



The temporalities of extractive frontiers: The promises of booms and going bust in the Tanzanian gas sector

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ABSTRACT

Research on extraction in the global margins has often emphasised the transformative effects that occur during the process of becoming a 'resource frontier'. However, much of this research often focuses on the spatial transformations, with the temporalities of the resource frontier often being relegated to the background. This article places the temporalities of resource frontiers at the forefront. It does so by exploring the onshore and offshore gas sector in Mtwara, Tanzania, specifically how the international commodity cycle and the lifecycle of natural gas wells changed Mtwara from an 'economic backwater' to a 'resource frontier', and how this reshaping of territory has altered perceptions of time. High global gas prices, combined with the most labour-intensive period of the gas well lifecycle, led to an anticipated resource boom for the region, with national and local elites changing their economic activity in preparation for this boom. Such anticipation was met with promises of increased employment and economic development, and initial changes aided the impression that such anticipation for the boom was justified. When the construction of wells and facilities was finished and global gas prices were falling, Mtwara as a 'resource frontier' was once again reshaped to one of a 'quasi frontier' – where the potential for extraction remains but lacks the correct market factors to fully create an economic 'boom' and become a 'resource frontier'. The result was that while a traditional 'resource boom', did not occur, the speculative effects of extractive investment ensured that both a boom, and a 'bust' occurred in the region, severely affecting short-, medium-, and long-term economic plans of local inhabitants and domestic investors alike, with many negative effects of the boom remaining.

1. Introduction

In the mid to late 2000s, Mtwara, a region traditionally viewed as a 'static, isolated, backward periphery' (Lal, 2015: 2), discovered commercial quantities of natural gas. Within a space of a few years, the discoveries of offshore natural gas and the introduction of major International Oil Companies (IOCs) meant that Mtwara went from a 'backward periphery', to become the centre of Tanzania's nascent gas industry. With high global gas prices, combined with technological innovation in deep sea extraction, Mtwara, became a new frontier for hydrocarbon exploration and exploitation. The introduction of the onshore and in particular, the offshore gas sector to the region caused considerable changes to both the local economy and the perception of the region from international and domestic actors.

As Tsing (2003) states, capitalist frontiers are projects in making geographical and temporal experiences. However, current research on frontiers has tended to focus on the geographical experience, rather than the temporalities that emerge from being a part of the 'resource

frontier'. Temporalities, in this case understood as the 'nature or structure of time, in terms of its objective existence, its subjective experience, or both, and particularly with respect to the relations among its dimensions (past, present, and future) and the way in which it passes' (Widder, 2010), are essential for extraction through timeframes such as extractive lifecycles, or the fallout of cyclical events such as 'boom and bust' of international markets (D'Angelo and Pijpers, 2018). They can also elicit different perceptions of time. For example, they can provoke optimism amongst sections of the populace for distinct imaginaries of a increased pace of development (Ahearne and Childs, 2018), or alternatively, a desire to return to the past to a pre-extraction life (Ferry and Limbert, 2008). In short, temporalities are central to the making and remaking of territory and influence actions of actors in the present.

Temporalities are central to extraction (D'Angelo and Pijpers, 2018), and extractive frontiers are no different. Central to the connection between frontiers and temporalities is the commodity cycle, which has the capacity to remake territory in spaces that are historically peripheral to the global economy. From 2000 to the mid-2010s, the commodities

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sector was in a 'supercycle' of high commodity prices, resulting in fundamental changes of the geographies of extraction (Bowman et al, 2021). In the case of Mtwara, the boom-and-bust cycle did not just place it on the global energy map, but also reshaped the region to be a 'resource frontier', with a boom in the construction and service sectors in anticipation for offshore gas extraction. Once prices started to fall in 2014, so did investment and exploration in Mtwara, once again reshaping the territory, and causing an economic bust. Hence, Mtwara's reterritorialization presents an interesting case study in the temporalities of resource frontiers: high commodity prices reshaped Mtwara into an energy frontier, but declining prices in turn hollowed out this frontier status without commercial extraction.

This paper utilises individual and group interviews and documentary evidence obtained during PhD fieldwork in Tanzania from June 2017 to September 2018. Fieldwork in Mtwara lasted two months from July to August 2018. When I first went to Mtwara, I introduced myself to the local government to obtain permission to research in the region and conduct interviews with government personnel and obtain documentary evidence. I then contacted a local NGO that worked in Mnazi Bay, the site of extraction. Initial interviews were conducted in a group format of between four to eight people, based in villages in Mnazi Bay, with the local NGO present. Further one-on-one interviews were done without the NGO after obtaining contacts in the villages. These interviews included discussions with people across the social spectrum in Mtwara and were selected based on a relationship with the sector. People were interviewed based on their relevant experiences, for example that lived close to the extraction sites, or participated in pipeline protests. Interviews were also conducted with those working in business sectors that had a supply side connection to the hydrocarbon sector in Mtwara, such as hotels. In addition to this, interviews were conducted with IOC personnel both in Dar es Salaam and Mtwara. Interviews were in either English or Swahili, with the latter being translated through my research assistant. All ethical approval was obtained via the University of Edinburgh's ethics review process.

This paper argues that much like spatialities, temporalities are also reshaped in resource frontiers. To do so, it focuses on two different forms of temporalities found in the extractives sector: the global commodities cycle and the gas well lifecycle. More specifically, this paper argues that political and business decisions by the government and IOCs respectively created considerable anticipation of a financial windfall in Mtwara and changed their economic activities accordingly in preparation of a resource boom. Initial changes, such as increased employment and investment, led to a positive impression that gas-based development would aid the region substantially. However, when this failed to materialise beyond the initial discoveries, the same market forces shaped the region to one of a 'quasi frontier' – where the potential for extraction remains but lacks the correct market factors to fully become a 'resource frontier'. The case of Mtwara highlights that a greater exploration of the temporalities behind resource frontiers can further our understanding of the transformative effects resource extraction can have on areas designated as 'frontiers'.

This paper is structured chronologically. Following on from this introduction is a discussion of the interaction of the commodities cycle and resource frontiers. It then moves onto the economic boom that accompanied the gas industry in Mtwara. It argues that the boom introduced economic temporalities in the form of project lifecycle phases and the boom-and-bust cycle. It then focuses on the bust, which focuses on the sectors and livelihoods of actors that changed their behaviours in anticipation for the gas sector, and how they have changed since the anticipated boom did not arrive. Section five concludes.

2. 'Boom and bust' and the creation of the resource frontier

Resource frontiers are 'a region distinct from the main economic and population core of a country whose economy is dominated by the extraction of natural resources' (Rogers et al, 2013). Intrinsically tied to

both space and time, they are places of considerable upheaval (Frederiksen and Himley, 2020). Resource frontiers are not created in a vacuum. Rather, they require considerable drivers to create and reshape territory considered to be on the 'frontier'. This is connected to capital expansion and technological growth. It is worth noting that, while the term 'resource frontier' may be of common usage, the term has been contested for the political connections the term has historically caused (Luning, 2018). However, the term is used commonly within pro-market literature (e.g., Collier, 2011; Deloitte, 2019), as well as critiques of MNC actions in the global south (e.g., Chalfin, 2010; Bryceson and Geenen, 2016).

Resource frontiers are a common term to explain the expansion of capital into regions that are poorly integrated into the global economic system (Tsing, 2003). Frontiers do not specifically mean a place or process, but rather an imaginative project melding both (Tsing, 2005). They are connected to the ever-expanding demand for raw resources required for capitalist expansion. This approach has often been spearheaded by political economists, who have often focused on the advancement of capital in frontiers (albeit with little discussion on the territorial dynamics that shape space, see Rasmussen and Lund, 2018). These regions have become spheres of friction (Tsing, 2005), and resource frontiers have been characterised by conflict (e.g., Watts, 2012; Kirsch, 2014), particularly over issues of land and resource access (e.g., Peluso and Lund, 2011; Radcliffe, 2014).

Alongside capital, technology also plays a considerable role in the creation of resource frontiers; new developments in the technologies of mineral and hydrocarbon extraction have allowed for new spaces to be considered resource frontiers. This has made locations deemed previously inaccessible to extraction to be 'opened up' for mineral extraction. Technological innovation, particularly in deep sea extraction and unconventional hydrocarbon extraction, has aided the expansion of resource frontiers, and this changing technology was one of the reasons exploration in Tanzania could take place. This is tied with the fact that the creation of a resource frontier does not begin with the discovery or commercial extraction of natural resources, but rather the speculation that such resources exist. This speculation leads to anticipation on how resource booms, both at the site of extraction and for the state at large.

In this respect, speculation of the impact of resource extraction alters the temporalities of the political economy of both the local and the national, but also highlights the disruptive nature of the temporalities of extraction. For example, Frynas et al (2017), explores how expectations of resource booms have their own impact on the political economy of states. They demonstrate in São Tomé and Príncipe (STP) and Madagascar, the expectations of a resource boom allowed for economic and governance effects of the resource curse to be exhibited in both countries.

Gisa Weszkalnys work on temporalities in the hydrocarbon section in the STP hydrocarbon sector demonstrates frictions created during this resource speculation on the frontier. A lack of production in STP has created a temporal imaginary of both a future financial bonanza and a 'not yet' disaster (Weszkalnys, 2014). Attempts to manage these differing future imaginaries has come from projects, seminars, and workshops, and has led to a class divide, with the middle class viewing the delay of oil as a 'salvation' (Weszkalnys, 2008: 480). This 'not yet' disaster has been created through concerns over the resource curse, which has emerged in various guises (Weszkalnys, 2011), and has been aided by the ability to differentiate between temporalities implied by waiting, speculation, and anticipation on a speculative global energy frontier. In this respect, the temporalities of natural resource extraction are disruptive even before commercial operations begin, and, as this paper will show, operations in Tanzania are no different.

Resource frontiers are tied to spatial and temporal changes throughout the frontier, and whilst the latter has been acknowledged as an integral part of the transformative process resource frontiers undergo (e.g., Barbier, 2012; Rasmussen and Lund, 2018), temporalities of the frontier remain poorly understood compared to our spatial

understanding. Yet the temporalities of capital, and in particular, commodity price cycles, are central to both the expansion of capitalism into new markets, and the exploration of new resources to formulate a resource frontier. Demand for resources is cyclical, with low price elasticity of supply creating potential price spikes related to under-supply (Runge, 1998), and extended price slumps when there is over-supply (Bowman, 2018). The early 2000s to the mid-2010s that saw an enormous increase of commodity prices in both mining and energy, known as a 'supercycle' which fundamentally altered the geographies of extraction (Bowman et al, 2021). These high prices encouraged hydrocarbon exploration into 'frontier' regions previously considered economically unviable, such as East Africa (Anderson and Browne, 2011).

Economic booms, both real and anticipated, aid in the creation of the frontier, but often come with a bust. Here, the current literature on how resource busts affect the local have not garnered the same attention when compared to case studies anticipating resource booms. Some exceptions include Walsh's (2012) research into post-boom towns in sapphire mining in Madagascar, which highlighted both the positives and negatives of those living in this post boom period. However, there are many differences between this case study and the Mtwara case study; the sapphire boom in Madagascar was predominately artisanal led, which tends to have a wider impact on the local economy (Hilson, 2009). Secondly, the post-boom towns in Madagascar experienced considerable exploitation and saw the most available deposits exhausted.

In comparison to space, temporality has been neglected by resource frontier literature. While minerals and hydrocarbon deposits are spatially fixed, the drivers for their extraction are economic; supply and demand cycles determine whether deposits become commercialised, demands from shareholders can push companies to expand further and further into 'resource frontiers'. As will be shown, this push for new sources of hydrocarbons and minerals drove the temporalities of other actors. These drivers are temporally uneven across the global economy. Due to the nature of markets, political and economic risk, and the ease of extracting resources, commodity markets make and unmake resource frontiers, influencing and changing anticipation of those that live and participate in the extractive process. Hence, the creation of resource frontiers allows for an expansion of the temporalities of extraction into new frontiers. However, wider discussions of frontiers and how they alter the perception of time for peoples and societies alike has made little inroads into broader development debates on frontiers.

3. The promises of booms in Mtwara

Mtwara had often been neglected by both colonial and postcolonial governments, and the *Makonde*, the dominant ethnic group in the region, and the wider southern regions, were often seen incorrectly as culturally and economically backward when compared to the rest of the country (Seppälä and Koda, 1998). The region had typically been reliant on cash crops, particularly cashews, and has historically been isolated from the rest of the country until the Mkapa Bridge was built in 2003, allowing for travel during the rainy season. Hence, the discovery of gas in this region was not just accompanied by political promises, but also with hope and expectations that a region that had historically been on the margins would experience greater attention from the government and investment. While onshore deposits of natural gas had been known since the 1990s (Mmari et al, 2019), it was the rising gas prices and technological change that led to greater investment in the Tanzanian gas sector.

Tanzania's gas sector is divided into two distinct sections: the onshore and the offshore sector. The land-based industry, based in Mnazi Bay, started production in 2006. The IOCs involved in the land-based sector are medium to small sized IOCs, and supply the domestic market for power consumption, and thus is less reliant on regional and global market prices. By contrast, the offshore sector requires considerably greater capital expenditure and technological know-how, both in

terms of extraction and processing. The intended market for this gas is the Japanese market, and is dominated by large players, such as ExxonMobil and Shell. The differences between the offshore and onshore sector are important to better distinguish the temporalities that shaped Mtwara as a frontier, with the offshore sector in particular creating considerable excitement and expectation of considerable resource revenues and the onshore sector temporarily providing direct employment through construction activities.

3.1. The commodity super cycle and Mtwara

The commodity super cycle was the considerable rise of commodity prices from 2000 to 2014 (with a brief dip during the 2008 financial crisis) and was driven by increased and sustained demand from developing economies, particularly China (Erten and Ocampo, 2013). Many market analysis were bullish and suggested that the idea of falling commodity prices was exaggerated in the short and medium term (e.g., Heap, 2005; Canuto, 2014), with suggestions that this cycle could last up to 35 years (Cuddington and Jerrett, 2008). This coincided with technological advancement in the form of deep-sea drilling of oil and gas, which opened areas up greater than 5000 feet in depth in 'ultra-deep sea' areas. Gas deposits in Tanzanian waters were both a benefactor of technological advancement and high commodity prices.

Unlike the oil industry, which is a truly global market, the gas industry remains an 'industry that stubbornly resists globalisation' (Mason, 2015: 327). The desired market for Tanzanian gas was (and still is) the Japanese market, a market that traditionally holds the highest gas prices in the world. During these years, the price of gas in the Japanese market, rose from roughly \$3 per million metric British thermal unit (MMBtu) in 2000, to a height of \$16 MMBtu in 2008. This price fluctuated in between \$11 to \$16 until late 2014 (Fig. 1). Without the high prices of gas in the Japanese market, such exploration for deep sea gas would have been economically unviable. Because of this, Mtwara was opened to new markets; while the region had traditionally supplied raw cashew nuts to the Indian market (see below), the gas industry allowed the region to be exposed to the Japanese gas market and is historically tied to crude oil prices (CME Group, 2018). Furthermore, it allowed for an industry that, as long as the market conditions are right, can generate revenues throughout the year, compared to the seasonal nature of cash crops.

3.2. The introduction of gas investment into Mtwara

In the period between 2006 and 2014, Mtwara found itself in two of the most labour- and capital-intensive phases of the extractive industry. Firstly, as mentioned before, gas prices were at their height. Alongside this were the lifecycles of gas wells, which were in the exploration and developmental phase for the offshore and onshore sector, respectively. These phases require capital investment for equipment and construction of offshore and onshore facilities. The use and purchase of equipment for the exploration phase offers little wider economic benefit for the region, as offshore equipment is highly technical and imported. Rather, the wider benefits from these phases come from the construction of facilities and employment (Darko, 2014). This is particularly true for the development phase in the onshore sector to generate direct and indirect jobs and investment through construction activities and supply sector jobs, albeit temporarily.

Due to the technical skills involved in offshore exploration and development, most of the direct local employment from the wells came from the onshore industry. For the onshore gas industry in Mnazi Bay, there had been opportunities to participate in the construction of gas wells, production facilities and the contested Mtwara-Dar es Salaam pipeline (for frictions on the pipeline, see Barlow, 2022). These employment opportunities were temporary in nature; roughly 200 casual labourers were employed during the seismic stage and 100 during exploration, and this did not include semi-skilled labourers that would

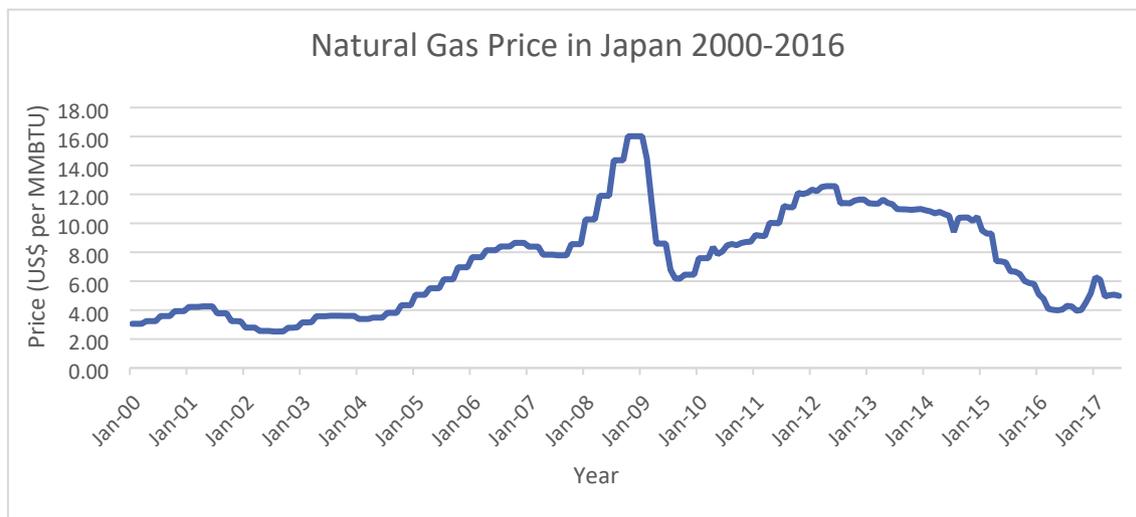


Fig. 1. . Natural Gas Price in Japan 2000–2016 (data collected from World Bank, 2019).

have worked on site like drivers, plasterers and electricians.¹ By the interviewees admission, the temporary nature of the employment was not communicated effectively to those living nearest to the extractive site.² Interviews of former labourers in Msimbati claimed that they were paid 12,000 Tanzanian shillings per day.³ Because of this, many villagers living closest to the site expressed frustration at the opportunity, and subsequent removal of employment, which is explored in greater depth below.

Geographers and anthropologists have focused on the poor economic returns and increase in social hardship the introduction of extractives industry have in areas near the extractive site (e.g., Fentiman, 1996; O'Rourke and Connolly, 2003; Bush, 2008). However, these concerns were not noted in interviews. Instead, respondents in both the villages and in the city of Mtwara were positive about the initial introduction of the gas industry into Mtwara, particularly around the growth of the local economy.⁴ It highlights the contextual nature of local populations feelings towards resource projects. Whilst the literature has often focused on local oppositions towards resource extraction (e.g., Arce et al, 2022; Triscritti, 2013), they tend to overlook that the promises of jobs, industrial, and infrastructure development can provide excitement that such projects can catalyse economic development. In the case of Mtwara, a region that has been historically marginalised, the promises of development by the government and a visible growth in infrastructure would reinforce potential positive feelings towards a 'resource boom'.

Initial positivity over the sector is backed up with economic growth of the region: Official statistics recorded 40 % annual GDP growth of the region between 2009 and 2010, the first year of gas exploration by Ophir and BG (National Bureau of Statistics, 2015).⁵ While this jump is extremely high and there could be discrepancies within the economic calculations, GDP growth in the region does appear to have grown significantly. Official statistics report that GDP growth grew at an average of 13.7 % per year between 2012 and 2018, although this is consistent with the national average GDP growth of 12.98 % (National Bureau of Statistics, 2019).⁶

One of the ways the anticipated boom altered the local economy in

Mtwara was through a change in the perception of the cashew sector. As previously mentioned, Mtwara before the discovery of deep-sea gas was an economy chiefly based on the cultivation and export of raw cashew nuts. In this respect, the business cycle of the region was one dominated by the cashew nut industry, and therefore economic and social temporalities were often cyclical in nature; the region's harvest season is from October to February and occurs at a time where prices are at a peak due to the fact that it stands in contrast with other national cashew nut harvests (Awadh, 2018).

For the city of Mtwara, the cashew harvest season meant an increase in income and trade during from October through to February. However, preparations begin before the initial harvest. While there is some harvest of cashews around the city of Mtwara, most of the harvest occurs inland in the regions of Lindi, Ruvuma and inland Mtwara. Rather, it is the port of Mtwara that is central to the cashew sector in that it is used to export cashews. Alongside this, the city of Mtwara is used by traders as a warehouse location to store cashews and as a location to purchase cashews.

Anticipation and predictions of the future alter the behaviour of actors in the present. This can be seen with the altering of economic planning due to the anticipation of resource booms, which is historically common (Drelichman and Voth, 2009; Frynas et al, 2017). This also occurred in Mtwara, both in terms of economic planning at the administrative level and became apparent that such a mindset occurred in residents interviewed. Imaginaries of gas led industrialisation changed both the perception of the future and cashew harvest in the immediate area around the city of Mtwara and villages near the extraction site. It is worth noting that recent literature has suggested that extractive resource windfalls affect agricultural productivity within Africa (Dorinet et al, 2020). While this is not a substantive account of the local Mtwara cashew sector, comments from respondents suggest that the cashew sector was indirectly impacted from the introduction and expansion of the gas sector.

The gas sector changed the imagined economic future of the city and the region. This both came in the form of actions on the ground and changes in policies to maximise potential revenues from gas extraction. A new master plan for the region was implemented (Mtwara Regional Administration, 2017), in which altered the previous *Mtwara-Mikindani Master Plan (2008–2028)* to better accommodate the predicted economic and demographic changes caused by the gas sector and to attract 'support of the oil and gas industries and ensure that pragmatic, organised and guided physical development of Mtwara area is achieved' (Mtwara Regional Administration, 2017: 2-3). It is worth noting that there is little discussion of agriculture within this updated master plan,

¹ Interview, Well Manager, Mtwara, 17.07.2018.

² Ibid.

³ Group Interview, Msimbati Villagers, 18.07.2018. This is roughly \$5.

⁴ E.g., Group Interview, Mtwara Market Association, Mtwara, 13.07.2018; Interview, CUF Member of Parliament, Dar es Salaam, 14.03.2018; Interview, Economic Planner, Mtwara Municipality, Mtwara, 09.07.2018.

⁵ Authors own calculation.

⁶ Author's own calculation. Note that the national average excludes Zanzibar.

and no mention of major cash crops. The government changes in discourse around gas, which invoked declarations that ‘Mtwara will be the new Dubai’ (Must and Rustad, 2019), and encouragement to enter the sector inadvertently discouraged attention to the cashew sector, which was increasingly been seen as a sector for the elderly (The Guardian (Tanzania), 2016). As one city respondent, a young man who had emigrated to Mtwara city from rural Mtwara told me:

‘Before gas, cashew nuts were the business of Mtwara. After the gas came cashew nuts became less of a focus compared to gas and one of the promises was that gas will be the alternative economy [instead of cashews]. The economic priority was to be given on factory and industrial development, employment, and investment in Mtwara and all of these were to be boosted by gas industry.’⁷

Alongside changes in administrative planning was a change in local perceptions of sources of economic growth. One respondent in a group interview claimed that the gas industry made people in Mtwara ‘ignore’ cashews.⁸ The gas sector encouraged rural to urban migration, which is covered in greater detail below, and cashew farmers noted a reduction in labour supply (The Guardian (Tanzania), 2016). In this respect, the gas industry directly influenced and changed local working patterns and aspirations, which in turn indirectly affected the cashew nut industry. This change in focus was noted by local NGO workers that focused on poverty reduction in Mtwara:

‘The gas industry affected the cashew agricultural cycle...When gas exploration activities started, the cashew nut industry was out of many Mtwaran’s minds. People started to focus more on gas sector and investing in indirect opportunities which come alongside with gas. Because of several reasons such as politicians exaggerating on the benefits of gas, people believed that cashew nuts were not paying enough and so on they decided to shift towards gas with the expectation of getting more money.’⁹

The direct and indirect supply side of the gas industry presented an opportunity to allow for a greater and more sustained income than what was considered possible with small-scale cash crop agriculture. While this was started with the introduction of the gas industry, this movement was catalysed by political promises and statements that spoke directly to the populace. Promises of employment were further galvanised through government local content initiatives. Although poorly implemented in the beginning,¹⁰ such initiatives did hire some of the local population; discussions with people that had worked in the sector, either through construction or other roles such as drivers, noted that they obtained their respective roles through local employment initiatives.¹¹ However, much of this employment was based on continued high prices, or temporary construction of facilities. For the onshore sector, there was little explanation of the temporary nature of the jobs provided during the construction phase.¹²

The promises of a resource boom in the near future allowed for a potential new business cycle to emerge in the city of Mtwara; it had changed from one that operated seasonally with the cashew nut industry, to one that revolved around the gas industry that operated throughout the year within a rapid pace of time. In this respect, two of the main temporalities of extractive capital – the commodities cycle and the extractive well lifecycle, catalysed domestic investment as well as investment from IOCs. While this industry is capital, rather than labour intensive, it did not stop people from being employed either directly or indirectly in the industry. This changed the business landscape to one that would see business plans and financial strategies around the gas

industry, which, at the time provided a more sustained income than the seasonal business and labour cycle of cash crops. In many respects, it demonstrates the power extractive capital whereby the agricultural sector was quickly overlooked by the government and local population, leading to a region’s economy becoming increasingly dependent of an anticipated resource boom. This stands in contrast with the cashew nut economy which was largely dependent on natural phenomena like the weather, which in turn timed well the cashew markets in India. However, the region lacked planning in preparing for the sudden reversal of demand that comes with change of project phases, a downturn in gas prices, or negotiation difficulties between the government of Tanzania and IOCs (Jacob and Pedersen, 2018). All three would happen in quick succession.

3.3. Mtwara as a national frontier

The discovery of commercial deposits of gas changed the perception of Mtwara within the region. As mentioned before, Mtwara had traditionally been ‘looked down upon by the rest of the country’,¹³ however, the discovery of gas made the region to be seen as having economic ‘potential’.¹⁴ Alongside economic changes were changes in social perceptions of the region by the rest of Tanzania. In this respect, Mtwara as a frontier was not just for international capital, but also for Tanzanians outside of the region. In short, the introduction of the gas industry allowed for greater investment from domestic sources.

In this respect, the gas boom in Mtwara allowed for a more positive image of the region than had traditionally existed within the country, changing the region to one of an investment destination. Much of this was due to the lack of supply services in the region. For example, before the gas discoveries, there were no internationally certified hotels. The investment was mainly in the real estate and construction sectors,¹⁵ causing an investment boom, but also involved increased government expenditure, particularly within the construction of roads and increased electricity generation. The real estate boom was the most visual change of Mtwara’s status. The cost of land rose exponentially within the boom period, and people were selling their plots of land for a ‘huge’ amount.¹⁶ This was heavily promoted by *Chama Cha Mapinduzi*, the leading party in Tanzania, and opposition alike, with opposition MP Zitto Kabwe pushing for Tanzania’s pension fund to invest in projects in Mtwara (Tanzania Daily News, 2012). Additionally, land was brought by the Bank of Tanzania for a new office and housing in the city.¹⁷ The Vocational Education and Training Authority, which oversees and regulates vocational skills training, also had a new regional headquarters constructed, and a considerable number of industrial plants centred around the gas sector promised to aid industrialisation in the region (Barlow, 2022). There were other factors that were influenced by increased by the gas industry, such as increased reliability of electricity generation, and many residents hoped that this would encourage further investment in the region to generate employment.

Many of the private investments by Tanzanians were in services required for the gas industry that did not exist in the area before the discovery of commercial gas. The result of this investment was that Mtwara was seen as more of a ‘business town’.¹⁸ Many interviewees from Mtwara, both businesspeople and villagers alike, noted that the increase in population resulted in greater cash circulation. The increased level of business involvement in the town could be summed up by the

⁷ Group Interview, Mtwara City, Mtwara, 07.07.2018.

⁸ Group Interview, Poverty NGO, Mtwara, 14.07.2018.

⁹ Ibid.

¹⁰ Interview, Local Content Director, Mtwara, 13.07.2018.

¹¹ Interview, Mtwara Resident, Mtwara, 10.07.2018; Interview, Former IOC Driver, Mtwara, 09.07.2018.

¹² Well Manager Interview.

¹³ Interview, Mtwara Chamber of Commerce, Mtwara, 10.07.2018.

¹⁴ Interview, Senior Mtwara Local Government Officer, Mtwara, 26.07.2018.

¹⁵ Economic Planner.

¹⁶ Member of Parliament, CUF. The interviewee claimed that plots of land were selling for up to 300 million shillings (roughly \$130,000). However, this cannot be verified.

¹⁷ Fieldwork Diary, Mtwara, 02.07.2018.

¹⁸ Interview, Businessperson 1, Mtwara, 24.07.2018.

statements of two businesspeople:

'Before 2010, there were little businesses in Mtwara, after the coming of the gas industry, the number of businesses expanded. There are now 500 odd business members [in the Mtwara chamber of commerce]. Before that, there were very little members, about 250. Most of these businesses came from people outside to invest in Mtwara...Historically, it [Mtwara] was an economic backwater. When the projects came, he building industry expanded my new homes and hotels were built. These were mostly lodges and guesthouses. Before the introduction of the gas projects, there were only three banks, now there are now eleven.'¹⁹.

'The gas industry had brought a lot of people from Dar es Salaam, as well as other regions. They tended to invest in guesthouses etc. Lots of people got encouragement to build or renovate houses, and the government encouraged investment, particularly in housing, guesthouses, and rentals for both property and vehicles. People came here and built things out of their own pocket.'²⁰.

Here one can see the transition from backwater to frontier of international and domestic capital; there are now more SMEs operating within the region than before the discovery of gas. Alongside this, the increase in the number of banks operating in Mtwara has allowed for an ease of access to capital in the form of obtaining of loans for residents in Mtwara (in theory at least). The catalyst for this investment boom was international and temporal; commodity prices and an anticipation of a 'resource boom' in the near future encouraged domestic investment in anticipation for a quick return on investment that would have not occurred without the discovery of commercial gas deposits.

Mtwara was as much of a frontier for domestic as well as international capital. It was a 'traditional' frontier in the sense that the introduction of IOCs would extract 'untouched' natural resources and utilised and exploited by international capital. Whilst the majority (in terms of sums invested) was from international capital, the biggest effect for the city of Mtwara was the introduction of domestic capital, which resulted in an increase in the population, the circulation of money and the number of businesses operating. Whilst the domestic investment had more of a visual impact with the increased number of businesses operating in the region and an accompanying construction and real estate boom, the fact was that this was a boom that started because of the speculation and anticipation of natural gas extraction due to rising natural gas prices. However, resource booms often come with a bust, and Mtwara was no different. Because of this, the boom in Mtwara and resulting domestic investment were vulnerable to price shocks and changes in the well lifecycle.

4. Going Bust

The end of the gas 'boom' in Mtwara was not a singular event, rather, it was a result of a variety of factors, with different actors attributing different events for the drop in IOC interest and investment in the region. For many residents in Mtwara, the end of the boom was the construction of the Mtwara-Dar es Salaam pipeline. The construction of this pipeline, which connected natural gas from Mtwara to Dar es Salaam for electricity generation, resulted in protests and riots in 2012 and 2013. They were highly opposed by the local population out of fear that previous promises of jobs and industrialisation would not go to the region, and instead, go to Dar es Salaam (Barlow, 2022). The protests and riots resulted in further marginalisation and fragmentation between Mtwara and the rest of the country (Ahearne and Childs, 2018; Must and Rustad, 2019). For some scholars researching Tanzanian extractives, it was the passing of the 2015 resource laws (Jacob and Pedersen, 2018). For interviewed IOC personnel, they suggested the reason for the slowdown in operations was due to two factors: firstly, it was the governments hostility to extractive corporations, second was the fall in commodity

prices at the end of the 'commodities super-cycle'. This section will focus on the local fallout of the latter.

The Japanese gas market started to sharply decline in 2015 (World Bank, 2019), questioning the short- and medium-term viability of projects. The Tanzanian deep sea would have been considered one such market that would have turned uneconomically viable, at least in the short and medium term, due to the high costs associated with the deep-sea exploration and production. The last exploration for gas in the deep-sea sector occurred in 2018 by Equinor (The Citizen, 2018), although this appeared to have been done with the insistence by the Tanzanian authorities, arguing that Equinor had to do it to fulfil its contractual obligations, rather than a meaningful attempt to find more hydrocarbon deposits.²¹ The last exploration by the other IOCs, Shell, Ophir and Pavilion Energy, in the region occurred in late 2016 (Ophir Energy, 2016). Alongside the lack of exploration has been a deadlock of negotiations between the government and IOCs over the construction of an LNG plant (Petroleum Economist, 2020), which is required for export. This has ensured that there will be no commercial extraction (and associated construction required for onshore facilities) in the short term.

The lack of advancement of the Mtwara gas industry has resulted in a situation whereby Mtwara was an economic frontier in name only; the temporalities that had allowed for Mtwara to be reconfigured as an energy frontier had gone, and the fall in prices ensured that continued exploration was economically unviable. This was combined with the most labour dependent part of the lifecycle finished. The anticipated 'resource boom' had failed to materialise, and instead, those that had invested into the region to benefit from the boom were now entering a business environment that was closer to an economic 'bust'.

4.1. Changes in the local economy

The resulting changes in the economic situation resulted in a change in business strategies in companies that had shaped their business model around supply services of the gas industry. The failure of an economic boom driven by the offshore gas sector has had a knock-on effect for the entire city and wider region. When asked by development in the region, interviewees from all social strata would often say that development in the region has gone back to 'normal',²² or in essence, back to a pace of development experienced before the discovery of gas, or even regressed.²³ Much of the construction had stopped, and infrastructures previously created for the gas industry, such as warehouse storage, had proven to be 'white elephants'.²⁴

Chief among those business sectors that suffered the most were the major benefactors of the boom period: the real estate and the hospitality industry. This was visible to those who visit Mtwara. While some of the evidence of the boom period was present with paved roads and newly built banks and offices completed with a modern glass aesthetic, there are also visible signs of the bust phase in the city, with the coastline of the city having numerous construction sites of half-built hotels and houses. Inside those hotels that were operational, further evidence of previous boom times could be seen in the high-class hotels, all of which were quiet. As one would expect, the stagnation of the gas industry has had serious repercussions for business activity. When asked about the gas industry in Mtwara to senior members of staff in two upmarket hotels in Mtwara, they claimed:

'When constructing this [hotel], it was because of the feasibility study we had done. The hotel was needed for *mzungu's* and future businesses. Now the gas has gone we remain just another hotel. A minimum of business which was expected has not materialised. The feasibility study became a fiction. The expectations we had were not

¹⁹ Mtwara Chamber of Commerce Interview.

²⁰ Interview, NAF Beach Hotel, Mtwara, 02.07.2018.

²¹ Interview, Retired TPDC Executive, Dar es Salaam, 15.03.2018.

²² Interview, Dockworker, Dar es Salaam, 18.02.2018.

²³ Interview, Businessperson 2, Mtwara, 02.08.2018.

²⁴ Ibid.

real. The hotel industry collapsed here, there are 25 unfinished hotels, with 16 unfinished hotels next to the beach alone. To make matters worse, land prices are decreasing.²⁵

‘The aim of this hotel was for gas and oil workers. Most guests back then were foreigners, company guests, now it is locals. There is no business there now, so there is no need to cater for that kind of customer. Previously, it was 300,000 shillings for one night.²⁶ The lowest price now is 110,000.²⁷ ‘Normal’ people are becoming the customer. The oil and gas period included larger companies...Before you’d get no room if you didn’t work in the gas sector. Back in the day we would get 200 to 300 million shillings a month.²⁸ Today, reaching 50 million shillings is a success.²⁹ Even restaurant sales have dropped as they used to supply food to the oil and gas companies.’³⁰

The sudden reversal of the gas industry in Mtwara brought changes in business practises which has not resulted in the same amount of investment as before. Some of the businesses that were created to service the gas sector suddenly switched to the more seasonal cashew harvest for business.³¹ However, this change in business strategy and has questioned the long-term viability of certain suppliers, particularly hotels. This has chiefly been for two reasons: firstly, alongside the change in industry has been a change in the clientele that dominate the industry. Gone are the technical and business personnel of the IOCs, instead, individual and community cashew traders are the new customers. This sector lacks the financial clout compared to the hydrocarbon sector.

Combined with this change in trade has been a shift from the all-year-round presence of the gas industry to the seasonal cashew sector. The shift from a business focus from all year to just a few months of the harvest has had severe repercussions for the economy of Mtwara, as service sector employees have been made redundant since the stagnation of the gas sector. Alongside this, there is a reliance on weather patterns to ensure a successful harvest, which in turn, generates greater revenues. This was summarised by one hotelier:

‘The cashew nut industry is the backbone of Mtwara. On season and offseason, we have to wait to be in business for a very short amount of time. They are looking to get a cashew processing plant into the region. We will be able to break even. Employees don’t benefit with such a seasonal economy. We don’t get reliable and full-time employment. As a hotel we only host big buyers.’³²

As with the wider economy of Mtwara, this switch in clientele has also changed the business patterns of hotels in the region. The re-emergence of the cashew industry has not just affected hotels, but it has also affected the entire business cycle of the region down to individual’s livelihoods.

Events linked to the gas sector, such as the 2012–2013 pipeline riots also impacted the cashew sector. The 2012–2013 protests and subsequent riots were over the decision to construct a pipeline connecting natural gas from Mnazi Bay to Dar es Salaam for electricity generation and were highly opposed by the local population out of fear that previous promises of jobs and industrialisation would not go to the region, and instead, go to Dar es Salaam (see Barlow, 2022). Farmers claimed that the riots were the reason for the poor cashew exports in the following years. This was explained as they argued that it gave the impression that the region was unsafe and put off foreigners arriving in the area to buy cashews, affecting personal incomes in the process.³³ Furthermore, with the shrinking of the cashew industry during the

economic boom, the cashew farmers present today have been struggling in the immediate post-boom economic landscape.³⁴ The impact of this should not be underestimated, as one cashew nut farmer told me:

‘When gas was discovered, all of our [people in Msimbati] focus, effort, investment and expectations were directed towards the gas industry. The cashew nut industry was forgotten. When the gas industry went down then there was nothing, we all went down with it.’³⁵

As mentioned before, the city of Mtwara and surrounding areas business practises sought to shift from one of a seasonal agricultural economy to one that was buoyed by the hydrocarbon industry, and in the process shifted one from of economic insecurity to another. The resultant change to international extractive temporalities resulted in major shocks for the local economy, whereby strategies reliant on the oil and gas sector had to suddenly reverse to the smaller, seasonal economy of cashew nut harvest and export. Such a change altered labour patterns and revenue streams, whereby the gas industry offered continuous business compared to the cashew industry, which is seasonal in nature. Because of this reversal, there are only a few months of the year where the local economy sees an uplift in business.

In this respect, the bust stage of the boom-and-bust cycle has complicated the concept of Mtwara as a frontier. It is not just the presence of natural resources and MNCs that make the frontier, but also commodity prices, both real and predicted, that accompany the sector determine whether a deposit is worth the investment for extraction. On one hand, the region still has the potential for gas extraction, with quantities of deposits known and the technology required to extract it. However, this process is incredibly expensive. In other words, while the gas and the technology to extract it is there, the price of gas is too low to justify the cost to extract, process, and export Tanzanian offshore gas. The retreat away from the gas industry has meant that, at this current point in time, Mtwara remains a frontier in name only.

4.2. Remnants of the Boom

With the economy hit hard by the sudden stagnation of the gas industry, the expected changes to local livelihoods did not materialise. In many respects, some of the more negative aspects for the poorest in society, such as increased land and food prices (compared to pre-discovery prices), have remained, but the more positive aspects like increased investment from IOCs, domestic investors, and the government, as well as increased formal (albeit often temporary) job opportunities, have gone, furthering the drop in formal employment. In general, respondents claimed that the level of poverty in the area has gone up since the pause of the offshore gas industry, and issues like the rise of the cost of living and lack of employment opportunities were common amongst interviewees in both the city and the surrounding villages. The majority of the respondents near the extractive site were more severe in their criticisms, with previous research finding that people living further away tended to still have a more positive view on the economic situation of the region (Must, 2018).

One of the groups of interviewees who are still feeling the negative effects of the boom are the villages closest to the onshore extraction sites. There was little community participation possible in Mtwara over decision making processes for the gas sector (Poncian, 2019), and decisions over land and compensation were no different. The construction of infrastructure to extract, transport and process natural gas has resulted in land being cleared from the immediate area. This, and the resulting infrastructures created have altered the immediate geography of the area through two factors: physical removal to make way for infrastructures, and pollution resulting from gas extraction. Land clearance, in the form of removal of shelter and cash-crops like coconuts and cashews, to free up space for infrastructure, were often a major

²⁵ Interview, Tiffany Diamond Hotel, Mtwara, 18.07.2018.

²⁶ Roughly \$130.

²⁷ Roughly \$48.

²⁸ Between \$87,000 to \$130,000 a month.

²⁹ Roughly \$22,000.

³⁰ Tiffany Diamond Hotel.

³¹ Tiffany Diamond Hotel; NAF Beach Hotel; Mtwara Chamber of Commerce.

³² NAF Beach Hotel.

³³ Interview, Cashew Farmer 1, Mtwara, 23.07.2018.

³⁴ Interview, Cashew Farmer 2, Mtwara, 23.07.2018.

³⁵ Interview, Cashew Farmer 3, Mtwara 10.07.2018.

complaint amongst villagers interviewed. Alongside this, wastewater from the gas field and increased temperature emitting from pipelines and extraction infrastructures were also blamed on the gas industry.³⁶ Complicating this further, many interviewees noted that higher food prices during the boom period remained, providing extra strain on food security. During a group interview in the village of Ruvura, the village closest to the gas extraction site, one respondent claimed that:

‘They [IOCs] took farms and demolished houses, cutting down cashew nut trees, coconut trees, mango trees in the process and building gas plants. We were expecting the equivalent or more benefit than the cost our community incurred because of gas extraction, but all of a sudden, the gas industry faced a downfall which caused it to slowdown. All of our expectations, especially on benefits that we would get from gas, evaporated. There is now a slow implementation of development projects in Mtwara as well. In general, no one is interested in investing in Mtwara as they were during the gas exploration.’³⁷

The compensation for the seizure of land and the destruction of cashew and coconut trees was another source of frustration for many village interviewees, with many feeling they were not compensated enough.³⁸ Some interviewees additionally claimed that there were social pressures to take the compensation as it was promised to benefit the whole community.³⁹ Many village interviewees expressed their frustration with the lack of promised development within their local communities and farms:

‘I was promised reasonable benefit and good compensation. Up to today my life is still the same, and no benefit has occurred as promised. We expected better social services in terms of health and education in return. We did not get what was promised and now we cannot get it since the government is focusing on implementing other big projects since the gas industry is no longer the big issue.’⁴⁰

In addition to the short term fall in the gas industry, the construction of the gas site also meant the reduction of long term sources of income; some fishermen complained that fishing was harder than before,⁴¹ and cashew nut and mango trees which were cut down and needed to be replaced, can take two to three years to grow and mature, while coconut trees can take up to a decade, and this has allowed for a removal of sources of food and income. In many respects, the stagnation of the gas industry has resulted in communities closest to the extraction site being felt forgotten by both the public and private sector, with the former often using community participation to legitimise the government’s predetermined agenda (Poncian, 2019). The slowdown in the industry caused by declining gas prices resulted in those living closest to the extractive site having their lives worsened with little benefit in return materialising.

In essence, with the slowdown of the industry, an unwritten social contract appears to have been broken; ‘sacrifices’,⁴² such as removal of sources of income and shelter for the promise of an equal or improved life did not materialise. Instead, the economic vulnerabilities of a weak local economy exposed to international commodity cycles allowed for a reduction in economic development. Here one can see the interaction between the global and local; the commodities cycle had a big impact on

³⁶ A microclimate of higher temperatures around the extraction sites were an incredibly common complaint from villagers. It could be possible that another factor was involved that has led to the death of cashew trees. Furthermore, some claims around wastewater were rebutted by other members of the group interview after the interview was conducted, claiming it was an overuse of pesticides that resulted in the death of farmland. However, this does suggest that many of the agricultural problems facing the community are, correctly or incorrectly, blamed on the introduction of gas extraction.

³⁷ Group Interview, Ruvura Village, Mtwara, 05.07.2018.

³⁸ Group Interview, Madimba Village, Mtwara, 12.07.2018.

³⁹ Ibid.

⁴⁰ Cashew Farmer 3.

⁴¹ Interview, Fisherman 1, Mtwara, 24.07.2018; Cashew Farmer 2.

⁴² Interview, Fisherman 2, Mtwara, 24.07.2018.

the progress of development in the region, to the point where many interviewees have said things have regressed.⁴³ Furthermore, while the drop in prices was over a short period of time, the long-term negative impacts of the boom, such as the removal of cash crops, have taken a far longer time to recover. With the slowdown of the industry, many respondents felt that economic growth and development had slowed down considerably, ensuring that previous preparations for the future became defunct:

‘In everything that is, nothing can prepare you for being poor. All of our plans were designed for being more developed. We hoped that gas would bring change. Planning for poverty? Nobody plans for poverty.’⁴⁴

The boom and exploration phase of the Mtwara gas industry distorted imaginaries of the future considerably and this has caused economic planning, such as the updated *Mtwara Master Plan* (2017), made during this time redundant. Plans were made with the expectations of high gas prices for a long period of time, rather than the sudden fall they experienced in 2014. The exploration phase of the industry had left the region vulnerable and removed productivity from other sectors in the region.

5. Conclusion

This paper has explored how temporalities play a large role in the creation and subsequent reformation of ‘resource frontiers’ in Mtwara, Tanzania. Mtwara, which had typically been in the margins of the global economy, acting as a supplier of raw cashew nuts for the Indian market, suddenly changed into a ‘energy frontier’, opening the region to an international industry with considerable capital for investment. The reterritorialization of Mtwara to a frontier was not just for international capital, but also for domestic capital that sought to capitalise on the anticipated ‘resource boom’. Scholarly focus on frontiers, suggests a reterritorialization of space to better accommodate capital (e.g., Tsing, 2003; Rasmussen and Lund, 2018). This also reconfigures the temporalities of the space in question.

As previously mentioned, Frynas et al (2017) argues that anticipation of resource windfalls can provide effects of the resource curse. While this paper does not engage with the resource curse debate, it does highlight that projected resource windfalls do influence the politics and economics of the state. As this research demonstrates, the same is true for the local economy and society. This is highly localised and dependent on the nature of the industry and the location.

For Mtwara, the introduction of the gas sector brought with it new forms of temporality that are tied to both capital and labour. The commodity cycle, at its height during exploration, allowed for the reterritorialization of Mtwara to a frontier, but also brought with it an anticipated resource boom that would occur in the region in the near future. This predicted resource boom promoted investment into supply sectors, infrastructure, and construction, creating a construction boom in the process. In this respect, Mtwara’s status as an energy frontier encouraged international and domestic investment in anticipation of a future that will bring strong financial returns to the investment. Considering the marginalised nature of Mtwara from colonial and postcolonial governments, such investment was initially welcomed as a chance to obtain employment and investment. In doing so, it replaced cashew nuts as the main economic focus for the local administration and investment, with local labour, particularly from young men, seeking employment in the supply sector of the gas industry.

Coinciding with the commodity cycle was the well lifecycle for both the offshore and onshore sector. The phases of these lifecycles were in the exploration and development phase respectively, with the latter of which is the most labour-intensive phase throughout the well’s lifecycle. This provided a temporary boost to employment and money circulation.

⁴³ Ruvura Group Interview; Interview, NGO Employee 1, Mtwara, 15.07.2018.

⁴⁴ Interview, NGO Employee 2, Mtwara, 15.07.2018.

These cycles allowed for economic growth and development of the region. This also indirectly also served to enhance the imagined future of Mtwara as a gas town, as employment was being provided. It also aided the anticipation by the local population of the predicted ‘resource boom’ that would occur, encouraging investment and labour participation in supply side services. This anticipation for economic growth, aided by government claims of industrial development fuelled by natural gas, led to a positive attitude towards resource-based development, something that has been uncommon in other resource-rich regions on the cusp of production (e.g., [Weszkalnys, 2014](#)). However, poor communication about the temporary nature of the employment served to create an impression that more direct jobs in the sector would continue.

At the time of research and writing, the projected ‘resource boom’ and imagined future of a prosperous Mtwara proved to be a mirage. The failure of the prediction of the boom stopped the investment into construction and introduced the ‘bust’ phase to Mtwara. The fall in gas prices resulted in a considerable reduction in investment both by domestic and international actors. This was combined with a transition of phases both in the onshore and offshore sector; for the onshore sector, which is now in the production phase, the most labour-intensive phase is now over, and instead there is little low-skilled employment opportunities available. While global gas prices are once again rising due to Russia’s invasion of Ukraine, and the death of John Pombe Magufuli, has seen discussions of the offshore sector entering production in the near future, the initial excitement for the gas sector as a vehicle for development in the wider community appears to have subsided.

The bust of commodity prices occurred before the offshore industries transition into the production phase, and this has seen the industry enter a purgatory of sorts; the location of major gas deposits are known, yet the price of gas and national politics have seen little to no IOC activity in Mtwara since 2015. With the offshore export sector (and its linkages) no longer an exciting investment opportunity, the Mtwara gas industry has been reshaped to be a quasi-frontier. It is known on the energy and domestic capital as having ‘potential’, but at the same time due to political considerations and low gas prices, it is simultaneously ignored as a location for further investment. At the same time, the temporalities of boom and bust have concurrently made the region more vulnerable to international extractive temporalities than ever before, but with little financial or material gain at the local level to show for it.

Remnants of the boom, such as half-built hotels, increased food prices and a more reliable electricity supply remain, but many of the jobs, both in terms of quality and quantity have gone. Furthermore, the environmental effects of the industry, such as pollution and destruction of cash crops, has added to the frustrations of the villagers that an unwritten social contract has been broken. For the offshore sector, its impact on Mtwara has been the removal of IOCs directly operating in the region. As a result of this, the main industry established during the boom phase, the hospitality industry, has suffered immensely, with many high-end potential hotels half-built and those that have been opened changing business strategies towards the cashew nut industry, a seasonal industry with a different clientele and far less money. The result of this has been that Mtwara has reverted to a ‘normal’ pace of development, once again reliant on the cashew nut sector. While gas no longer dominates the local economy, many of the negative aspects have remained.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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Interviews

One on One Interviews

- Interview, Businessperson 1, Mtwara, 24.07.2018.
- Interview, Businessperson 2, Mtwara, 02.08.2018.
- Interview, Cashew Farmer 1, Mtwara, 23.07.2018.
- Interview, Cashew Farmer 2, Mtwara, 23.07.2018.
- Interview, Cashew Farmer 3, Mtwara 10.07.2018.
- Interview, CUF Member of Parliament, Dar es Salaam, 14.03.2018.
- Interview, Dockworker, Dar es Salaam, 18.02.2018.
- Interview, Economic Planner, Mtwara Municipality, Mtwara, 09.07.2018.
- Interview, Fisherman 1, Mtwara, 24.07.2018.
- Interview, Fisherman 2, Mtwara, 24.07.2018.
- Interview, Former IOC Driver, Mtwara, 09.07.2018.
- Interview, Local Content Director, Mtwara, 13.07.2018.
- Interview, Mtwara Chamber of Commerce, Mtwara, 10.07.2018.
- Interview, Mtwara Resident, Mtwara, 10.07.2018.
- Interview, NAF Beach Hotel, Mtwara, 02.07.2018.
- Interview, NGO Employee 1, Mtwara, 15.07.2018.
- Interview, NGO Employee 2, Mtwara, 15.07.2018.
- Interview, Retired TPDC Executive, 15.03.2018.
- Interview, Senior Mtwara Local Government Officer, Mtwara, 26.07.2018.
- Interview, Tiffany Diamond Hotel, Mtwara, 18.07.2018.
- Interview, Well Manager, Mtwara, 17.07.2018.

Group Interviews

- Group Interview, Madimba Village, Mtwara, 12.07.2018.
- Group Interview, Mtwara City, Mtwara, 07.07.2018.
- Group Interview, Mtwara Market Association, Mtwara, 13.07.2018.
- Group Interview, Msimbati Villagers, 18.07.2018.
- Group Interview, Poverty NGO, Mtwara, 14.07.2018.
- Group Interview, Ruvura Village, Mtwara, 05.07.2018.

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