee 2011). The trek to Niassa was seen as a continuation of this north-eastern expansion in search for land as much as for freedom and independence, as one of the 1996 Afrikaner farmers put it: “I like to be free, I like ... open [spaces] ... [and to be] on my own, ... if I was just 10 years younger I would’ve moved more [to the] north. Maybe Tanzania or Kenya. I think it’s in the blood.” A key difference between the frontier farmers of the 19th century and those that moved to Niassa is that whereas the former sought independent subsistence farming, the latter were decidedly commercially oriented.

The move by these white South African commercial farmers was metaphorically a “real” wave because, as the story goes, they all left their place of origin together and arrived in Niassa at once. This wave mostly resembles the transnational producer cohorts of South America that move across national borders in pursuit of cheap land and new opportunities (le Polain de Waroux 2019), because they came from a core agricultural region (South Africa), belonged to the same social milieu (Afrikaner), and moved to the same frontier area (in Niassa). However, different from the South American farmers where investment decisions were more spontaneous and the move was started by “visionary” pioneers, the move of the South African commercial farmers to Niassa was largely government-initiated.

In May 1996, Joaquim Chissano, president of Mozambique, and Nelson Mandela, president of South Africa, signed a bilateral agreement that established a new development program called Mosagrius (Chossudovsky 1997, Juergensen and Pereira Krugman 1997, Braga 2001, Mpate 2006).^[9] To implement the program, a joint venture company was set up called the Mosagrius Development Society (Braga 2001, Mpate 2006; Alberts and Öhlund 2001, *unpublished manuscript*), where the South African Chamber for Agricultural Development in Africa (SACADA) held 50% of the capital and the Mozambican government the other 50% (Chossudovsky 1997, Braga 2001, Mpate 2006; Alberts and Öhlund 2001, *unpublished manuscript*). The idea behind the Mosagrius program was to provide white South African farmers with land to farm, and in return, they would bring capital, knowledge, and technology to develop large-scale commercial agriculture in the province. Mozambicans would benefit from the development of large-scale commercial farming and some would also participate in the program. The Mosagrius program was in line with new government policy seeking to attract foreign investors to develop agriculture in Mozambique (Alberts and Öhlund 2001, *unpublished manuscript*). Initially, the South Africans wanted to go to Gaza province in southern Mozambique, but after a meeting with one of the missionaries from Niassa, their interest shifted to Niassa because the population density was lower and there was plenty of fertile farmland. On their side, the Mozambican government also preferred Niassa, because the probability of land conflicts was lower on account of the low population/land ratio but also because Niassa was the poorest province in the country and thus in dire need of development.

According to Chossudovsky (1997), the Mosagrius program was born out of a larger plan by the right-wing Afrikaner Freedom Front party in South Africa to invest in Angola, the Democratic Republic of the Congo (DRC), Zambia, and Mozambique, with Mozambique being the test case.^[10] The Freedom Front, known for their pursuit to establish an Afrikaner independent state, wanted to develop a “food corridor” in the southern African region by establishing Afrikaner-owned commercial farms in South Africa’s neighboring countries. SACADA would function as the institutional umbrella organization for this initiative. Different from earlier migrations of white commercial farmers to Zambia and the DRC, this trek received political backing and financial support from the South African government. As Chossudovsky (1997) explains, government support must be understood in the political climate of South Africa at the time. The apartheid system officially came to an end with Mandela’s election as president in 1994, and the country was developing a land reform program to redistribute land owned by white farmers to black farmers. For the Mandela government, the move out of white farmers to neighboring countries was seen as a way of relieving land pressures within South Africa and facilitating this land reform while appeasing white farmer interests. Chossudovsky (1997) makes the controversial argument that SACADA’s food corridor project was not really about development in neighboring countries but rather about “exporting apartheid.” Most interviewees who talked about the Mosagrius program missed this conspiratorial and sinister overtone, with some missionary farmers even welcoming these investments for the agglomeration effects they hoped would be

generated (such as better input prices and an improvement in agricultural services).

Regardless of the motives of the South African actors, white South African commercial farmers arrived in Niassa and, through the Mosagrius program, were literally given land for free: “We could go and choose what we wanted,” where they wanted, and as big as they wanted, for 50 years (Juergensen and Pereira Krugman 1997; Alberts and Öhlund 2001, *unpublished manuscript*). The government of Mozambique made 220,000 hectares of land available for the Mosagrius program (Mpate 2006; Alberts and Öhlund 2001, *unpublished manuscript*). Although most South African farmers claimed portions of around 3000 hectares, they only ended up opening 500 hectares or less. The primary crops cultivated were maize and beans. Others included tobacco, paprika, and livestock.

Although the farmers produced very good crop yields,^[11] they struggled to be commercially viable and the Mosagrius program slowly crumbled into a complete failure. Four reasons were given for this failure (see also Mpate 2006; Alberts and Öhlund 2001, *unpublished manuscript*), presented here in order of the ascribed importance by interviewees. The first and the biggest problem was infrastructure. The Mozambican government had promised to improve the roads to reach the markets further south in Nampula, Beira, and Maputo, but this did not happen. One of the commercial farmers recalled how during a scouting visit in early 1996, he had been enthusiastic about the soils and the people but recognized that good road infrastructure was missing, but the Mozambican authorities had promised to put them in place and so he came anyway. The issue of bad connectivity should not be underestimated: at least one farmer lost a complete harvest because the agricultural chemicals arrived too late. Second, SACADA had promised to attract international capital to support the farmers with credit for seeds, diesel, fertilizer, chemicals, etc., but this was not forthcoming either. One reason was that investors were hesitant to invest in Mozambique because it had recently come out of the civil war. SACADA eventually pulled out from the program and handed over the Mosagrius Development Society to their Mozambican counterparts in 1999 (Alberts and Öhlund 2001, *unpublished manuscript*). As one interviewee put it: “They brought us here with a lot of promises and now they left us like a rotten potato.” The Mozambican authorities lacked the experience to run such a project and also struggled to mobilize finance. Third, the South African farmers themselves, who did not speak Portuguese and were described by some interviewees as “arrogant,” had not been prepared for the lack of infrastructure (not only roads, but also electricity, running water, etc.) and the different farming conditions (climate, soil, sicknesses) compared to their South African homelands, and, as was being rumored, some had not really been professional and skilled farmers at all. Many thought that they could start planting immediately like they were used to in South Africa where practically all available arable land had already been opened up, but they first had to clear all the bush. They had not anticipated that they had to start from zero. Start-up loans from SACADA ended up being used for the unforeseen expenses of clearing the land and building roads. The need to open up roads stemmed from the decision by the Mozambican authorities that large-scale farms had to be located at least three kilometers away from the public roads (Alberts and Öhlund 2001, *unpublished manuscript*),

leaving the land along the main roads for the local farmers. Finally, some South African farmers had a number of ongoing and unresolved conflicts with local people about land, access to resources, and unpaid salaries (Braga 2001, Galli 2003).

So, after two years of making little or no profits due to the high transportation costs, earning no returns, and only losing money, farmers gradually started selling their equipment and packing their stuff, and while most went back home (Alberts and Öhlund 2001, *unpublished manuscript*) others moved on to central Mozambique (Alberts and Öhlund 2001, *unpublished manuscript*) to join a wave of evicted white Zimbabwean commercial farmers trying to rebuild their agricultural livelihoods across the border in Manica province (Hammar 2010, 2013).^[12] They abandoned the lands they had opened up and the houses they had built. By 1999, only five South Africans from this wave still farmed in Niassa (Alberts and Öhlund 2001, *unpublished manuscript*), but eventually, they all left. The one farmer who remained does not farm anymore.

“You want to plant? We have the land!”: Malonda and the large-scale forestry companies

The lands of the unsuccessful Mosagruius program were taken over by a local organization called Malonda Foundation (henceforth “Malonda”; Hanlon 2011, Matavel et al. 2011).^[13] Malonda was initiated in 2000 (Alberts and Öhlund 2001, *unpublished manuscript*), but legally established in 2005, with Swedish donor money. It was part of a larger development program, also funded by Sweden, which had four components of support: to infrastructure, the public sector, civil society, and the private sector. Malonda, which means “business” in the local Chiyao language, was created as part of the last component. Its main task was to promote Niassa’s potential for agriculture, forestry, and tourism, and attract and facilitate investment. Around the same time that Malonda was being set up, a National Reforestation Strategy was being prepared, which was geared toward private-sector-led development of Mozambique’s forestry industry and identified Niassa as a potential investment destination (MA 2006). Together, these two institutional developments set the scene for the arrival of a new wave of large-scale land-use actors in Niassa.

Between 2005 and 2008, there was an influx of foreign investment for the establishment of large-scale, monoculture tree plantations in Niassa. Foreign investors being mandated to register a domestic company (Orlowski 2016), five domestic forestry companies were set up, which we call the pioneer companies and their foreign investors, the pioneer investors: Chikweti Forests of Niassa and Companhia Florestal de Massangulo (sister companies, majority-owned by the Swedish-based investment fund Global Solidarity Forest Fund, GSFF), Florestas de Niassa (set up by Rift Valley Corporation from Zimbabwe), Malonda Tree Farms (majority owner Norwegian company Green Resources), and New Forests Company (a subsidiary of the British New Forests; Fundação Malonda 2010, Hanlon 2011, Orlowski 2016). All these companies were highly capitalized, employing hundreds or thousands of workers, and planted large areas with pine and eucalyptus (fast-growing, non-native tree species), especially on the Lichinga plateau. By 2010, the forestry companies (except Companhia Florestal de Massangulo) had in total invested 38.5 million dollars, planted 18,500 hectares of land, and employed

4787 workers (Fundação Malonda 2010). Estimations indicate that five years later, these companies and subsequent arrivals had forestry plantations covering 31,212 hectares of land (WB 2016), amounting to about half of the country’s area under forestry plantation (Serzedelo de Almeida and Delgado 2019). Yet, independent remote sensing estimates suggest that these numbers are overreported, and identified 17,500 hectares of tree plantations in the four northern provinces in 2017 (Bey and Meyfroidt 2021).

Apart from Chikweti and Companhia Florestal de Massangulo (the very first companies of this wave), these investments came to Niassa through Malonda.^[14] Malonda actively worked to convince interested parties of Niassa’s potential by showing them their own forestry project Florestal de Mussa set up for this purpose, with a 1000 hectares tree plantation and a nursery. They offered logistical support for scoping the area. Once investors were convinced, they supported them with the bureaucratic process to swiftly get licenses to operate, provided information (about the land law for example), and tackled obstacles such as taxation and infrastructure. In short, Malonda’s job was to promote Niassa as an investment destination, assist the investors with setting up new projects, and create an enabling environment for foreign investments. All this eventually boiled down to facilitating land acquisition.

Meanwhile, the new 1997 land law, designed to protect local community rights as well as attract new investment (Salomão 2020), was slowly coming into practice (Tanner 2002). According to the Mozambican constitution, land belongs to the state and cannot be sold, bought, or mortgaged (2004 Constitution of the Republic of Mozambique, Article 98(1), Article 109[1, 2]). So the new land law introduced a land-use right (*Direito de Uso e Aproveitamento da Terra*, DUAT; Tanner 2002; Land Law No. 19/97 of 1 October, Article 1[2]). Mozambicans already occupying land automatically have a permanent DUAT without need for registration (Tanner 2010; Land Law, Article 12). DUATs for Mozambicans with no previous links to the land in question, foreign individuals and companies, must be applied for, registered; and mapped (Land Law, Article 12), and represent a permission to use the land (Hanlon 2011). They may be granted for 50 years and renewed once for another 50 years (Land Law, Article 17; Land Law Regulations, Article 18[1, 2]). Community consultations to determine the availability of land are mandatory for all new DUAT applications (Land Law Regulations, Article 24[1]), and constitute one of the means through which investors gain access to land as local people cede their rights in exchange for agreed benefits (Tanner 2010, Fairbairn 2013).

Malonda added to their land base by acquiring new DUATs, conducting the community consultations (Åkesson et al. 2009) and doing the environmental impact studies using funds received from donors. Thereby, by 2010, Malonda had DUATs for over 90,000 hectares in total (FIAN 2012).^[15] With the DUATs in hand, they approached the investors, and, as a Malonda representative explained, told them, “You want to plant? We have the land!”

Malonda found itself in a good bargaining position vis-à-vis interested forestry investors. By offering ready-made, registered DUATs to large areas of land, Malonda negotiated for 20% of the shares in the (joint-venture) companies that were set up to start forestry projects in Niassa. A company, Malonda Society,

was created as the commercial arm of the Malonda Foundation to legally manage the shares and other assets. By 2015, Malonda and all of Niassa's forestry companies together, held a combined DUAT area of 155,470 hectares for forestry plantations (WB 2016).

Around 2010, Malonda started to run into trouble and so did most of the pioneer forestry companies. In 2012, Malonda's shares in the various companies were diluted after it could not raise the finance when the other investors wanted to increase the capital. A year later, Sweden stopped their funding to Niassa, including to the Malonda Foundation (see also Orlowski 2016). At the same time, as the forestry companies started to be accused of land grabbing, the companies were putting pressure on Malonda to handle the growing land conflicts with local communities, as they were responsible for all DUAT-related issues. Several studies (Overbeek 2010, Hanlon 2011, Matavel et al. 2011, FIAN 2012, Orlowski 2016; Waterhouse, Lauriciano, and Norfolk 2010, *unpublished manuscript*) describe the negative impacts of Niassa's plantations on local people's livelihoods and food security, and also accuse the forestry companies and Malonda (Åkesson et al. 2009) of holding inadequate community consultations and breaking promises. While recognizing that local jobs were indeed created in the initial project stages, critics considered these insufficient to make up for lost livelihoods.^[16] Conflicts broke out and local communities protested by setting plantations on fire (Overbeek 2010, Hanlon 2011, FIAN 2012, Orlowski 2016). Some fires may have been unintentional, as a result of the uncontrolled clearing of land for shifting cultivation (Mbanze et al. 2013). Either way, Niassa's forestry companies lost thousands of hectares to fires, with one losing nearly 3000 hectares in 2010 and 2011 only (Mbanze et al. 2013).

The international media attention that the land-grabbing accusations generated prompted Malonda and one forestry company to replace their management and boards in 2010/2011 (Hanlon 2011, FIAN 2012). However, according to investors, reasons more crucial than land conflicts explain Niassa's emerging forestry industry's collapse. The biggest blow was a failed investment by one of the top global forestry companies in the world, the Finnish United Paper Mills (UPM). UPM, through its Uruguayan subsidiary, wanted to plant trees in Niassa but also intended to build a pulp mill. For the (smaller) pioneer companies, this pulp mill would have guaranteed a nearby market for their trees, thus sparing them high transportation costs. After negotiations with Malonda (Hanlon 2011, FIAN 2012), UPM set up a domestic company (Florestas de Planalto), which started activities in Niassa in 2011 and three years later had planted 1200 hectares (Blid 2014, *unpublished manuscript*, https://www.open.ac.uk/technology/mozambique/sites/www.open.ac.uk/technology/mozambique/files/files/Finlandia-Niassa_Industrial_Florestal_e-Movimento_Sindical.pdf). In early 2013, it was publicly announced that UPM had signed a Memorandum of Understanding with the government of Mozambique for an allocation of 200,000 hectares,^[17] with a planned investment of US\$2 billion (Hanlon 2011). However, later that year, UPM suddenly withdrew, and this had a ripple effect on all the other companies because they had all been betting on a pulp industry to develop in Niassa (see also FIAN 2012; Blid 2014, *unpublished manuscript*). At least one company had planted a tree species that was particularly suitable for pulp, but now the anticipated local

market was gone. UPM announced their withdrawal in late 2013, citing the slow pace of the land acquisition process due to time-consuming community consultations (Blid 2014, *unpublished manuscript*). Shortly thereafter, in 2014, all of the pioneer companies started scaling down their activities, firing senior staff and looking for buyers. Two of them eventually found buyers (Serzedelo de Almeida and Delgado 2019) and the remaining three companies, as well as UPM's domestic company, were consolidated through Green Resources (see also Orlowski 2016, and also GR 2019, Serzedelo de Almeida and Delgado 2019). This pioneer investor thus emerged as the only survivor of the forestry crisis in Niassa.

Niassa's forestry sector has not recovered from that mid-2010s crisis. The impression during fieldwork was that all remaining companies, including Green Resources, were struggling to raise additional capital, and in the case of Malonda, to find donor money. In 2017, there was a second round of mass sacking, scaling-down of operations, and selling of equipment. New owners have barely invested in maintenance and expansion; instead, they have focused on harvesting the standing plantations and selling it as firewood (a low value output) to a tobacco company for its contract farmers to use for curing tobacco. The fires are an ongoing and recurring problem.

Characteristics and dynamics of Niassa's post-civil war waves

The waves described above reveal a pattern that starts with the arrival of new actors, their relatively smooth access to land, and the start of land-use activities. This relatively frictionless start, full of promise, is followed by a period of struggle as the realities of making a profit or earning a living in such a remote area start to sink in. A recurring challenge across the three waves was access to markets, whether hindered by undeveloped road infrastructure or because the anticipated local market did not materialize. Another issue shared by many actors was access to finance. As the situation becomes untenable, most or all of the waves' actors abandon or sell their operations and leave. A few diehards remain and try to stay afloat.

All three waves were driven by actors coming from outside Mozambique, and each group of actors shared a common background. The forestry companies shared a corporate background that was transnational, highly capitalized, and focused on the production of large-scale tree monocultures. The missionary farmers and the white South African commercial farmers had the same social background (Afrikaner) but can be distinguished by their motivation for going to Niassa. Whereas the motivation of the missionary farmers was religious, for the South African commercial farmers it was the promise of free land to farm. The forestry companies were similarly drawn to Niassa by the promise of large expanses of land. Motivations might differ in their specificity, but underneath, all three groups were looking for new frontiers, albeit of different sorts. The forestry companies and the South African commercial farmers were seeking land-use frontiers. The missionary farmers were seeking frontiers for the expansion of Christianity (see also Imamura 2015); however, as they took up commercial farming, they also contributed to land-use change. Actors' narratives contained some elements of frontier rhetoric (Larsen 2015). "Isolation," "remoteness," or "inaccessibility" were recurring themes, both as a pull factor (missionaries sought out isolated locations to establish missions)

as well as a reason of failure (markets, services, and agricultural inputs are far away). Niassa was lauded as having plenty of land and great agro-ecological potential (“the next breadbasket of Africa”) but also as a trying and unforgiving environment for doing missionary work, for families to thrive, and for businesses to operate. Frontier actors displayed a pioneering spirit that valued freedom, entrepreneurialism, and perseverance, as they looked for “spaces of opportunity” (see Imamura 2015).

The arrival of each wave and the smooth start of land-use operations was facilitated by mediating institutions: the Christian umbrella company, the Mosagrius program, and the Malonda Foundation. These institutions provided the newcomers with support to set up their businesses, access land, and deal with local communities. They were created, respectively, by Dutch Reformed Church missionaries, the South African and the Mozambican government, and by the Swedish development agency, and therefore the waves can be seen as Christian-facilitated (religious motivation), government-facilitated (with distinct political agendas, South Africa to facilitate land reform at home and Mozambique to foster economic recovery from the war), and donor-facilitated (development is the goal). Jepson (2006), who studied colonization firms and agricultural cooperatives in eastern Mato Grosso in Brazil, shows how mediating institutions may play a key role in the emergence of commercial agricultural frontiers in remote regions, by providing incoming colonists with the initial conditions for settlement (e.g., facilitating access to secure land tenure) and reducing the overall costs and risks of agricultural production for individual farmers. In Niassa, mediating institutions might have done well in the initial stages of the wave but they too, like the individual land-use actors, eventually found themselves in trouble and some even contributed to the failure of the different waves. Importantly, although separate waves can be identified, these waves overlapped, interacted, and individual actors remained after the waves dissolved and currently co-exist in the Niassa landscape along with the legacies of these previous waves.

LEGACIES

Since 2012, a new wave has been forming in Niassa, which we studied through seven investments, covering most of those we could identify. The group of actors in this new wave is more diverse than those of the previous waves, as they do not share the same social or corporate background. What this group does have in common, however, is that they were all already active in, and thus familiar with, Niassa and northern Mozambique before they ventured into commercial agriculture and forestry. Unlike the actors from earlier waves that came from outside Niassa, this group thus emerges and develops from within the region, making use of the legacies and experiences of the previous waves, and tapping into the opportunities created by these.

Social networks

Social networks open up employment opportunities in frontiers (le Polain de Waroux et al. 2020), and facilitate land acquisition through information and access (le Polain de Waroux 2019). One of the legacies of the wave of missionary farmers is a social network built around the Christian umbrella company and the institutions of church and family. This network extends from Niassa, where it grew to include Mozambican missionaries and families, to South Africa, and has opened the way for a next generation of Christian entrepreneurs to venture into commercial

agriculture and forestry in Niassa. As one of the Christian entrepreneurs explained, “we are all strongly believing Christians and we pray together and we have a nice support structure ... it makes it easier [to do business]” because, he concluded, “there is too much that can go wrong here [in Mozambique].” The sons of a missionary, who had partly grown up in the region and had inherited their father’s passion for Niassa, were already doing business in Niassa as part of the Christian umbrella company (in the transport and filling station sector), when in 2015 they got the opportunity to buy one of the struggling forestry companies. Another missionary relative came to Niassa to run another of the Christian umbrella company’s non-farming businesses. Having owned a farm in South Africa before and recognizing the agricultural potential of Niassa, he invited a Mozambican friend, who is a fellow Christian and a missionary, to look for land and set up a commercial farm.

Financial capital

All three previous waves created employment and business opportunities that attracted entrepreneurs and a skilled workforce with savings, business profits, or access to finance, some of whom would use this capital to later set up commercial farms in Niassa. The wave of forestry investments had the largest impact in this regard. Forestry companies directly employed expatriates and Mozambican professionals (aside from local plantation workers), but the emerging forestry industry also had an amplifying effect on the local economy, drawing entrepreneurs from all over the country. Shops opened in Lichinga to supply goods and services, forest-industry service companies set up business in Niassa, the construction sector flourished, and filling stations opened all over the province (see also WB 2016; Blid 2014, *unpublished manuscript*). Five out of the seven new-wave investments were initiated by employees or ex-employees of a forestry company or a forestry-company service provider. Almost all these actors were urban Mozambicans, none native from Niassa. Some of them had farming experience, but others had totally different professional backgrounds, including a finance manager and a lawyer.

These actors were not highly capitalized like the transnational forestry investors. Their financial resources were, however, sufficient to acquire medium- to large-scale land, purchase farming implements, and set up farming operations. Accessing land in Mozambique is relatively “cheap” (Hanlon 2011:24) especially if you are already on site and have the time and patience to conduct community consultations. The DUAT application process may be laborious, but the monetary costs—survey costs, registration fee, the expenses to fulfil the promises to the communities, as well as the annual land tax—are very low compared to other countries (Hanlon 2011, Fairbairn 2013). For the moderately capitalized actors of the new wave, who had learned about the agricultural potential of the area while living and working in Niassa, the move into commercial farming was largely an opportunistic investment. As one of them explained, “it is a business opportunity, it is not something I always wanted. The law firm is my passion, I never thought of becoming a farmer.”

Brownfields

Three new-wave investments involved “brownfields,” i.e., lands that had been previously opened up, used, and developed (Alker et al. 2000) by actors from earlier waves, with infrastructure.

Brownfields may incorporate “landesque capital,” i.e., land improvements (Håkansson and Widgren 2014) and infrastructural developments, e.g., roads or buildings. Unlike the very large transnational companies in the mining and energy sector elsewhere in the region (Scholvin and Plagemann 2014), the smaller agricultural and forestry actors in Niassa have not invested in transport infrastructure beyond their farms and plantations or immediate surroundings. The acquisition of the failing forestry company by the missionary’s sons was a brownfield investment that included valuable standing plantations but also infrastructure like storerooms, houses, offices, and roads. The land that the Christian relative and his Mozambican friend had identified was one of the abandoned farms of the white South African commercial farmers that had come to Niassa through the Mosagrius program. They were enthusiastic about this piece of land for its rich soils, proximity to a river for irrigation, and to the main road that was being paved, but most importantly, because part of the bush had already been cleared. “Clearing the land is hard work,” as one interviewee put it, and the advantage of not having to start operations from scratch, which, as we have seen with a previous wave can be a costly endeavor, is especially of significance for moderately capitalized actors. The third brownfield investment was done by a British-based transnational investment company with an Africa-focused portfolio that had already been investing elsewhere in northern Mozambique. They acquired the land of the former Matama state farm that at that time belonged to the Malonda Foundation, and set up a large-scale agricultural operation. Like the other brownfields, this investor also benefitted from existing buildings and developments on the land. Earlier on, a fourth brownfield from the pre-civil war period concerned the farm of one of the missionary farmers, who used the existing infrastructure of an old colonial farm to build his dairy business.

Legible land tenure

Another advantage of brownfields for new-wave investors is that these lands have already entered official state records. Because they have been recorded in the cadastre in one way or another, they have become “legible” to outsiders and “manipulable” by the state (Scott 1998:33-52), and this simplifies the land acquisition process for new investors. Brownfields with different land-tenure legacies have different degrees of legibility. Private-sector DUATs are the most legible land-tenure units because they are clearly demarcated, mapped, and registered in the cadastre. There are two ways in which investors may benefit from this legibility to access land. The first is when an investor purchases the fixed assets from another investor. It is generally assumed that the underlying DUAT simply “follows” this purchase (Hanlon 2011:25) and the change of the name of the DUAT holder only needs state approval (Tanner 2002). In fact, one interviewee referred to this practice as “buying a DUAT.” Because the cost for a DUAT transfer is only administrative and land cannot be bought and sold officially, buying the buildings and improvements on land has become one of the means for investors to legally access land in Mozambique (Fairbairn 2013). Rural DUAT areas are often much larger than the land area developed and used up for infrastructure. Thus, when the missionary’s sons took over the assets from the failing forestry company, they also acquired DUATs that covered multiple times more land than the area that was actually planted or built, an immense added value. The second way in which

investors may access land and benefit from registered DUATs is by establishing a joint-venture company with the DUAT holder. This is what the forestry investors did when they partnered with Malonda, and also the large-scale transnational investment company when it acquired the old Matama state farm. They exchanged 20% shareholding of the new company for a DUAT that offered ample space for agricultural expansion. Both ways of acquiring a registered DUAT, i.e., through a transfer or a partnership, are especially favored by investors that want to avoid losing time with district-level government officials and during community consultations.

Old colonial farms are less legible than registered DUATs but still more than, for example, unregistered community lands. Tanner (2010) reports that colonial settler farms and plantations that were not converted into state farms still exist in the cadastre database with their original borders, even though they should have disappeared off the map with the post-independence nationalization of land. Their legal basis is unclear but land administrators treat them as discrete properties already alienated from communities that can be allocated to new investors (Tanner 2010). The colonial farm that now belongs to the missionary farmer might have been acquired in this way by the well-connected Mozambican individual who sold it to him.

A third land unit with a degree of legibility are the lands that were set apart in socialist times for large state-run agricultural projects. These projects pre-date the coming into full force of the 1997 land law with its new DUAT modality, and similarly to the colonial settler farms, remained “buried” in cadastral maps after their failure. Waterhouse, Lauriciano, and Norfolk (2010), *unpublished manuscript*, suggest that the land-use plans of the Four Hundred Thousand Hectare state project of the early 1980s guided the demarcation of the forestry concessions in the 2000s. Although it remains unclear whether the same land-use plans were used a decade earlier for the Mosagrius program too, some records of the lands that the South African farmers were given appear in the cadastre. When the Christian friends started the DUAT application process for the abandoned farm that they had identified, they discovered that maps already existed of the boundaries between the property and neighboring community land (see also Braga 2001). However, because no DUAT had been registered (Alberts and Öhlund 2001, *unpublished manuscript*), the land had reverted back to the community and therefore they still had to hold community consultations.

Institutions and policies

Several mediating institutions tapped into the experiences and knowledge of former ones to define their land-use policies and investment-facilitation strategies, which eventually influenced the trajectory of the different waves. It was only after the South African initiators of the Mosagrius program met with the initiator of the Christian umbrella company, through common contacts in a wider Afrikaner social network, that the former decided to go to Niassa rather than Gaza province. In another case, an institutional link even connects several waves. When the transnational investment company acquired the former Matama state farm from Malonda, they obtained land that Malonda had inherited from the Mosagrius program, who in turn had received this land from the state. Not only was the land passed on between different institutions across waves, but there was also an actual

institutional continuity that involved recycling and reworking strategic elements based on lessons learned. During Malonda's exploratory phase, a study (i.e., Alberts and Öhlund 2001, *unpublished manuscript*) was commissioned to explore whether Malonda should take over the Mosagrius Development Society and reactivate the Mosagrius program. The study recommended to take over the Mosagrius Development Society but also a thorough restructuring that, however, stilled focused on bringing in expatriate commercial farmers, although not the hundreds that had been envisaged for the Mosagrius program (Alberts and Öhlund 2001, *unpublished manuscript*). Malonda followed the study's advice only partly. It did take over the Mosagrius Development Society, which was renamed Malonda Society (the commercial arm of Malonda Foundation), and in this way legally acquired the land and other assets from the Mosagrius program. However, as we have seen, it eventually opted for large-scale forestry (Waterhouse, Lauriciano, and Norfolk 2010, *unpublished manuscript*). This decision was in part because forestry was thought to be more resilient than commercial agriculture, and also the idea that infrastructure (a major issue for the Mosagrius farmers) needed time to develop, and this could happen while planted trees grew. Also, the focus on forestry was in line with national policy discussions at the time on the potential of the forestry sector for rural development that culminated with a National Reforestation Strategy in 2009 (WB 2016).

Dealing with land conflicts

Although brownfields come with advantages for investors, they also carry the risk of inheriting land conflicts. The large transnational investment company reported conflicts that could be traced back to the time when the state granted the old Matama state farm to the Mosagrius program and some of the South African commercial farmers put up camp there. During the civil war, when the state farm had closed, the land had been re-occupied by local farmers (UNAC and GRAIN 2015) and conflicts emerged when the government tried to move them out to make way for the South African farmers (UNAC and GRAIN 2015). Eventually, the South African farmers moved on to other places. When the transnational investment company acquired the property in 2012, they found that local farmers still lived there and started to resettle them, reigniting tensions. These tensions have effectively prevented the company from expanding the land under production, which occupies only about a quarter of their DUAT area.

Conflicts with local communities are not restricted to brownfields and, as we have seen, have also occurred with "greenfields" (when operations are built from the ground up) such as the forestry plantations. This land-conflict legacy has had a noticeable impact on the way new-wave investors approach and relate to local communities. This is especially true for those investors that had come to Niassa for the opportunities created by the forestry boom: their first-hand experience with these conflicts, as forest-company employees or as forestry service providers, motivated them to do differently to avoid such conflicts. One actor, that had provided land-clearing services to forestry companies, expressed his disappointment and anger at the unfulfilled promises by a certain forestry company: "and the ... people are suffering and that's why I stopped ... and I'm going to do it in the right way, and I'm gonna build a company that not only can work well ... [but will also keep] ... promises made to the local people." This new-wave

entrepreneur and his business partner (a forestry-company employee) developed a business model that integrated smallholder farmers from the local community as "entrepreneur partners" in the enterprise. In addition, they decided to start small and proceed slowly, and to first clear and plant the community plantation.

Although some forestry companies allegedly only consulted and compensated the administrative authorities or the *régulos* (traditional authorities; see also Åkesson et al. 2009, Fairbairn 2013) that sometimes did not live in the villages directly affected by the investment, we have evidence of how one of the new-wave companies made sure to consult, compensate, and involve all the villages surrounding their concession. This company also made it a point of first fulfilling the promises made during the consultations (building a mosque, constructing a water well, etc.) before starting the actual work on the acquired land. Two other companies acquired relatively small areas of land and explicitly planned to stay small by investing in irrigation rather than in land expansion. New-wave companies thus seem to apply the lessons learned from the mistakes of the forestry companies: starting small or staying small and building up slowly, putting time and effort in the community consultations and building personal relationships with the local community, and, importantly, honoring the agreements made with them.

Business approaches

New-wave actors have inherited or drawn lessons from the business approaches of previous waves, which encompass but go beyond the more community-friendly approach described above. The new-generation Christian entrepreneurs lean more toward business than to missionary work, and although they started to work in Niassa through the Christian umbrella company, they have gone solo and set up land-use operations outside this framework. However, they still inherited the Christian approach at doing business, particularly the vision of having a broader societal impact, with some showing interest in a new agricultural approach called Farming God's Way (Spaling and Vander Kooy 2019), popular among missionaries elsewhere in Africa and gaining traction in Niassa. The Christian friends had a mixed commercial and social business plan, with the South African partner responsible for the commercial side and the Mozambican partner for the social side. They planned to provide on-site agricultural training to the youth and students from the Agricultural Institute in Niassa. Also, they wanted to open up the grounds for church groups and for retreats for children from the local orphanage.

Different from the forestry investments (tree monocultures) and the white South African commercial farmers (primarily maize), new-wave investors tend to run diversified operations. In this, they follow a similar approach to the missionary farmers that remained in Niassa, which tended to have other businesses, e.g., shops and a maize mill, diversified agricultural operations, and experimented with new crops, although they mostly targeted local and regional markets. New-wave actors also diversified, but differed in that they were also exploring markets nationally and internationally, especially with high-value, non-perishable crops like macadamia nuts and coffee that can overcome Niassa's transportation constraints. The missionary's sons, for example, diversified by investing in building a herd of beef cattle, planting

beans, and experimenting with a diversity of crops like macadamia nut, apples, and coffee. Their farm has become a large-scale combined forestry and agricultural operation. Among the forestry-boom actors, crops included macadamia nut (the sole focus of one of them), soya, different varieties of beans, maize, fruit trees (orange, mango), cabbages, and watermelon. The transnational investment company's core business is soya but they have more recently diversified into maize, sugar beans, potatoes, and certified seed. Though a diversification approach is relatively standard for independent and established farmers, it is not common practice among new investors. It is therefore possible that this diversification approach reflects learning and legacies from previous waves that failed because they were too focused on one product.

THE INTERACTION OF WAVES AND LEGACIES

The new wave illustrates how waves and legacies interact. Following an actor-centered approach, we saw how new-wave actors (and a few actors from older waves) used, benefitted, and learned from the legacies of previous waves to initiate and run their agricultural and forestry activities. New actors relied on contacts from social networks to relocate and invest in Niassa, or by being born into them. This was the case for the new-generation Christian entrepreneurs, who drew from the Christian-based social network built by the wave of missionary farmers, but also how a wider Afrikaner social network shaped the destination of the South African commercial farmers. New actors raised financial capital to set up companies by benefitting from the job opportunities and the economic boom created by previous waves. They reaped the fruits from existing infrastructure and developments as they took over or occupied abandoned brownfields (which could be occupied by local farmers), or partnered with DUAT holders of brownfields. These actors also benefitted from the land-tenure legibility that comes along with brownfields, which can date back to a preceding wave but that can also have increased over time as properties changed hands with each wave and became more established in official records. Some new-wave actors drew lessons from the way former investments led to land conflicts, by designing business models to avoid such conflicts and being more forthcoming toward local communities. Yet this does not guarantee there will be no conflicts in the future. But business approaches were also influenced in other ways by previous waves. Christian entrepreneurs embraced the Christian approach at doing business from the missionary farmers, and many new-wave actors decided to invest in diversified operations because single-crop oriented farms had proven to be unviable. Finally, we saw how mediating institutions strategically adopted, adapted, and left out elements of institutions and policies devised by former ones to avoid making the same mistakes.

If we focus on individual investments from the new wave, we see that they simultaneously drew from various legacies. For example, the Christian entrepreneur who came to Niassa through the Christian social network, found a business partner through that same network, planned to apply a Christian business approach, and acquired a brownfield that also had a degree of land-tenure legibility. Another example is the Mozambican finance person, who raised her financial capital from salary savings while employed in a forestry company, and who tried to build a more positive relationship with the local community to avoid conflicts.

A third example is the transnational investment company that partnered with a mediating institution (the Malonda Foundation), and thus acquired a brownfield with land-tenure legibility, and more recently adopted a diversified business approach. Although most of the legacies were the result of a previous wave, connecting two waves, some legacies have a longer history linking several waves. These legacies, brownfields and land-tenure legibility in particular, gained strength each time actors of successive waves built on them.

Accumulated and combined legacies enabled Niassa's new wave. They influenced the land-use decisions (whether, where, and when to invest) and practices (how to invest) of new actors, including Niassa as a destination. In other words, old waves gradually shaped, through their legacies, Niassa's investment conditions, thereby opening the way for a new wave to emerge.

CONCLUSION

Frontiers emerge out of the interaction and articulation of waves and legacies, and an actor-focused approach of waves and legacies allows for understanding the broader interplay between exogenous forces and local historical processes. As waves of outside actors arrive at a (potential) frontier area seeking to set up farms or plantations, they do not enter an empty space but encounter an unfamiliar world of existing relations, practices, and institutions, and ongoing processes and struggles. Through their endeavors in the frontier, whether successful or not, they become entangled with this world and co-produce the frontier, reshaping the social, economic, physical, institutional, and political investment conditions as they leave legacies behind. So, in effect, every pre-frontier region in which a wave arrives might have been partly formed by the productive failures and legacies of previous waves. Conversely, new waves of land-use actors tap into and capitalize on the legacies of previous waves to overcome constraints and frontier challenges.

With its relative abundance in land and natural resources and growing investor interest and activity, Niassa and northern Mozambique present the ingredients of a new investment frontier. This frontier has been in the making for a long time, moving from an emphasis on family-based commercial farming (missionary farmers, white South African commercial farmers) toward corporate structures, peaking with the highly capitalized forestry wave, and then with a new wave. This new wave blended relations of trust (extended family, friends, fellow Christians) and corporate approaches. Whether this new wave will trigger the take-off of a rapidly expanding land-use frontier remains uncertain. The number of actors remains very small, with only three missionary farmers, one original forestry company, and a few more than seven new-wave investments. By comparison, up to 80 white Zimbabwean commercial farmers constituted the post-2000 wave in Manica province, further south (Hammar 2010). Many challenges remain and new-wave actors increasingly talked about struggles and difficulties. Political instability in the region and an ongoing economic crisis in the country may further influence land-use trajectories and stunt frontier emergence in Niassa.^[18]

We bring nuance to the land-grab debate by showing that investors form a heterogeneous group with different backgrounds, motives, and business practices; great differences in the sizes of the lands they acquire and use; and that from their perspective, investing in Niassa is an ongoing struggle with promising economic windfalls

but more failures than successes. Some investors have learned from previous failures, including on relations with local communities, with many of them displaying a developmentalist business orientation, especially those actors with strong rooting in Niassa and Mozambique. Policy makers and NGOs working toward local development and community land rights could build on these orientations and commitments to advance their agendas. Future research could capture the full politics of waves and legacies by teasing out how heterogeneous investors relate to other actors in the frontier, for example, by studying land-use change and investment-induced displacement in emerging frontiers (Kronenburg García and Meyfroidt, *unpublished manuscript*) or the impacts of waves and legacies on local communities.

Our contribution to frontier theory is threefold. First, in explaining frontier emergence, most literature has emphasized the role of external forces such as state policies, booming commodity prices, or the large-scale immigration of outsiders, whether these are marginalized smallholders or capitalized actors. When endogenous forces are considered, the emphasis has been on mediating institutions (see Jepson 2006). Here, we showed the importance of endogenous processes, in particular through this new wave, which, though building on exogenous waves, emerged and developed from within the region and in the absence of a mediating institution. Second, rent theory is a dominant framework to explain frontier dynamics (Walker et al. 2009, Barbier 2011, le Polain de Waroux 2019), including decisions on whether and when to move in to the frontier (le Polain de Waroux et al. 2018), where to invest, and what to produce (Ioris 2016), and how much land to clear (Southgate 1990). Here, we showed that potential rent capture does not explain all the decisions that matter for frontier emergence. Missionary farmers did not come for economic rents or in search of available land, yet the new wave directly built on the legacies of these actors. In emerging frontier contexts, where the potential for rent capture is especially uncertain, distant, or out of reach, standard economic frameworks are insufficient to explain actors' land-use decisions and behaviors, and in-depth understanding of actors' histories, motivations, and social contexts is crucial. Third, we propose the waves and legacies framework to articulate and move beyond visions of frontiers as expanding through a monotonic or quasi-deterministic process until closure, or as places of boom and bust cycles that repeat in a stationary way (Rodrigues et al. 2009). We argue that over time, through what may appear as stagnating regions, failures, or boom and bust cycles, legacies may accumulate to gradually change the conditions for a frontier to emerge. What previous frontier theories, in land system science specifically, would tend to consider as "noise," or small irregularities largely irrelevant for the broader frontier pattern, may in fact constitute key dynamics to understand the mechanisms of frontier emergence. Gradual accumulation of legacies often remains unnoticed, and can be particularly important to explain sudden transformations and seemingly surprising non-linear land-use transitions or regime shifts when these conditions overcome some tipping points, such as forest transitions or large-scale land abandonment events (Ramankutty and Coomes 2016, Meyfroidt et al. 2018, Milkoreit et al. 2018), or possible shifts to yet other trajectories (Fig. 3). Investigating these gradual, under-the-radar building of legacies by employing historical analyses and a finer temporal resolution can prove

useful for understanding a broader range of non-linear land system dynamics.

[1] "Land use" can refer to a broad land-use practice (e.g., agriculture, mining, conservation, deforestation, settlement, the commons) or a more specific one (e.g., commercial or subsistence agriculture), a concrete crop or resource (e.g., soy, coffee, macadamia, gold, oil, natural gas, sandalwood), and other less tangible resources (e.g., "wilderness," carbon credits, wind power). Frontiers are often labeled based on these land uses (e.g., agricultural frontier, mining frontier, coffee frontier) or the actors operating them (e.g., smallholder frontier, trapper's frontier, pioneer frontier).

[2] Small-scale land users may also trigger rapid land-use change, often as a result of state-led migration policies (for the Brazilian Amazon, see Hecht and Cockburn 1990, for Southeast Asia, see Peluso 2017).

[3] Unlike elsewhere in the world, rapid land-use change by small-scale farmers has not been the case in Niassa, except perhaps after the civil war when displaced farmers returned to their lands. Subsistence farmers of course do trigger land-use change, often through deforestation (Rudel 2013), as they practice shifting cultivation and in line with natural population growth, but in the region, this land-use change is gradual.

[4] According to the Land Matrix (<https://landmatrix.org/>), Mozambique is among the top 10 target countries of transnational land acquisitions in terms of hectares of land acquired.

[5] Browder et al. (2008:1469) write about "episodic waves of explorers, conquerors and colonists" and about "a series of cultural successions, called 'frontiers'" until "the latest of these frontiers was opened in the mid-1960s, bringing dramatic social and environmental changes to the region."

[6] *Matama: O monstro está a despertar*: <https://www.jornaldomingo.co.mz/nacional/matama-o-monstro-esta-a-despertar/>

[7] Hall (2012) noted the same narrative among a subsequent generation of South African commercial farmers moving out of South Africa into other African countries, including Mozambique, as the title of her article, *The next Great Trek? South African commercial farmers move north*, attests. This article makes the point for South-South intra-regional land grabbing, analyzing the expansion of white South African farmers, agribusinesses, and capital since 2010.

[8] <https://www.youtube.com/watch?v=VcaSAcUOMTc>

[9] Mosagrius is alternatively spelled as Mozagrius, Mozagrias, or Mozagrius.

[10] See also the documentary *Mozambique: The New Voortrekkers*.

[11] One farmer claimed his maize average yields were 11 tonnes per hectare (Alberts and Öhlund 2001, *unpublished manuscript*).

[12] Many Zimbabwean farmers had initially been attracted to Manica by a large settlement scheme proposed by a company called Southern Technical Services (STS) in a way that echoed the Mosagrius program (Hammar 2010, 2013). STS wanted to tap into "Mozambique's apparent land availability and under-development" (Hammar 2013:98) and establish an enclave or colony of experienced white Zimbabwean large-scale commercial farmers. The venture never took off because, as the Mosagrius program, it failed to raise international capital.

[13] Malonda also took over the colonial pine plantations around Lichinga (Waterhouse, Lauriciano, and Norfolk 2010, *unpublished manuscript*).

[14] Interviewees explained that Chikweti originated out of the initiative of an Anglican priest living in Niassa and the bishop of the Swedish church, who found support among Nordic churches to start a forestry project in Niassa, after which GSFF was founded (Overbeek 2010). Chikweti later entered into a partnership with Malonda, although this partnership was on different terms than the one between Malonda and the other forestry companies (see below), with Malonda only holding a 0.26% share in Chikweti (Fundação Malonda 2010).

[15] Siteo (2008) mentions a total concession area of 170,000 ha, which includes the Mosagrius land. In general, information on how much land has been planted by forestry companies, how large the DUATs are, whether this includes DUATs that are still in the application process, and how big the concessions are, is unclear and sometimes conflicting.

[16] See Bleyer et al. (2016) for a study on both the negative and positive socioeconomic impacts of the forest plantations on rural communities in Niassa.

[17] *Empresa florestal nasce no Niassa*: https://macua.blogs.com/moambique_para_todos/2013/01/empresa-florestal-nasce-no-niassa.html.

[18] Since October 2017, neighboring province Cabo Delgado has been plagued by an Islamist insurgency and following the October 2019 general elections, a Renamo splinter group has been staging attacks in Manica and Sofala provinces in central Mozambique. Mozambique was thrown into an economic crisis following the disclosure of a US\$2 billion hidden debt by the government in 2016. This crisis is being aggravated by the economic effects of the containment measures of the coronavirus pandemic.

Responses to this article can be read online at:
<https://www.ecologyandsociety.org/issues/responses.php/13159>

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Data Availability:

The data that support the findings of this study are available upon reasonable request from the corresponding author, AKG. This data will be anonymized and all personal information and information that could contribute to identify the study participants will be removed. None of the data are publicly available because of their containing information that could compromise the privacy of research participants. Ethical approval for this research study was granted by UCLouvain on 26/2/2016, ERCEA on 7/4/2016, and UEM on 9/3/2017.

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