DEVELOPMENTAL FUSION:
CHINESE INVESTMENT, RESOURCE NATIONALISM, AND THE DISTRIBUTIVE POLITICS OF URANIUM MINING IN NAMIBIA

by

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Abstract

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Developmental Fusion: Chinese Investment, Resource Nationalism, and the Distributive Politics of Uranium Mining in Namibia
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China's rising global influence has significant implications for the politics of natural resource extraction and development in sub-Saharan Africa. Focusing on the uranium industry, I analyze how China's influence operates at global, national, and sub-national scales in relation to natural resource politics in the southern African country of Namibia. Specifically, I draw on multi-methods fieldwork to evaluate 1) how Namibians are engaging with Chinese investments in mining and 2) what implications these engagements have for the politics of mining and development, including natural resource ownership and the distribution of mining-associated benefits and costs. Contrary to portrayals of Africans as passive foreign investment recipients, I find that Namibian elites are leveraging projects like the Husab uranium mine, which is the Chinese government's largest investment in Africa to date, to pursue their own political goals. These goals include an increased role for the Namibian state in mining. This outcome — a noteworthy achievement for a small African state — suggests that foreign investment and resource nationalism are not necessarily at odds. It also indicates that African leaders can leverage Chinese investments to improve their bargaining positions in relation to both the global economy and their own domestic politics. Within Namibia, however, the distribution of benefits and costs associated with projects like the Husab mine is likely to further marginalize already-marginalized populations. Furthermore, by reinforcing the state as the trustee of development, projects like Husab may also make it more difficult for minority communities to challenge mining-based development. Characterizing projects like the Husab uranium mine as neo-colonial

exploitation by China is an over-generalization given the challenges such projects pose to historical uranium geopolitics and mining ownership patterns. It is equally clear, however, that, far from overturning all forms of mining-related exploitation, China's rising influence can also deepen historical inequalities associated with mining, particularly for politically-marginalized communities.

Dedication

To Aunt Mavis, Grandma Marie, and Lucy —

three indomitable spirits and unwavering examples of love, courage, and good humor.

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Chapter 1
China's Rising Influence and Resource Nationalism in Namibia

> The mine [Husab] was opened in a desolate area characterized by barren hills and mountains amongst which a modern highway has been built, leading to life. This mine has brought meaning and purpose to the life [sic] of previously unemployed Namibians. We welcome such projects and that's why we have come to participate in FOCAC with the intention to continue building on our relationship with China in pursuit of more win-win opportunities.
>
> -Namibian President Hage Geingob[1]
> Opening Address, Forum on China-Africa Cooperation (FOCAC)
> December 7, 2015

1.1 Developmental Fusion: Introduction and Research Questions

In November 2012, the Government of the Republic of Namibia (GRN) announced that it had acquired a 10 percent stake in the Husab uranium mine for its new state-owned mining company, Epangelo. Husab is expected to become the world's second-largest uranium mine[2] upon beginning full-scale commercial operations in late 2018. At an estimated final cost of roughly $5 billion, it is the Chinese government's largest-ever investment in sub-Saharan Africa. The GRN acquired the stake for Epangelo after a year of negotiations with China's state-owned China General Nuclear Power Corporation (CGN), which had purchased the Husab license following the post-Fukushima uranium market crash. Valued at roughly $200 million, the Epangelo deal made Husab effectively owned 90 percent by the Chinese government (through CGN) and 10 percent by the GRN (through Epangelo). At the time, CGN was already China's largest generator of nuclear energy. Epangelo, by contrast, existed primarily on paper. Its annual budget totaled just $200,000. For comparison, Komatsu 960E-2KT mining haul trucks, 39 of which will be used at the Husab mine, cost over $4 million each.

[1] See Appendix 3 for a list of Namibia's Presidents.

[2] It will trail only Canada's McArthur River, where production is currently suspended due to low uranium prices.

The development of the Husab uranium mine comes at a transitional moment for both the Namibian and Chinese governments. Representing roughly 70 percent of CGN's total overseas uranium supply, the mine is essential to the Chinese government's ambitious nuclear energy plans, as discussed further in Chapter 3. These plans, which are expected to make China the world's second-largest producer of nuclear energy (after the U.S.) by 2020, are in turn key to the Communist Party of China's (CPC) strategy to reduce domestic air pollution and associated potential political instability without sacrificing economic growth. For the Government of the Republic of Namibia (GRN), meanwhile, Husab comes at a moment of resurgent resource nationalism and rising domestic protest. Many Namibians have grown restless with the ruling SWAPO political party's failure to translate Namibia's significant natural resource wealth into reductions in its nearly-world-leading levels of unemployment and income inequality. The crash in the uranium market following the 2011 Fukushima nuclear disaster, however, has left the GRN with limited resources to address these tensions. As exemplified in the statement by Namibian President Hage Geingob with which I opened this chapter, the Husab project represents a kind of developmental fusion between Namibia and China, with uranium mining and nuclear energy, respectively, billed as the solutions to the development and instability challenges facing the governments of both countries.

This dissertation analyzes the multi-scalar dynamics that have facilitated this developmental fusion between China and Namibia as well as the implications of this relationship for the distributive politics of uranium mining. Two primary questions guided the research:

1) How are Namibian leaders engaging with Chinese investments in mining in the context of renewed calls for resource nationalism?
2) What implications do these engagements have for relationships between the state, natural resources, and development in Namibia, including the distributive politics of mining?

While I collected data on several of Namibia's mining sectors in the course of this research, I chose to focus this dissertation on uranium because of its geopolitical significance, its importance to China's pursuit of a more "green" development model, and its economic significance in the context of Namibia. My analysis uses Namibia's uranium industry as a case study to improve to our understanding of how and why resource politics in Africa are changing in conjunction with China's rising global influence and what implications these changes have for the distributive politics of mining.

The rest of this chapter proceeds as follows: I begin by introducing the theoretical and practical engagements that guided my research, focusing on the intersection of resource nationalism and China's rising influence. Next, I introduce my key findings. To provide context for the chapters that follow, I also provide an overview of Namibia's domestic politics and extractive industries as well as Namibia-China relations. I conclude with a description of the layout of the dissertation, including a summary of each chapter.

1.2 Theoretical and Practical Engagements: A Postcolonial Approach to Resurgent Resource Nationalism, Africa-China Relations, and African Agency

While I draw on literature from academic fields ranging from Political Science to Science and Technology Studies (STS) in this dissertation, my strongest engagements are with postcolonial scholarship in African Studies, Geography, Political Science, and Development Studies. Reflecting the theoretically non-dogmatic approach of postcolonial studies, which gains intellectual coherence despite its theoretical and disciplinary diversity through its prioritization of knowledge grounded in the global South over the global application of theories developed in the global North, I do not apply just one overarching theoretical framework in this dissertation. Instead, I engage with a variety of theoretical approaches to my research topics, which range from distributive politics in Namibia to the technopolitics of China's nuclear energy pursuits. My

approach draws inspiration from scholars affiliated with postcolonial studies who favor a more catholic approach to research and analysis, including Achille Mbembe and Timothy Mitchell, among others. In the rest of this section, I describe my engagements with a variety of theoretical approaches to understanding the intersection of resource politics, China's rising global influence, and African agency.

Resource Politics and China's Rising Global Influence

Geographers and other social scientists have long been interested in the relationships between natural resources and states and the ways in which resource-making and state-making intertwine, including in the realm of distributive politics (Coronil 1997; Bakker and Bridge 2006; Emel et al. 2011; Mitchell 2011; Bridge 2013). This research has shown that natural resources can be used to facilitate geopolitical power shifts (Yergin 1991), state-led modernity projects (Coronil 1997), and entire political-economic systems (Mitchell 2011; Huber 2013). Research on the use of natural resource governance as a tool for political legitimacy spans Asia (Scott 1998; Li 2007), Latin America (Coronil 1997; Karl 1997; Burchardt and Dietz 2014), the former Soviet Union (Ebel and Menon 2000; Auty and De Soysa 2006; O'Lear 2007), the Middle East and North Africa (Ross 2001; Schlumberger 2010), and sub-Saharan Africa (Englebert 2002; Cooper 2002; Jensen and Wantchekon 2004; Soares de Oliveira 2015). Moreover, by framing resource extraction as central to state-led development, political elites can use natural resources as tools to establish the state as the proper scale of resource ownership and to strengthen the state's credibility as the trustee of development (Ferguson 1994; Cowen and Shenton 1996). State-sanctioned portrayals of natural resources are not always accepted, however, and divergent scalar understandings of resources as, for example, "international commodities" or "national resources" can foment socio-political tensions and conflict (Fraser and Larmer 2010; Le Billon 2001), as in

South Africa's 2013 Marikana strike and subsequent massacre (Hart 2013). Understanding these divergent perceptions of resource extraction requires evaluating how extractive industries are both enmeshed in broader political-economic systems and situated in particular contexts (Knapp et al. 1998; Watts 2004). These contexts, as I discuss below, include local manifestations of broader transitions such as China's geopolitical rise.

Over the past ten years, resource-state relations have shifted in conjunction with a resurgence of resource nationalism, particularly in the global South. Political leaders have moved to strengthen the role of the state in extractive industries and/or to intensify the use of resource extraction for national development through strategies that have included resource nationalist rhetoric, the creation of state-owned enterprises (SOEs), and policies promoting nationalization or indigenization (e.g., limits on foreign investment or requirements that SOEs or local companies participate in mining projects). Political leaders have often justified these changes in the name of national progress via resource-based development, including increased social spending funded by oil and gas, mineral, or agricultural projects (Gudynas 2009; Burchardt and Dietz 2014).

These developments have received significant attention in the context of Latin America, where they are often characterized as "neo-extractivism" (Gudynas 2009; Veltmeyer 2013; Burchardt and Dietz 2014; Millanez and Santos 2015; North and Grinspun 2016; Savino 2016; Van Teijlingen 2016; McKay 2017; Shilling-Vacaflor 2017; Villalba-Eguiluz and Extano 2017). Political leaders' pursuits of strengthened state roles in resource extraction have received less attention, however, in sub-Saharan Africa. Notable exceptions include Soares de Oliveira (2015) on Angola, Andreasson (2015) on patterns in resource nationalism across the continent, and the case study of Ghana in Childs and Hearn (2016). There are significant differences between sub-

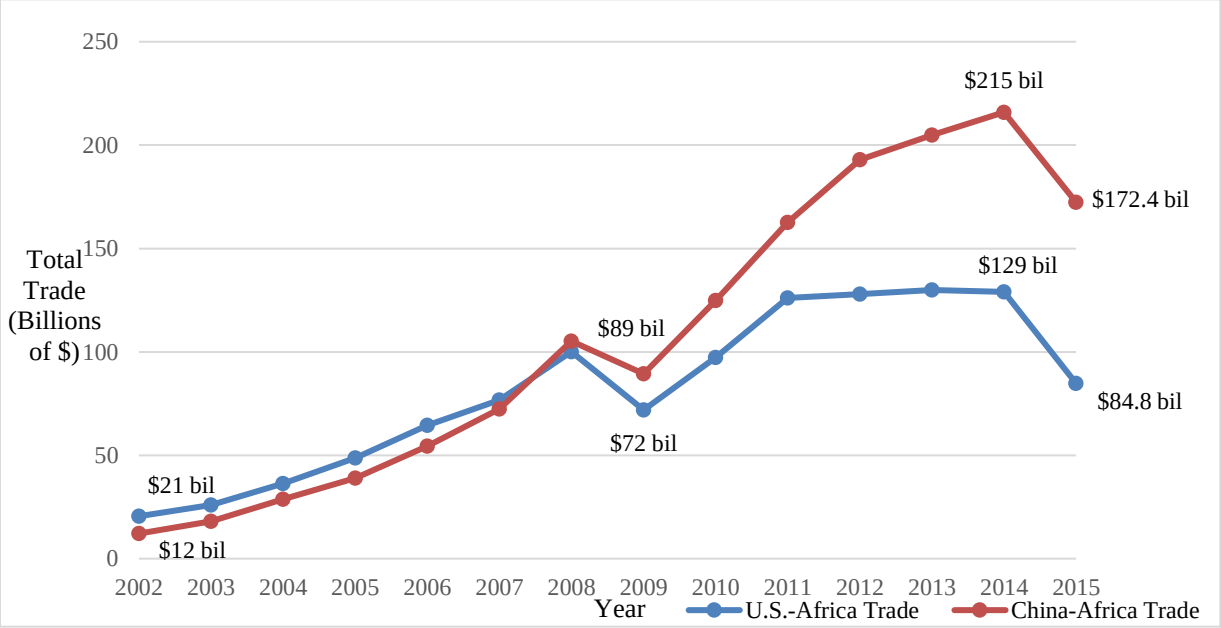
Saharan Africa and Latin America in the realm of resource politics, from divergent colonial histories to distinct labor politics. Given these distinctive contexts, it is not clear that the findings of the existing neo-extractivism literature on Latin America can be applied to sub-Saharan Africa. In this dissertation, I engage primarily with earlier research on resource politics in sub-Saharan Africa (e.g. Yates 1996; Le Billon 2001; Ross 2001; Watts 2003; Ferguson 2006) in order to contribute an empirical basis for future scholarship to identify similarities and differences between shifts in resource politics between the two regions.

Despite the lack of scholarly attention to shifts in resource politics in sub-Saharan Africa compared to Latin America, there is no shortage of resource nationalist developments underway in Africa. Just over ten years after Ferguson (2006, 204) described the growing dominance of Angola's "enclave" extraction model, the "thick" "national development model" appears to be returning to the fore. Recent resource nationalist shifts have included calls for nationalization in Mozambique, indigenization in Zimbabwe, the creation of mining SOEs in Namibia and Ghana, proposals for progress requirements for private companies in Tanzania, and the establishment of political parties pursuing resource ownership redistribution in South Africa. At least eleven African countries have developed in the last ten years or are currently developing local content policies in the oil and natural gas sectors alone (Ovadia 2012 and 2014; Ablo 2015; Lange and Kinyondo 2016). Politicians' stated goals in pursuing these shifts have included combating the resource curse (Ghana), ensuring that citizens — rather than foreigners — benefit from mining (Zambia, Zimbabwe), and abandoning neoliberal policies (South Africa).

Resource nationalism has not been the only development in Africa's extractive industries over the past ten years. China's rising global influence is one of the most significant developments since the end of the Cold War. The economic basis of this geopolitical transition is

particularly notable in Africa, a continent formerly labeled "hopeless" (*Economist* 2000) but now often described as undergoing a "renaissance" (*Economist* 2013a; World Bank 2014). China's influence in Africa's recent growth is most obvious in comparative terms. Figure 1.2.1 presents trade data consolidated by the China-Africa Research Initiative (CARI) at the Johns Hopkins School of Advanced and International Studies. China-Africa[3] trade increased eighteen-fold from 2002 to 2014, compared with a six-fold increase in U.S.-Africa trade over the same period. To take a longer view, between 1985 and 2015, China's share of total global trade with Africa increased from 2 percent to over 25 percent (data: CARI 2017).

Figure 1.2.1. China-Africa and U.S.-Africa trade, 2002-2015 (Data: China-Africa Research Initiative (CARI) 2017)



Africa's recent trade growth defies Castells' (1998) argument that Africa risked becoming a "fourth world" not even of extractive value, but the implications of this growth for Africans are less clear. African states' integrations into global markets have historically been marked by simultaneous inclusion and exclusion (Ferguson 2005), at times strengthening the positions of

[3] "Africa" data in this dataset are for sub-Saharan Africa only.

African states within the global economy (Bayart and Ellis 2000) but also reinforcing unequal exchange patterns and deepening inequalities across scales (Watts 1987).

Furthermore, despite modest growth in manufacturing and service sectors, the current investment boom remains concentrated in resource extraction, continuing the long-standing dominance of extractive industries in exports from African countries to the rest of the world (Cooper 2002). By 2020, the World Bank (2012) projects that all but four African states will be significant exporters of natural resources. If historical patterns continue, this intensification of resource extraction may have negative political, economic, and developmental implications. Resource wealth in Africa, as well as other regions in the global South (e.g., the Middle East, Latin America), has often been associated with challenges together described as the "resource curse." Coined by economist Richard Auty (1993), the resource curse describes countries which, despite their natural resource wealth, have failed to experience economic, political, or development gains. Scholarship analyzing the resource curse typically focuses on its political, economic, and developmental elements, although some scholars (e.g., Karl 1997) have also analyzed its cultural elements. Economic problems associated with natural resource wealth include inequality and "thin," enclave-based development (Ferguson 2006), revenue instability for governments (Auty 1993), and the "Dutch disease" (for original usage, see *Economist* 1977; for analysis, see Auty 2001 and Humphreys et al. 2007). The latter refers to an economic situation in which oil and/or mineral-associated currency appreciation hampers the competitiveness of other export industries (e.g., agriculture), creating a cycle that leads a country's economy to become increasingly dependent on oil and/or mineral exports. Political challenges associated with the resource curse, meanwhile, include corruption (Karl 1997),

excessive patronage (Lam and Wantchekon 2002), rentier politics (Mahdavy 1970; Yates 1996), and poor government accountability (Karl 2008).

In sub-Saharan Africa, the resource curse has become particularly associated with political violence (Le Billon 2001; Collier and Hoeffler 2002; Watts 2004; Korf 2011) and authoritarianism (Ross 2012). In capital-intensive industries where access to resource wealth requires control of the state, ruling parties have significant incentives to retain power. They can use resource wealth to do so by "buying off" opposition groups or elements of society (Ross 1999), spending large sums of money on security and repressive political institutions (e.g., police and paramilitary forces; see Watts 2004 on Nigeria and Soares de Oliveira 2015 on Angola), or carrying out violence against citizens or opposition groups (Le Billon 2001). The temptation of defensive violence is further reinforced by the incentive opposition groups have to overthrow ruling parties to gain access to resource wealth (Ross 2001).

The best work on the resource curse avoids what Watts (2001, 189) refers to as "commodity determinism" (e.g., oil causes violence) by focusing on natural resources as a *tool* by which political leaders can accomplish or fail to accomplish particular goals (e.g., continued political rule, development). Research by Jensen and Wantchekon (2004), for example, suggests that the level of control that political leaders have over resources is significantly and negatively associated with a country's level of political freedom. This indicates that leaders' control over resources is likely a greater determinant of a country's political freedom than the mere presence of resources. My approach to resource politics follows Jensen and Wantchekon's (2004) approach. I am interested in how political leaders *use* natural resources in their pursuit of particular political aims, including stability and legitimacy in the case of Namibia (described later in this chapter).

While researchers have examined both recent changes in resource politics (e.g., neo-extractivism, resource nationalism) and rising Chinese influence separately, albeit in a geographically-uneven manner,[4] there has been little attention to how these two trends intersect in particular contexts. Research on Africa-China relations has already demonstrated that China's rising influence has implications for Africans in the realms of aid (Brautigam 2009; Dreher et al. 2018), culture (Fijałkowski 2011), agriculture and food security (Brautigam 2015), commerce (both licit, Slyvanus 2013, and illicit, Ndjio 2009 and 2014), and even corporate social responsibility and environmental management (Tan-Mullins and Mohan 2013; Tan-Mullins 2014), among other areas. Given these findings, it is reasonable to suspect that strengthening Africa-China ties also have implications for natural resource politics and social relations (e.g., the distribution of mining-associated costs and benefits).

How China's rising influence is affecting resource politics is not obvious though. Anti-foreign investment policies and discourses have become a prominent theme in African politics over the past decade. South Africa (Andreasson 2015; Berry 2015), Tanzania (Lange and Kinyondo 2016), Zambia (Berry 2015; Lee 2018), and Zimbabwe (Magure 2012) provide only a few examples of increasing societal concerns with the role of foreign investment in extraction. Given the anti-foreign investment tendencies typically associated with resource nationalism, we might expect that African governments facing citizenries skeptical of foreign investment would be inclined to intensify their resource nationalist pursuits as a means of resisting or limiting China's influence, particularly in high-profile extractive industries. Indeed, Zambian President

[4] The difference in focus on these two trends between Latin America and sub-Saharan Africa is striking. While neo-extractivism has been heavily-researched in Latin America, there has been relatively little work on neo-extractivism in Africa. The opposite is true regarding Chinese investment: there has been far less work on Chinese investment in Latin America than in Africa. China's influence in mining in Latin America has, however, received some attention in Escribano (2013), González-Vicente (2011 and 2013), and Arsel, Hogenboom, and Pellegrini (2016).

Michael Sata used anti-China rhetoric to remarkable success in his 2011 campaign (Laing 2011). Appealing to growing anti-Chinese sentiments among voters, his victory was facilitated by his arguments that "Zambia has become a province of China" and "the Chinaman is coming just to invade and exploit Africa" (French 2011).

My early research in Namibia, however, led me to wonder whether some African governments pursuing resource nationalist policies might, perhaps counterintuitively, be inclined to *support* foreign investment from China. While there is historical continuity in the resource-centrism of Chinese investments in Africa, the forms that these investments are taking diverge from post-colonial patterns. With some exceptions (e.g., France's Areva), Western investments in Africa have primarily occurred via private companies (e.g., Rio Tinto, Newmont Mining). By contrast, investments from emerging powers, including in Namibia's Husab mine, are often channeled through state-owned or affiliated entities (e.g., Brazil's Petrobras, Russia's Gazprom, China's CGN). Chinese investments in Africa are particularly noteworthy when it comes to SOE involvement. While the number of active Chinese SOEs operating in Africa is far lower than the number of active Chinese businesses, 75 percent of Chinese foreign direct investment (FDI) in Africa is channeled through SOEs (Xu 2014). If, following Frank (1978), the challenges of raw material export reliance stem more from the social relations embedded within trade than from resources' intrinsic features, Africa-China partnerships involving SOEs, which can eliminate the "middle man" of commodity markets, could perhaps mitigate extraction-associated problems if they sufficiently modify their social relations. Particularly given China's history of anti-imperial activism and non-interference, Chinese investments may be uniquely appealing to some African leaders. Indeed, the Chinese government's "mutual benefit" rhetoric (Strauss 2009) is popular

among some African elites, who emphasize the anti-colonialism of "south-south solidarity" and the willingness of the Chinese government to let them set their own agendas (Brautigam 2009).

The ownership structure of Namibia's Husab mine (90 percent Chinese SOE and 10 percent Namibian SOE) suggests that "mutual benefit" may not be limited to the realm of the rhetorical when it comes to Africa-China relations. Such partnerships raise pressing questions about Africa's shifting resource (geo)politics that researchers have not yet conclusively answered. Are Chinese investments in Africa's extractive industries facilitating improved development opportunities, as argued by Moyo (2009) and Bloom and Poplack (2016), that will lead to a more just distribution of resource extraction's costs and benefits? Or are such investments encouraging authoritarianism and undermining the rights of Africans, as argued by Tull (2006) and Taylor (2008), in ways likely to deepen the problems long associated with resource extraction on the continent? In 1980, Granata (512) argued[5] that "[i]t is the local reality that determines the total picture, and not the reverse." I take Granata's argument as a starting point for answering the questions above, using Namibia's uranium mining industry as a case study for better understanding how China's rising influence is affecting the distribution of extraction-related benefits and costs in Africa.

African Agency and Context in Africa-China Relations

In addition to contributing to our understanding of how Chinese investments are affecting natural resource politics, this dissertation contributes to two additional areas within Africa-China relations: 1) the need to attend to African agency and 2) the importance of context in shaping the implications of Africa-China engagements. Political and media analyses of Chinese investments

[5] The context of Granata's proclamation was his analysis into how and why Italian Fascism developed. The translation above was used by John Agnew (1987, 6) in *Place and Politics: The Geographical Mediation of State and Society*.

in Africa have often taken binary form. Supporters have praised Chinese investments as examples of "south-south solidarity" and "development opportunity" that strengthen Africans' agency in choosing development, political, and trade partners. Detractors, meanwhile, have portrayed these investments as "resource-grabbing" and as signifying China's rise as a "neo-colonial" power. Moyo (2009) and Bloom and Poplack (2016), for example, argue that Chinese involvement is distinct from Western involvement due to China's emphasis on mutual benefit. As a result, Chinese investments increase Africans' power to set their own development priorities. Brautigam (2009) indicates that many African leaders agree with these assessments. She quotes Senegalese President Wade as arguing that "China's approach to our needs is simply better adapted than the slow and sometimes patronizing approach of Europe (135)" and an unnamed Nigerian diplomat as observing that "[t]he Chinese are trying to get involved in every sector of our economy. If you look at the West, it's oil, oil, oil, and nothing else (279)." Melber (2011) agrees with the above authors that China's approach differs from those of Western investors, but he contends that China's goals are similarly exploitative. Others support this view, arguing, for example, that Chinese investments uniquely threaten Africans governments' sovereignty over their resources (Burgess and Beilstein 2013; Caceres and Ear 2013). These binary positions echo broader debates in the academic and policy communities over the continental and global implications of China's rise as a world power for issues like human rights and authoritarianism (Tull 2006; Taylor 2008), development (Sidaway 2012; Quadir 2013), and geopolitics (Large 2008a), including U.S. hegemony (Anshan 2007; Taylor 2007).

Such generalist analyses are useful for considering how China's rise affects Africans in broad terms and for assessing how Chinese investments fit into broader political economic and geopolitical trends. There are two dangers in relying exclusively on such big-picture analyses

though. The first is a China or Western-centric view that overlooks the agency[6] of African actors. In addition to facilitating a convenient forgetting of many problematic historical and contemporary Western involvements in Africa (Wainaina 2013), portrayals of China as an exploitative aggressor perpetuate discursive framings of Africans as helpless victims (Mawdsley 2007) by treating both elite and non-elite Africans as passive recipients of foreign investment.

By contrast, theorists of African politics, as well as scholars of the global South more broadly (e.g., Coronil 1997), have indicated that African actors are often far from passive recipients of global changes (Bayart 1989; Comaroff and Comaroff 1997; Cooper 2002) or geopolitical backwaters (Ferguson 2008). Africans are not separate from the processes and power relations driving global changes, from the development of capitalism (Comaroff and Comaroff 1997) to the violence of colonialism (Mbembe 2001). External actors have played and continue to play critical roles in shaping the trajectories and dynamics of African societies, but not to the complete exclusion of African actors (Bayart 1989).

Similarly, Africans are also far from passive actors in the realm of resource politics. Some more deterministic interpretations of the resource curse suggest that African political leaders are merely at the mercy of their resource wealth. While resource wealth presents many challenges, as described earlier in this chapter, African political leaders have also leveraged such wealth for political and economic advantage. Bayart and Ellis (2000), for example, analyze African political leaders' use of resource dependency to centralize the state's role in wealth creation and distribution, a strategy they describe as "extraversion." Cooper (2002) characterizes a similar centralization of power as the "gatekeeper state." Regardless of preferred terminology,

[6] Following Chipaike and Bischoff (2018, 12), I conceptualize agency as the ability of Africans to take "deliberate, intentional and goal-oriented decisions to enhance their social, political or economic standing" or to otherwise negotiate and bargain effectively in the pursuit of their own interests.

capital flows associated with resource extraction are a key component of the "extraversion portfolios" (Peiffer and Englebert 2012) of many African leaders. Especially when combined with state ownership over resources themselves, extraversion strategies enable African leaders to centralize the role of the state as a "spigot" (Cooper 2002, 171) for the flow of resource exports and associated revenues. This situation can facilitate what Mahdavy (1970) labeled the "rentier state," a term that has subsequently been applied to Gabon (Yates 1996), Nigeria (Omeje 2006), and the Republic of Congo (Englebert and Ron 2004), among others. Such strategies make African states key sites for wealth creation, accumulation, and distribution, including through patronage (Berman 1998; Arriola 2009), the provision of services (Englebert 2002), and even the devolution of powers to particular local authorities (Boone 2003), among other tactics.

Drawing on the literature on African states' engagements with foreign investment, Corkin (2013) has argued that African actors exercise varying degrees of agency in their relationships with Chinese investors. While China's comparative political and economic power in its relations with African states cannot be overlooked, the African politics research cited above should lead us to suspect that Africans' engagements with China are more complicated than the passive victim model that often characterizes geopolitical analyses of China in Africa. Angolan elites, for example, have used oil-backed infrastructure loans to support their need for domestic political legitimacy (Corkin 2013). Although not expressed in terms of agency, a similar argument also appears to underlie arguments that rising Chinese investment will facilitate increased violence and authoritarianism in Africa. Echoing theories of the political elements of the resource curse that focus on how political leaders use increased revenues from resource extraction to buy off or suppress political opposition (e.g., Ross 2001), Kishi and Raleigh (2015), for example, identify increased state financial resources as the likely mechanism by which China's rising influence

may facilitate increased violence in African states receiving greater amounts of Chinese aid. In this dissertation, I follow Corkin's lead by analyzing how Namibian actors are engaging with Chinese investments in uranium and influencing the distributive outcomes associated with those investments. Reflecting my approach to the resource curse described above, I focus on how African leaders are using China's rising influence to accomplish their goals rather than treating China as the sole actor in Africa-China relations. I also provide evidence that increased revenue and/or revenue autonomy (associated with China's emphasis on non-interference and sovereignty) is likely not the only mechanism by which China's rising influence may be associated with authoritarianism in Africa. Instead, drawing on the case of Namibia and scholarship on African agency, I argue that African leaders' interpretations of China's development model may complement increased revenue and revenue autonomy in driving recent increases in authoritarianism across the continent (see *The Economist* 2016b).

The second danger in relying on generalist analyses of Africa-China relations is the risk of overlooking the importance of context in shaping these relations and their outcomes. Chinese involvement in Africa is often portrayed as a new phenomenon, but Africa-China relations date back centuries (Snow 1988), most notably since the 1955 Bandung Conference (Strauss 2009). Africa-China relations are thus situated in the histories of African states whose independence often coincided with increasing Chinese influence. In addition, far from a "monolithic Chinese dragon in an unvariegated African bush stripped of historical and political context" (Large 2008a, 45), Africa-China engagements take a wide variety of forms with associated divergent implications, from official state-to-state aid to the operations of small traders (Brautigam 2009). The consequences of state-based Chinese investments, for example, differ from those of private investments (Carmody and Owusu 2007). Carmody and Taylor (2010, 497) argue that Chinese

investors employ "flexigemony" in their relations with African states, adapting their engagements to reflect particular states' historical and geographical contexts. An appreciation for divergences in national and sub-national politics is thus essential to analyzing Africa-China relations. Such place-dependent analyses can facilitate our understanding of Africa-China relations as dynamically constituted through the interpretation, negotiation, and resistance by actors operating within particular historical, social, and political economic contexts (Glassman and Samatar 1997).

This dissertation contributes to scholarship on how context shapes Africa-China engagements by applying Carmody and Taylor's (2010) attention to diplomatic flexibility to African as well as Chinese actors. First, I analyze how domestic contextual factors (e.g., the liberation struggle, China's reputation in Namibia) affect Namibian political leaders' engagements with China as well as ordinary Namibians' perceptions of those engagements. Second, I evaluate how Namibian political leaders strategically engage with Chinese investments to pursue goals that reflect the priorities of China (e.g., economic rights, state-led development) rather than those of Western investors (e.g., political rights, neoliberal policies).

With Africa expected to account for more than half of the world's total population growth between 2017 and 2050 (United Nations 2017), understanding how and why which Africans are engaging with China's rising influence, where, and in which contexts is a pressing research need. The stakes of these implications are perhaps nowhere higher than in resource extraction, given the sector's long association with conflict (Collier and Hoeffler 2004; Humphreys 2005; Bebbington and Bury 2013; Adunbi 2015), autocracy (Ross 2001; Smith 2004; Karl 2008), environmental degradation (Watts 2004; Urkidi and Walter 2011), human rights abuses and social injustices (Watts 2005; Ferguson 2006; Hilson 2010; Lu, Valdivia, and Silva 2017), and

development challenges (Auty 2002; Humphreys, Sachs, and Stiglitz 2007) in Africa and beyond. Rather than assuming Africans universally "[draw] the short straw" (Corkin 2013, 193), my research draws on the literatures on African agency and contextual factors shaping Africa-China relations to address the following questions: How and why are African actors engaging with Chinese investments in resource extraction, and for what purposes? And, what are the implications of those engagements for African governments as well as for divergently-situated Africans?

1.3 Key Findings

Building on the theoretical engagements and broader lines of inquiry introduced above and using the methodological approaches described in Chapter 2, this dissertation answers the following two questions in the context of Namibia's uranium industry:

1) How are Namibian leaders engaging with Chinese investments in mining in the context of renewed calls for resource nationalism?
2) What implications do these engagements have for relationships between the state, natural resources, and development in Namibia, including the distributive politics of mining?

My analysis leads me to the following conclusions. First, far from being mere passive recipients of foreign influence and investment, GRN officials are leveraging Chinese investments in Namibia's uranium sector to pursue their own political goals. These goals include resuscitating the uranium industry as a source of GRN revenue, increasing the role of the state in mining, strengthening the SWAPO ruling party's legitimacy as the trustee of Namibians' development, and mitigating the risk of political instability and opposition despite Namibians' growing concerns with mining-related problems, including corruption, inequality, and unemployment.

Second, China's increasing influence in Namibia's uranium industry is changing the distribution of the benefits and costs of uranium mining at multiple scales. Globally, China's

approach to nuclear energy is facilitating a future in which African states may become nuclear powers in their own rights, rather than mere providers of uranium for nuclear powers. Nationally, the involvement of the Namibian state in the Husab mine challenges historical patterns of resource ownership in the uranium mining industry. The mine's ownership structure benefits both the Namibian and Chinese governments, reflecting a materialization of the rhetoric of "south-south solidarity" used by Chinese and Namibian officials. If it is successful, the Husab model may be appealing to other African governments looking to improve revenue stability (a key problem associated with the resource curse) and increase mining revenues for national development or other purposes. Simultaneously though, Chinese investments in Namibian uranium appear to be deepening the marginalization of minority populations at the sub-national scale, including the very Namibians the GRN portrays as the greatest beneficiaries of projects like Husab. While this marginalization did not begin with Chinese investment, it is unlikely that Namibia's uranium industry would be growing without that investment. Furthermore, by reinforcing the Namibian state as the guardian of development, projects like Husab may perversely make it more difficult for politically-marginalized populations to challenge mining-led development.

I conclude that characterizing projects like the Husab mine as "neo-colonial" exploitation by China is an overgeneralization given the challenge Husab poses to historical uranium geopolitics and mining ownership patterns. It is equally clear, however, that, far from overturning all forms of mining-related exploitation, China's rising influence may also deepen historical inequalities associated with uranium mining, particularly at sub-national scales. Given Namibia's relatively weak bargaining power compared to many other resource-rich African states (e.g., Nigeria), my findings suggest that other African governments may also be successful

in using Chinese investment to increase their power relative to the global political economy of mining and/or their own populations. Given Namibia's comparative status in the context of Africa as a strong democracy and resource-based development "success story" (see Section 1.4), the GRN's use of Chinese investments to increase the power of the SWAPO-led state vis-à-vis opposition groups and minority populations also suggests that concerns that China's rising influence may undermine human rights and democracy in Africa may be well-founded.

1.4 Context of Namibia

I provide contextual details on Namibia as they are relevant throughout this dissertation. It is useful, however, to provide some initial details at the outset. In this section, I provide background on the importance of the liberation struggle in Namibian politics, Namibia-China relations, and resource politics, including the resource curse, in Namibia.

SWAPO and the Liberation Struggle

As in Zimbabwe and South Africa, Namibia's liberation struggle plays a central role in its politics, including the strength of support for its ruling party, SWAPO.[7] Namibia, then called South-West Africa, was a German colony until World War I, when it became a "Class C" mandate (reserved for the "least-developed" territories) of South Africa. Under this mandate, South Africa ran South-West Africa as a "de facto" province and eventually made it subject to apartheid laws, including contract labor and the homeland system (Leys and Saul 1995; Thornberry 2004). The legacies of South African occupation remain visible today in Namibia's high inequality, racial segregation, and many of its mining laws (Mbuende 1986; Becker 1995).

[7] SWAPO was formerly an acronym for Southwest Africa People's Organization. Today, the party refers to itself as simply "Swapo Party." I use SWAPO in this dissertation because it continues to be more commonly used than Swapo among Western audiences.

The United Nations (UN) revoked South Africa's mandate in 1966 after repeated South African refusals to replace it with an alternative system, catalyzing Namibia's 23-year liberation struggle. The UN decision was followed by a SWAPO-led strike against the South African contract labor system in which 25 percent of Namibian workers, including mining laborers, ceased work to protest the occupation. SWAPO also began guerilla military operations in 1966 with support from Cuba, the USSR, and China. As SWAPO attempted to consolidate its authority over the liberation struggle, its military branch came to dominate its internal politics. With a support base in Namibia's largest ethnic group, the Owambo,[8] SWAPO (est. 1960) faced a liberation struggle competitor in SWANU (est. 1959), which drew support from Namibia's second-largest ethnic group, the Herero. Thousands of Namibians who supported SWANU or other non-SWAPO entities or were accused of spying on SWAPO were tortured, and hundreds were killed (Leys and Saul 1995; Melber 2014). SWAPO's efforts were perversely legitimized in 1972, when the UN recognized SWAPO as the "sole legitimate representative" of Namibians. SWAPO's contemporary tendencies toward suppressing dissent (discussed further in Chapter 6), have their roots in this history of "SWAPO-or-bust" liberation struggle politics (Melber 2014).

International pressure on South Africa grew in 1977, when the Western Contact Group (Canada, the U.S., the U.K., West Germany, and France) held negotiations on Namibian independence. These efforts stalled in 1978, when South Africa unilaterally held elections — boycotted by SWAPO — in which only whites could vote (Thornberry 2004). Cold War proxy conflict in Angola further stalled Namibian independence, as the so-called "border war" between SWAPO and South Africa was absorbed into the Angolan civil war (Minter 2008). In 1988, UN Commissioner for Namibia Bernt Carlsson was finally able to facilitate the withdrawal of South

[8] See Appendix 3 for information on the ethnic composition of Namibia's population.

African troops from South Africa via the Brazzaville Protocol and the Tripartite Accord, which held despite several returns to violence. In November 1989, free and fair elections were held with 98 percent turnout. SWAPO won 57 percent of the vote, followed by the Herero-based Democratic Turnhalle Alliance (DTA) with 29 percent. Namibia became independent on March 21, 1990, with SWAPO liberation leader Sam Nujoma sworn in as President.[9]

Even more so than South Africa's ANC, SWAPO has transitioned its liberation struggle leadership into relatively unquestioned one-party dominance (see also Lemos 2007; Melber 2014). SWAPO and the GRN are typically equated with each other, and no opposition party has received over 12 percent of the vote in any post-1989 national election. SWAPO won the most recent national election in 2014, for example, with 87 percent of the popular vote. Today, SWAPO members lead all government agencies, hold 77 out of 96 parliament seats, and hold majorities in all 13 regional councils. It is difficult for opposition parties to challenge SWAPO without being accused of taking for granted the liberation struggle sacrifices of its leaders. Even more than 25 years after independence, SWAPO opponents are often characterized as "unpatriotic" or even "apartheid sympathizers," regardless of race (see Wasserman 2010; Melber 2014). As I describe in Chapter 6, SWAPO's dominance of Namibian politics has implications for resource politics and the distribution of mining-related benefits and costs, as the questioning of the GRN's mining policies is often equated to the questioning of SWAPO's leadership.

Namibia-China Relations

Namibia has received little attention in popular or academic studies of Africa-China relations, particularly compared to resource exporters like Zambia (Carmody 2011), Sudan

[9] Namibia did not achieve full territorial integrity, however, until March 1, 1994, when Walvis Bay, a South African enclave on Namibia's coast, was transferred to Namibia. For more on this, see Simon (1996).

(Carmody and Taylor 2010; Large 2008b), and Angola (Corkin 2013). Exceptions include Dobler's (2007) fieldwork on Chinese merchants in northern Namibia, several analyses of historical Africa-China ties (Taylor 1997; Sherbourne 2007; DeBoom 2017; Dobler 2017; Melber 2017), several reports by Namibian NGOs (e.g., Jauch and Sakaria 2009), a case study of Chinese migrants in Namibia in French's (2014) *China's Second Continent*, and a recent feature on China–Namibia relations by Larmer (2017) in *The New York Times Magazine*. The lack of attention to Namibia is likely related to its small population of 2.5 million, its relative political stability, and the recent nature of its major Chinese investments.

Namibia-China relations are rooted in Cold War geopolitics, a history that is obvious in contemporary portrayals of China by Namibian officials (discussed below). China established ties with SWAPO in the early 1960s as a supporter of its liberation struggle efforts. During future Namibian President Sam Nujoma's first visit to China in the 1960s, he received supplies for SWAPO's work in exile, developed plans to send SWAPO troops to China for military training, and built friendships with Communist Party of China (CPC) leaders (Dobler 2007). At the subsequent 1969 SWAPO Consultative Conference in Tanzania, after which Namibia's armed liberation struggle intensified, SWAPO leaders explicitly thanked the CPC for its moral and material support (du Pisani 2014). Nujoma visited China seven additional times in the 1970s and 1980s (Sherbourne 2007). Although SWAPO was allied with the USSR during this time, the Sino-Soviet split did not affect Namibian politics as extensively as in neighboring Angola (Corkin 2013) or Zimbabwe (Taylor 1997). As negotiations for Namibian independence progressed, China solidified its relationship with SWAPO by providing diplomatic support on the UN Security Council and becoming one of the first countries to recognize Namibia's independence. The relative importance of Chinese assistance to Namibian independence vis-à-

vis Soviet support is debated domestically (DeBoom 2013), but China provided at least modest assistance to SWAPO throughout Namibia's liberation struggle.

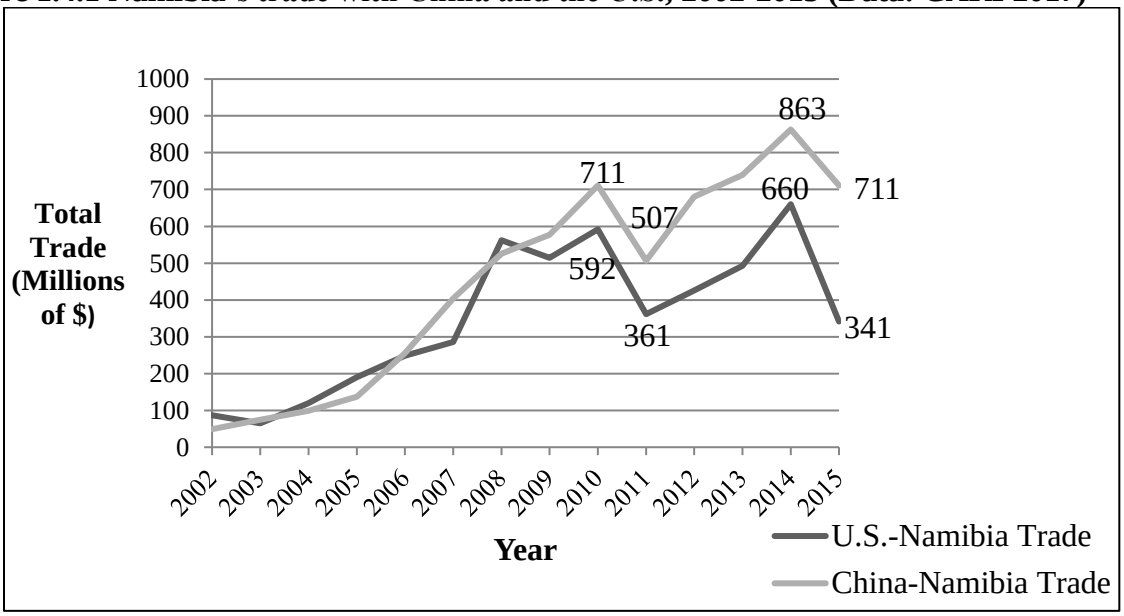
The CPC's support during the struggle facilitated a strong allegiance between China and the independent Namibian state's SWAPO leaders. China also assisted SWAPO's efforts to consolidate its post-independence political power. President Sam Nujoma participated in five official visits to China during his three terms in office. During these visits, he secured $20 million in grants and $130 million in concessional loans, including preferential export buyer's credits and funding for infrastructure, hospitals, and the establishment of the Namibian Defense Force (Jauch and Sakaria, 2009: 31). The CPC even made campaign donations to SWAPO. In the 2004 election, for example, the CPC donated $30,000 for campaign materials, spurring domestic concerns about excessive Chinese influence in the GRN (e.g., Sasman 2009). Today, SWAPO leaders return the favor by emphasizing China's liberation struggle role. In so doing, they endow China with what Namibians often call "struggle credentials" (discussed below).

Trade initially played a relatively minor role in Namibia-China relations. Major Chinese investment projects were focused elsewhere, and South Africa, the U.K., and Australia were the primary sources of foreign investment in Namibia, including in the mining sector. As in several other African countries (Brautigam 2009), increasing Chinese investment in Namibia began with Chinese construction firms' involvements in Chinese government-funded infrastructure projects, including the new Namibian State House. The 2006 Forum on China-Africa Cooperation (FOCAC) in Beijing, which celebrated 50 years of China-Africa diplomatic relations, marked a turning point in Namibia-China economic relations. In the following year, Chinese President Hu Jintao visited Namibia to sign the Trade and Economic Development Agreement and the Reciprocal Protection of Investments Agreement. A Joint Trade and Economic Development

Committee implemented the bilateral activities resulting from these two agreements, including a yearly Namibia-China Business Forum, tours of Namibian mining sites for Chinese government officials, Chinese government-sponsored trips for GRN officials to attend workshops in China and, controversially, scholarships for Namibian students to study in China, several of which were awarded to the children of SWAPO leaders.

Today, South Africa remains Namibia's largest source of foreign investment, but China is Namibia's fastest-growing trade partner and investment source. As shown in Figure 1.4.1, U.S.-Namibia trade was double China–Namibia trade in 2002. Today, Namibia-China trade is more than double U.S.-Namibia trade, having increased tenfold between 2003 and 2010 alone. Chinese direct investment in Namibia since independence surpassed $4.3 billion in March 2016 (*New Era* 2016). In 2015, a representative of the Chinese embassy in Namibia estimated that there were 50+ Chinese companies and more than 600 retail shops (often called "China shops") operating in Namibia, together generating over $1 billion in annual revenues (Interview A).

Figure 1.4.1 Namibia's trade with China and the U.S., 2002-2015 (Data: CARI 2017)[10]



[10] This chart originally appeared in DeBoom (2017).

Although small Chinese businesses operate in Namibia's construction and retail sectors, China's largest individual investments in Namibia are in mining, particularly uranium. The new Chinese embassy compound in Windhoek (Figure 1.4.2), which another Chinese representative described as the third-largest in sub-Saharan Africa (Interview B), is perhaps the best indication of China's long-term interests in Namibia.

Figure 1.4.2. Views of the Chinese embassy in Windhoek, Namibia (Image: Google Earth 2018)

Reflecting strengthening Namibia-China ties, GRN officials have portrayed China in an overwhelmingly positive manner in the last 10 years. In my comprehensive analysis of 261 statements[11] by GRN officials[12] with substantive mentions of China from January 2008 through July 2017, I found that 208 statements (79.7 percent) portrayed China positively. Only 53 statements portrayed China negatively.[13] Most negative portrayals originated within opposition political parties. Those that originated with SWAPO members overwhelmingly focused on the

[11] This number does not include over 250 additional portrayals that I deemed to be neutral.

[12] I collected formal statements from the archives of the GRN Parliament and President, which includes statements by SWAPO and non-SWAPO politicians. I supplemented this collection with media reports. The data cited in this section only includes rhetoric used by GRN elected leaders at the national level. It does not include statements by local politicians or rhetoric from opposition groups that are not registered as political parties (e.g., Affirmative Repositioning).

[13] These negative mentions tend to attract the most attention in the Namibian press because of their rarity.

involvement of Chinese actors in poaching and the illegal wildlife trade. Given the support for conservation in Namibia and its inclusion in the Namibian constitution, SWAPO officials' willingness to criticize Chinese actors in this regard is not particularly surprising.

I identified two prominent themes (with some overlap) in GRN officials' positive portrayals of China: 1) China as a long-term, loyal friend to Namibia and 2) China as an exceptional world power with a unique approach to international affairs. Both themes echo rhetoric used elsewhere on the continent as well as the CPC's own descriptions of its foreign policy (discussed in Chapter 3). I analyze these portrayals, which became more pervasive but remained relatively consistent in content and tone over the period of analysis, in the following paragraphs. Given SWAPO's political dominance, I highlight its rhetoric. I analyze a more recent (post-Husab) trend among SWAPO leaders toward characterizing China as a development model for Namibia in Chapter 6.

China as a Long-Term, Loyal Friend

The most common portrayal of China by SWAPO officials was as a "long-term friend."[14] Although some opposition politicians and civil society actors dispute the relative importance of China's support during Namibia's liberation struggle vis-à-vis other actors (e.g., the USSR), SWAPO rhetoric during the period of study characterized China's support as essential to the success of the liberation struggle. At a 2011 press conference, for example, former Namibian President Hifikepunye Pohamba emphasized that the Namibia-China friendship began with China's military support for SWAPO. "After we used those [sic] equipment," he declared, "we achieved our independence." In a 2012 speech at the Namibian Parliament in honor of the visit

[14] Phrases and words in quotation marks without attribution to specific individuals indicate pervasive phrasing.

of Vice-Chairman of the Standing Committee of the National People's Congress of China Hu Jianmin, Namibian Deputy Parliament Speaker Loide Kasingo made the following statement:

> The Republic of Namibia and the People's Republic of China share a strong tradition of longstanding friendship that dates back to the 1960s. During that period China provided political, moral and material support to the Namibian people under the leadership of SWAPO, to wage the struggle for freedom, self-determination and independence…The Namibian people consider the People's Republic of China as a true and reliable friend that reinforce [sic] the saying 'a friend in need is a friend in deed.'

These statements endow China with "struggle credentials" for its assistance during Namibia's liberation. They also portray China as a friend not only to SWAPO, but also to the Namibian state and the "Namibian people," the three of which are often equated in SWAPO rhetoric.

Portrayals of China as having been on the "right side of history" also help SWAPO leaders justify their support for contemporary Chinese involvements in Namibia, which, as described further in Chapter 6, Namibians do not always view positively. SWAPO leaders have even used references to China's "historical friendship" to challenge foreign and domestic actors' criticisms of the close ties between Namibia and China. At the first China-Africa Young Leaders Forum in May 2011, then-SWAPO Secretary General Pendukeni Iivula-Ithana characterized China as a "super-friend to Africa." She characterized Africa-China friendship as

> bed-rocked in history and…molded by our fore-fathers, who portrayed a forward-looking vision of a better world for all peoples. It is within this wisdom that our friendship would [sic] see many more years to come and defeat the prophets of doom in our country that would want to reverse this noble historical relationship.

While Iivula-Ithana maintained some ambiguity about the identity of these "prophets of doom," former President Pohamba has been more direct. In a 2011 speech targeting Namibian businesspeople who were protesting Chinese businesses, he asked why they did not express concerns about South African businesses, given that "these are the people who oppressed us." "Are they not foreigners like the Chinese?" he asked. He continued,

> Money has become sweet to Namibian businesspeople and, as such, it changed their minds to dislike people that supported them to gain the independence of the country…It is shameful for black Namibian businesspeople to condemn the Chinese who provided us with arms during our liberation struggle. (quoted in *The Namibian* 2011f)

The argument of SWAPO leaders in the analyzed rhetoric was clear: China's friendship to the Namibian people was proven during Namibia's liberation struggle. Given this history, it is more than unacceptable for Namibians to question Chinese involvement; it is *shameful.* As a long-standing partner that supported Namibia in its "hour of need," SWAPO rhetoric portrayed China as both worthy of Namibians' trust and immune to the "short-term" and "profit-driven" criticisms SWAPO politicians have made of other foreign investment sources (see Chapter 5).

Given SWAPO leaders' willingness to challenge domestic critics of Namibia-China relations, it is unsurprising that party leaders have also been willing to challenge foreign critics. In a speech at the 2014 Namibia-China Joint Economic and Trade Commission, Former Minister of Trade and Industry Ngatjizeko argued that

> Strangely, those who consistently at all costs rejected our pleas for independence have now appointed themselves as champions of Africa's economic interests…Unproductive sentiments bordering on xenophobia and outright narrow-mindedness not supported by historical and empirical evidence should not be entertained by Africans as regards our Chinese brothers, who supported us all these years without any counter-demands.

The context of Ngatjizeko's comment made it clear she was referring to the U.S., although she could have similarly criticized the U.K. As described further in Chapter 4, the Cold War geopolitical strategy of the U.S. in southern Africa aligned it with the apartheid South African state. Most infamously, the Kissinger Memorandum identified alliances with ruling white minorities in the region as the best way to counter Soviet influence in the 1970s (Lindeke 2014). The liberation struggle's importance in Namibian politics means that this history is not forgotten. Namibian researchers and political analysts I interviewed almost universally described this rhetoric as one of SWAPO's most-effective tools in promoting Chinese investments in Namibia.

Chinese Exceptionalism

The second most-common theme in SWAPO leaders' portrayals identified China as an exceptional world power. Rhetoric fitting this theme cited China's exceptionalism as lying in 1) its commitment to shared development (e.g., "mutual benefit"), and 2) its historical opposition to imperialism and colonialism (e.g., "south-south solidarity"). Like the portrayals above, depictions of China's exceptionality frequently used Namibia's liberation struggle as evidence.

SWAPO politicians most often identified China's exceptionalism as lying in its "mutual development" approach. The prominence of phrases like "mutual benefit" and "win-win" within this theme indicates the diffusive success of official Chinese government rhetoric. The 2000 Beijing Declaration, for example, identified equality and co-operation as the central features of China-Africa relations and set the goal of establishing "within the framework of South-South co-operation, a new type of long-term and stable relationship based on equality and mutual benefit" (FOCAC 2000). Theo-Ben Gurirab, Speaker of the Namibian National Assembly, echoed this rhetoric following his 2013 meeting with the Chairman of the Standing Committee of the National People's Congress of China. "South-south solidarity, cooperation and mutual support," he declared, "are the defining characteristics of the relationship between Namibia and China."

Augmenting official Chinese discourse, SWAPO leaders also described China as dedicated to "partnership," "respect," and "equality" in its foreign affairs. In his speech at the 2015 FOCAC, current Namibian President Hage Geingob triumphantly announced that "the FOCAC theme of China and Africa Progressing Together in a Win-Win Cooperation for Common Development is highly appropriate and speaks respectfully towards Africa's demand for equal partnership and mutually-beneficial development." Geingob emphasized that China treats Namibia as an equal rather than a subordinate. A GRN official explained the importance of

this point with a family metaphor. Working with China, the official explained, is like working with an older cousin who "although you may feel he is better off, he does not look down on you. He is your comrade and cares for your ideas" (Interview C). The official contrasted this situation with the experience of working with Western powers who "talk to you like you are a child." References to comradeship were common in SWAPO members' portrayals of China and served to distinguish China as a respectful partner that favors collaboration over paternalism.

The second-most common portrayal of China as exceptional drew on the rhetoric of "south-south solidarity" to characterize China's involvement in Namibia as distinct from imperialism, colonialism, and, to a lesser degree, capitalism. Chinese representatives are often at pains to emphasize that China considers itself to be the "world's largest developing country," although this portrayal is not without contestation (see Alden and Large 2011). SWAPO leaders have left China's self-designation as a "developing country" largely unchallenged, choosing instead to emphasize the two countries' shared historical commitment to anti-imperialism. After receiving a courtesy call from the outgoing Chinese Ambassador to Namibia in March 2016, President Geingob characterized the Namibia-China relationship as an "all-weather friendship." "I challenge all other colleagues from the international community to emanate what and how the Chinese friends are showing and helping in many ways," he said. As in Geingob's statement, Namibian officials portrayed Chinese involvement as motivated not by self-interest but instead by a shared commitment to mutually-beneficial solidarity. "Our partnership with China is one built on long lasting and historic solidarity, as well as mutual respect," noted President Geingob in his 2015 FOCAC address. He continued,

> It is therefore offensive when we are lectured by certain nations and warned about the so-called Chinese colonization of Africa. It is ironic that those who warn us are the same nations who sat around the table at the Berlin Conference in 1884 and carved out colonies

> in Africa with the sole intent to develop their countries with our mineral resources and the blood and sweat of our forced labor.

Like the descriptions of many other SWAPO leaders, Geingob's description of the Berlin Conference distinguishes China's geopolitical history from the those of Western countries. His use of the word "lectured" draws a particularly sharp distinction between Western countries and his characterization of China's involvement as based in "mutual respect," "partnership," and "solidarity."

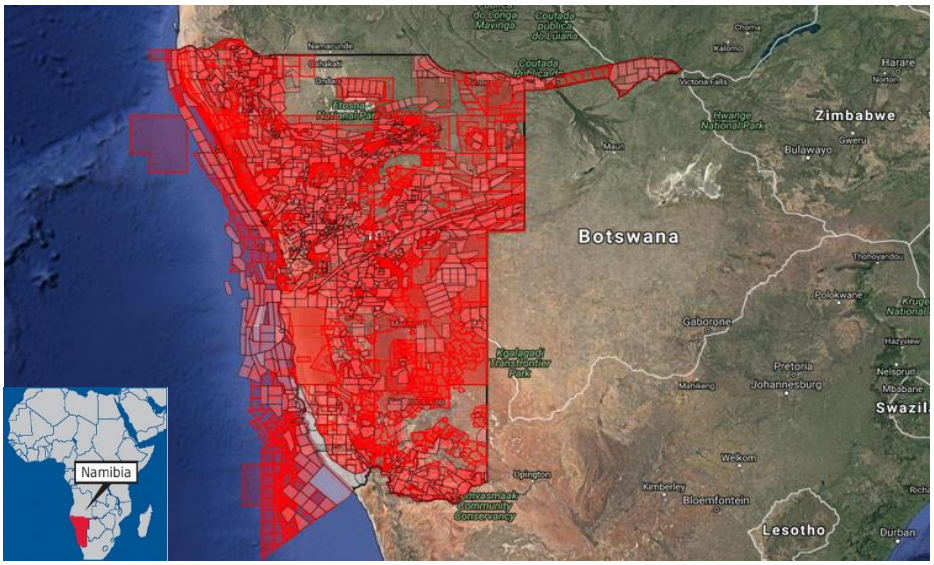
Finally, a smaller portion of SWAPO leaders' portrayals of Chinese exceptionalism framed Chinese involvement as non-capitalist and, implicitly or explicitly, non-exploitative. As above, politicians often contrasted Chinese and Western investment in these portrayals. In a 2011 speech, for example, Namibian Minister of Justice Iivula-Ithana stated that the Namibia-China Business Forum "comes at a time when the forces of capitalism and imperialism are hard at work to discredit the good relationship enjoyed between Africa and China." Statements like Iivula-Ithana's distinguish Chinese involvement from both imperialism *and* capitalism. They also imply that outside actors are scheming to disrupt Namibia's close ties with China, suggesting that such relations are a threat to capitalist processes that some Namibians, particularly within SWAPO's base, view as exploitative. These processes include mining.

Resource Politics in Namibia

Namibia is Africa's fourth-largest exporter of non-fuel minerals, including uranium, diamonds (which are the highest-value by carat in the world and occur off-shore and on-shore), copper, zinc, cobalt, gold, fluorspar, phosphate (marine), pyrite, lithium, and semi-precious stones. The physical dominance of mining in Namibia is clear from Figure 1.4.3, which presents the most recently-available Ministry of Mines and Energy license data. The shades of red on the

map indicate all historical and current mining licenses, including exploration licenses. Shades of blue (primarily off-shore) denote oil and natural gas exploration and drilling licenses. Mining accounts for approximately 60 percent of Namibia's export earnings, 25 percent of government revenue, and 13 percent of GDP (GRN 2017). Beyond its importance to Namibia's economy, resource extraction has played a key role in GRN officials' efforts to develop a post-independence sense of Namibian national identity (discussed further in Chapters 5 and 6).

Figure 1.4.3. Historical and current mining (red) and drilling (blue) licenses in Namibia (Data: MME 2017)



Namibia is both an outlier and an exemplar in the resource curse literature described earlier in this chapter, depending on the element of the curse in question. For example, Namibia displays several economic elements of the resource curse (e.g., inequality, poor economic diversification) but lacks several key political elements (e.g., conflict; discussed below). Its regional context makes its relative political success particularly notable. Compared to many resource-rich African countries, Namibia, like neighboring Botswana, is often considered to be an African "success story" and an exception to the resource curse due to its democratic status and development initiatives (e.g., a pilot basic income grant) that, while modest, distinguish it from

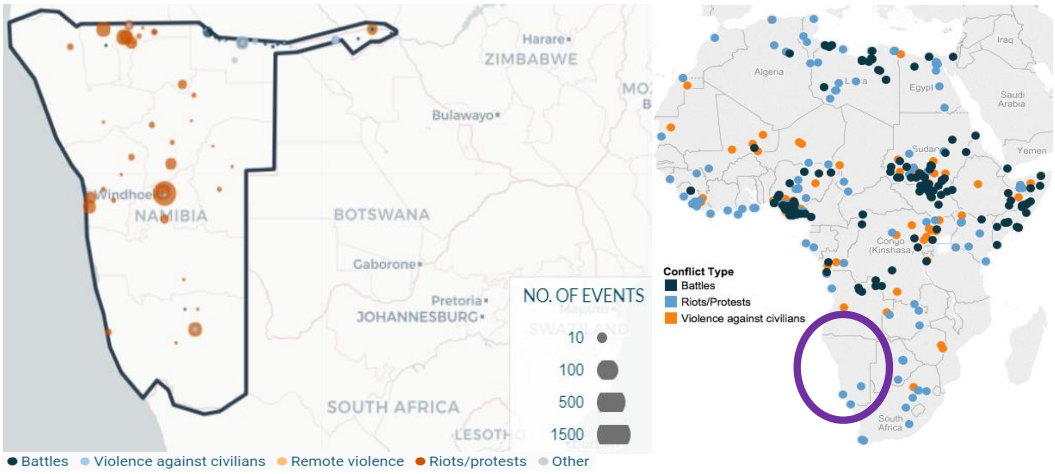
many other African states. In southern Africa, Namibia trails only Botswana in its record of free multi-party elections (Lemos 2007). It is one of only nine sub-Saharan African countries that Freedom House (2017) classifies as "free," and it was ranked fifth out of 54 African countries in the most recent iteration of the Ibrahim Index of African Governance (IIAG) (2017).[15]

Namibia's post-independence political stability is the factor that most distinguishes it from the politics-focused resource curse literature on Africa. This distinction is made more significant by Namibia's possession of several other characteristics that predict conflict (discussed further on the next page). Unlike the post-colonial experiences of many resource-rich African states (e.g., Nigeria, Equatorial Guinea, Sudan, South Sudan, Liberia, Sierra Leone, Ghana, South Africa), Namibia has experienced few episodes of conflict or even protest since its 1990 independence. The map on the left in Figure 1.4.4 shows all violent event data (including riots/protests) recorded in the Armed Conflict Location and Event Data Project (ACLED) database for Namibia between January 1990 and June 2018. The number of violent events peaked in 2000, when 67 events were recorded in northern Namibia in association with the Angolan civil war[16] and the aftermath of the 1999 Caprivi secession attempt. Zero violent events were recorded between 2003 and 2007. Protests have steadily increased since the mid-2000s (see Chapters 5 and 6), peaking at 109 in 2012, but these events have typically been peaceful. The map on the right in Figure 1.4.4, which was also produced by ACLED, shows all resource-related conflict events for Africa between 1997 and 2014. The only events recorded for Namibia during this time were peaceful protests associated with two of Namibia's diamond mines and one zinc mine.

[15] Its sub-rankings were 3rd in safety and rule of law, 3rd in participation and human rights, 7th in sustainable economic opportunity, and 11th in human development.

[16] Namibia's military supported Angola's MPLA against UNITA in the late 1990s and early 2000s.

Figure 1.4.4. *Left,* conflict events in Namibia, January 1990-June 2018 (Data: ACLED 2018); *right,* resource-related conflict events in Africa, 1997-2014 (Map: ACLED 2014)



Namibia's lack of resource-related instability is surprising given its social and resource characteristics, several of which (discussed below) are associated with increased conflict risk. With a population of only 2.5 million, Namibia is the world's second-least densely populated country after Mongolia. This means the GRN has relatively few citizens across which to distribute revenues from its considerable resource wealth — an advantage given that absolute population (Brückner 2010) and population density (see de Soysa 2002 in general; Raleigh and Urdal 2007 on environmental conflict in particular) are associated with increased conflict risk. Namibia's small population also means, however, that Namibians have high expectations for what mining revenues can accomplish. Such expectations have been associated with political instability and protest and even conflict in countries like Mali (Basedau, Rustad, and Must 2018).

Namibia's economic characteristics also align with several elements of the resource curse associated with increased conflict risk. Namibia's resource wealth is most obvious in its GDP per capita, which is the sixth-highest in sub-Saharan Africa at $4,140 (World Bank 2018).[17] High GDP is associated with reduced conflict risk (Collier and Hoeffler 2002). Namibia's GDP,

[17] For comparison, Namibia's GDP per capita is higher than neighboring Angola ($3,111) and Zambia ($1,178) but lower than South Africa ($5,274) and Botswana ($6,788)

however, disguises substantial poverty and inequality, both of which are associated with increased conflict risk (Ross 2001; Rosser 2006). Namibia has the world's second-highest level of income inequality, trailing only South Africa (World Bank 2018). Thirty percent of its population lives below the national poverty line of N$5208 (roughly $380) per month (NSA 2017). It also has high levels of unemployment, another feature associated with both resource-dependent economies (Auty 2001) and conflict risk. Namibia's official unemployment rate is 37.3 percent for the general population and 43.4 percent among youth (ages 15-35) (NSA 2017).

Finally, the characteristics of Namibia's natural resources also make its peace surprising. Diamonds, which account for just under 10 percent of Namibia's GDP (GRN 2017), are Namibia's most valuable resource. Unlike similarly peaceful Botswana, Namibia's diamond deposits are only alluvial. They are scattered across Namibia's beaches, deserts, and seabed. Alluvial diamonds are known as the "guerrilla's best friend" due to their ease of extraction and smuggling for conflict-related purposes in countries like Angola, Liberia, and Sierra Leone (Le Billon 2001; Collier 2004). Namibia's second-most valuable resource, uranium, requires capital-intensive extraction (Le Billon 2001), which is associated with reduced conflict risk, but creates substantial incentives for domestic control, smuggling, and international interference, which are associated with increased conflict risk. Furthermore, both resources occur in minority areas. Namibia's largest ethnic group, the Owambo (~50 percent of the population; see Appendix 3), lives in the north central part of Namibia. As shown in Figure 1.4.1, north-central Namibia, which also functions as SWAPO's political base, has relatively little mining.

The above characteristics certainly do not make Namibia a "typical" case for research on resource politics in Africa. While it exemplifies several economic elements of the resource curse, Namibia belies much of the literature on the political elements of the resource curse, particularly

in the realm of conflict. Namibia's outlier status when it comes to conflict, however, makes it a particularly interesting site for the study of natural resource politics. Rather than trying to understand resource politics from the experiences of the many African countries plagued by conflict, my impetus in studying Namibia is to better understand the "dog that doesn't bark" — the country where we would expect to see resource-related conflict, but we have not. By analyzing resource politics in a relatively peaceful context like Namibia, we can better understand the role of natural resources in peace and stability as well as in conflict.

The usefulness of Namibia's outlier status for better understanding resource politics also applies to its usefulness as a site to study the implications of China's rising influence for African politics more broadly. Most research on the political implications of Chinese investments in Africa, including in natural resource extraction, has focused on already illiberal, authoritarian, and/or autocratic contexts, including Sudan (Large 2008; Carmody and Taylor 2010), South Sudan (Patey 2010 and 2014), Angola (Mohan and Lampert 2013; Ovadia 2013; Chipaike and Bischoff 2018), Chad (Reyna 2007; Carmody 2009), Nigeria (Bukarambe 2002; Anshan 2007; Udeala 2010), Madagascar (Veeck and Diop 2012), and Mozambique (Brautigam and Ekman 2012; Amanor and Chichava 2016). Nearly 25 percent of the world's population is expected to be African by 2050 (World Bank 2018), and, if current politics hold, at least some of those Africans will live in democratic contexts. If we want to better understand how Chinese investment may affect African politics, we need to examine not only contexts in which Chinese investments have been associated with conflict, violence, and other undesirable political outcomes, but also contexts in which, at least so far, they have not obviously been.

Among African democracies, Namibia has several benefits as a case study for analyzing the political implications of rising Chinese influence in mining. The scale of Chinese investments

in Namibia relative to the size of its economy and population means that the political implications of Namibia-China relations, including in the mining sector, can be more precisely identified than would be possible in a complex democracy like South Africa, where Chinese investments are far more significant in absolute than relative terms. The prominence of Chinese investments in Namibia, particularly in the mining sector, also distinguishes Namibia from Botswana, where Chinese investments are increasing but remain modest in absolute and relative terms thanks to Debswana's dominance of its diamond industry. Finally, as described further in Chapter 5, China's largest investments in Namibian mining flow through Chinese government-owned companies (i.e., CGN, CNNC) rather than through private companies. This facilitates a more careful assessment of the role of the Chinese *government* in Namibian political trends.

1.5 Overview of the Dissertation

This dissertation has seven chapters, including this introduction and a conclusion (Chapter 7). Chapter 2 describes my fieldwork and methodological approach as well as the limitations of my data and analysis. In each of the four chapters that follow, I use more specific theoretical material than that presented in this introduction to analyze my empirical data. Given my lack of a singular theoretical framework, these chapters proceed according to my multi-scalar approach. My analysis begins with China's global nuclear energy rise (Chapter 3) and Namibia's role in the broader geopolitics of uranium (Chapter 4). Next, I turn to the national politics of resource extraction in Namibia, focusing on issues of resource sovereignty and the power of the Namibian state (Chapter 5). I conclude the empirical chapters by analyzing the sub-national distributive politics of uranium mining in Namibia (Chapter 6). I provide a more detailed summary of each empirical chapter below.

Chapter 3 provides my rationale for focusing this dissertation on uranium mining. Before turning to Namibia, I analyze the technopolitics of China's pursuit of nuclear energy. I situate the Chinese government's nuclear ambitions in an analysis of the CPC's recent adoption of a new "sociotechnical imaginary" (Jasanoff and Kim 2009) calling for "Ecological Civilization." I also evaluate the broader geopolitical appeal of China's nuclear energy model, including as a model for energy development in Namibia and other African countries.

In the subsequent chapters, I incorporate scholarship on nuclear geopolitics, resource sovereignty, African states, and development studies to evaluate how China's nuclear ambitions are manifesting in Namibia's uranium industry, how Namibians are engaging with Chinese investments, and how those engagements are affecting the distribution of uranium mining-related benefits and costs. In Chapter 4, I situate recent investments by China in a longer history of foreign investments in Namibia's uranium industry. After describing the geological characteristics of Namibian uranium, including their unappealing environmental context and low-grade ores, I argue that China's decision to invest in Namibia's uranium industry is guided primarily by geopolitical rather than geological rationales, including Namibia's political stability and the historical ties between China's CPC and Namibia's SWAPO. This chapter presents the first opportunity to evaluate the implications of Chinese investments in Namibian uranium. I conclude that, were it not for Chinese investments, Namibia's uranium industry would likely be headed for collapse. Instead, Namibia is projected to become the world's second-largest uranium producer (after Kazakhstan) by 2020.

In Chapter 5, I turn to a more specific analysis of Namibia's Husab uranium mine, the Chinese government's single largest investment in Africa, and its implications for resource sovereignty and the power of the Namibian state. Situating the mine in scholarship on resource

sovereignty and the GRN's recent pursuit of resource nationalism, I argue that the GRN is extracting benefits from the mine that extend beyond preventing the collapse of Namibian uranium. Contrary to portrayals of Africans as passive recipients of foreign investment, I explain how the GRN has leveraged Husab to increase the state's role in resource extraction through its Epangelo mining company. I also discuss how Husab's mutual benefits for the Chinese and Namibian governments reflect the rhetoric of "south-south solidarity."

As I describe in Chapter 6, however, Husab's "south-south solidarity" among governing elites is also reinforcing Namibia's SWAPO-led state as the trustee of national development to the detriment of politically-marginalized communities near uranium mines. Drawing on data collected in the communities most affected by intensified uranium mining, I argue that this consolidation of developmental authority in the state reduces opposition and minority groups' abilities to challenge the logics of resource-based development. I also assess how SWAPO leaders are increasingly drawing on their interpretations of the "Chinese development model" to suppress dissent and argue for the prioritization of economic over political rights. These trends are likely to further marginalize Namibia's most-marginalized communities, including those living near and working in its uranium mines.

Combined, these four core chapters explain how the implications of Chinese investments in Namibian uranium are as intertwined with the materiality of nuclear energy (Chapter 3) and uranium geopolitics (Chapter 4) as they are with resource sovereignty (Chapter 5), historical geopolitics (this chapter, Chapter 4), and debates over the meaning — and scale — of mining-led development (Chapter 6). I conclude in Chapter 7 by reviewing my key findings and their broader practical and theoretical implications. I also discuss my plans for future research building on the findings and lingering puzzles of this dissertation.

Chapter 2
Fieldwork, Methods, Data, and Limitations

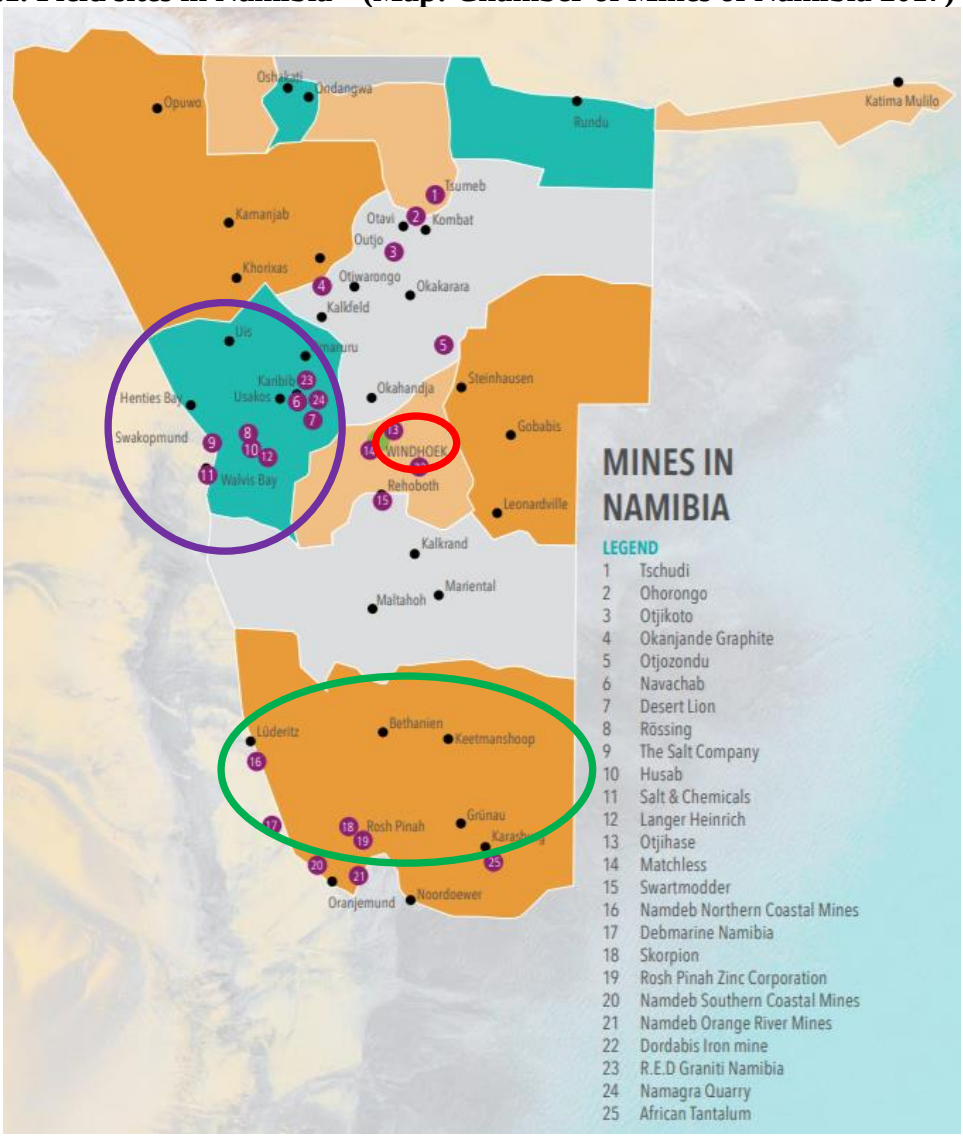
2.1 Introduction

In this chapter, I describe my data collection and the limitations of my analysis. I begin with a description of the locations, timing, and logistics of my fieldwork, including my research sponsors. Next, I describe the methods I used to collect the data analyzed in this dissertation. I also provide specific examples of data types and sources. After describing my data analysis approach and procedures, I discuss my goals for balancing transparency with the privacy and safety of my research participants and how I worked to accomplish them. I conclude with a discussion of the limitations of my research and how my positionality affected my data collection, with implications for my findings and their broader applicability.

2.2 Fieldwork: Locations and Logistics

My research draws on data collected in Namibia between May 2011 and July 2017. My analysis is also informed by briefer periods of research on Africa-China relations and mining politics elsewhere in southern Africa during visa-related absences from Namibia (discussed below). I completed my primary dissertation fieldwork between July 2015 and February 2016. While I have conducted research across Namibia since 2011, my data collection for research presented in this dissertation focused on three regions: Khomas (specifically Windhoek; see purple circle in Figure 2.2.1), Erongo (red circle), and !Karas (also spelled //Karas; green circle). Figure 2.2.1 identifies these three regions in relation to Namibia's 25 active mines.

Figure 2.2.1. Field sites in Namibia[18] (Map: Chamber of Mines of Namibia 2017)



Windhoek is Namibia's capital and largest city as well as the center of commercial, political, and diplomatic activity. Rural Khomas region has three mines, but they are only minor sources of employment for Windhoek residents. Erongo and !Karas are Namibia's two most-significant mining regions. Swakopmund, which functions as the headquarters for Namibia's uranium industry, and Arandis (located southeast of Usakos in Figure 2.2.1), a former Rio Tinto company town close to the Rössing and Husab uranium mines, functioned as my fieldwork bases

[18] The colors on this map signify Namibia's 13 regions.

in Erongo. In !Karas, my fieldwork base was Lüderitz, which is one of the two centers for diamond mining in Namibia[19]. While data collected in Lüderitz informs my analysis of the broader politics of Namibian mining, my focus on uranium means that most of the data analyzed in the following chapters was collected in Windhoek (population 431,000 in 2017[20]), Swakopmund (50,000), Walvis Bay (68,000), and rural Erongo (roughly 20,000). A more detailed map of the Erongo region and its uranium mines is provided in Figure 4.3.1 in Chapter 4.

The University of Namibia (Windhoek) was my formal research sponsor with the exception of my initial visit in 2011. My interactions with the university were largely limited to occasional events, classroom guest lectures, the recruitment of research assistants, and occasional meetings with my faculty research host to discuss Namibian politics and my research design and implementation (e.g., advice for focus groups). In addition to faculty at the University of Namibia, my research also benefitted from conversations with researchers and analysts at the Institute for Public Policy Research (IPPR), an internationally-respected think tank that facilitates the Afrobarometer survey and produces regular analyses of Namibian politics. I met with IPPR staff on several occasions to discuss my research plans and solicit methodological advice. Finally, the U.S. Embassy in Windhoek was the research sponsor for my earliest

[19] Oranjemund is also a hub of diamond mining in Namibia, but it is not open to the public and requires a limited-duration permit from the Namdeb diamond mining company to enter. Although I was briefly detoured there during one of my trips to Lüderitz due to a plane mishap, I was not able to secure permission for a longer visit. Plans are underway, however, to open the town to tourists. This will faciliate future research in the area. The goal of these plans is to provide the community with an alternative source of revenue given projections that almost all Namibian diamond mining will be off-shore (and thus based out of Lüderitz and Walvis Bay) by 2025.

[20]All population figures in this dissertation come from the Namibia Statistics Agency's most recent Population Projections Report (NSA 2017). As in many African countries, population estimates in Namibia's cities are fuzzy due to rapid rural-urban migration. By 2041, 67 percent of Namibia's population is expected to be urban, versus 43 percent in 2011. Most of this growth is expected to occur in the Khomas and Erongo regions, which are expected to host one-third of Namibia's total population by 2041. Windhoek's population increased 26 percent (342,000 to 431,000) between 2011 and 2017 alone. Roughly 17 percent of Namibia's population resides in Windhoek as of 2017.

fieldwork in 2011, but I designed and carried out my initial research without embassy guidance or input. Contacts I made during my time at the U.S. Embassy were, however, valuable in facilitating later interviews with GRN officials, members of the diplomatic community, and representatives of civil society.

Obtaining and managing research visas was a significant logistical hurdle during fieldwork for this project. Given the near impossibility of obtaining a longer-term research permit in Namibia, I conducted my research in the three-month bursts allowed by sponsored research visas. My informants at the Ministry of Home Affairs, contacts in the private visa facilitation industry, and local colleagues recommended this strategy due to political uncertainties in Namibia.[21] During my primary fieldwork in 2015-2016, for example, the University of Namibia did not sponsor research permit applications due to policy uncertainty. While my use of research visas entailed significant lost time to travel and meant I could never spend longer than three months in a research site at a time, this approach also had several advantages. It made me efficient in my data collection and provided regular time away to transcribe data, reflect on the information gained, and identify problematic gaps. My research leaves also helped me develop a broader regional perspective on mining and Chinese investment. I spent time during required absences from Namibia in several cities in southern Africa with connections to mining, including Johannesburg, Cape Town, and Kimberley, among others. Among other activities, I used my regional travel to attend the 2015 Forum on China-Africa Cooperation in Johannesburg, events associated with the #FeesMustFall protests in South Africa, and several regional and national mining conferences.

[21] In 2013, Namibia's Cabinet passed new provisions to the Research Act requiring that researchers gain pre-approval for research participants (e.g., interviewees, focus group participants, ethnographic informants). Research permits have rarely been awarded in recent years due to uncertainty about the Research Act's implementation.

2.3 Methods

I used a multi-method approach to data collection (Baerwald 2010; Elwood 2010). While externally-collected survey data[22] inform my analysis and my own survey data will facilitate follow-up research to the findings presented in this dissertation,[23] the data in subsequent chapters were primarily obtained through qualitative methods. One advantage of this approach was that I did not have to identify topics, themes, or patters preemptively (e.g., identifying the primary implications of uranium mining for inclusion as survey response options). This flexibility was an asset given the lack of research on mining politics and Chinese investment in Namibia and the policy changes implemented by the GRN during my research. When the research developed in ways I did not anticipate at the outset, I was able to adapt my data collection accordingly.

My methods included interviews (n=83); focus groups (groups = 15; participants = 118); participant observation and field observation (~45 events plus daily fieldnotes recording conversations with Namibians and my personal observations and experiences); textual analysis (~800 texts); and archival research on Namibia's history, mining policies, mining licenses, and mine ownership. Examples of non-focus group and interview data sources are provided in Table 2.3.1 on the following pages. Appendices 1 and 2 provide details on the characteristics of my focus group participants as well as the characteristics of interviewees cited in this dissertation.

[22] I analyze Afrobarometer survey data when relevant (e.g., Namibians' perceptions of China's influence).

[23] Due to changes in Namibia's mining policies that were not anticipated at the time of my research proposal, I delayed conducting an independent survey in Namibia. In lieu of a survey, I incorporated focus groups to create a broader pool of informants than was possible with interviews and participant observation alone.

Table 2.3.1. Data types, sample sources, and examples

Data Type	Sample Sources (Not Exhaustive)	Examples (Not Exhaustive)
Formal GRN Legislation, Policies, and Reports	• **Archives[24]:** Geological Survey of Namibia, Ministry of Mines and Energy, National Library of Namibia, University of Namibia Library • **Web:** Epangelo, Ministry of Mines and Energy, Ministry of Environment and Tourism, Ministry of Poverty Eradication and Social Welfare, Ministry of Trade and Industry, Namdeb, Parliament of Namibia, Office of the President of Namibia	• Epangelo Charter • Minerals (Prospecting and Mining Act) of 1992 • Minerals Development Fund Act of 1996 • "The Minerals Policy of Namibia" 2003 Report • Vision 2030 National Development Plan • Strategic Minerals Policy of 2011
Statements by GRN Officials and Political Leaders	• **Media:** Reporting of quotes from GRN official speeches and statements in *The Namibian*, *New Era*, and other media[25] • **Web:** Epangelo, Ministry of Foreign Affairs, Ministry of Mines and Energy, Ministry of Trade and Industry, Office of the President, SWAPO, Cities of Windhoek, Lüderitz, Swakopmund, and Walvis Bay	• Official announcements and press releases related to resource extraction and China (e.g., announcement of construction start at Husab Mine, diplomatic announcement recognizing the Chinese New Year) • Statements by GRN officials • SWAPO and opposition party statements/positions
State-Owned Media	• Namibia Broadcasting Corporation (radio and TV) • *The New Era* (daily newspaper)	• Notes from ~110 hours of NBC news broadcasting • Articles related to China, natural resource extraction, uranium mining, etc. • Social media postings by media sources
Private Media	• One Africa Television (TV) • *The Namibian* (daily newspaper) • *Windhoek Observer* (weekly newspaper) • *Namibia Economist* (online-only newspaper) • *Insight Namibia Magazine* (public affairs magazine)	• Editorials, letters to the editor, columns, and SMSes related to resource extraction, the state, development, and/or foreign investment, among other topics • Articles related to natural resources, the state, development, and/or foreign investment • Social media postings by media sources

[24] Archival access was often necessary for non-major reports, policies, and statements released prior to 2007, when the GRN began to release new policies and official statements on government websites.

[25] I cross-checked media-reported quotations with official text whenever available. When an official source was not available, I have cited accordingly.

Civil Society and Private Sector Reports, Documents, and Press Releases	• **Civil Society:** Institute for Public Policy Research, Labour Resource Research Institute, Legal Assistance Center, Namibian Chamber of Commerce and Industry (national organization plus local branches) • **Private Sector:** De Beers, Paladin, Rio Tinto, Swakop Uranium, Weatherly International • **Mining Industry Interest Groups:** Chamber of Mines of Namibia, Mineworkers Union of Namibia, Namibian Uranium Association	• IPPR report on "Transparency in Namibia's Extractive Industries" • "Annual Reviews" (2008-2017) and sporadic newsletters (2008-2017) of the Chamber of Mines of Namibia • Labor Resource and Research Institute report on "Labour Practices in the Mining Industry" • Annual reports of mining companies • Legal Assistance Center report on "Environmental Justice and Mining"
Participant Observation	• Attendance at and participation in events and activities related to the research topics, including public meetings, conferences, political events (e.g., protests, campaign rallies), and events organized by civil society groups • Visits to mining, foreign investment, and development-related sites as part of public delegations (e.g., media delegations) • Participation in social media groups (e.g., Twitter, Facebook, WhatsApp)	• Public meetings on proposed and existing mining projects near Windhoek, Lüderitz, and Swakopmund • Chamber of Mines of Namibia annual conferences • Forum on China-Africa Cooperation (South Africa) • Political events (e.g., SWAPO rallies) • Facebook and Twitter conversations (e.g., "Swakopmund Matters" environmental group)
Field Observation	• Visits to museums • Visits to mines and mining sites • Visits to headquarters of mining-related entities • Flyover of the Sperrgebiet restricted mining area and day-trip into the area with permitting organization • Field photography • Billboards and advertisements • Attendance at national holidays, celebrations, and parades • Informal conversations • Other everyday observations and experiences	• Notes and photography from visits to institutions (e.g., Geological Survey Museum of Namibia, Lüderitz History Museum) • Notes from visits to institutional headquarters (e.g., Epangelo, the Chamber of Mines) • Notes and photography from visits to former and current mining sites • Photography of resource-related advertisements, sites, and signage (e.g., a Rössing Uranium sign with the slogan "working for Namibia"; warnings about entering mining areas; advertisements for Namibia featuring its resource wealth) • Notes from casual conversations

Interviews and Focus Groups

Interviews (described first) and focus groups (described second) were my primary methods for collecting information on Chinese investments in Namibian uranium and data on Namibians' perceptions and experiences of uranium mining, development, and Chinese investments. I initially planned to focus my interviews only on representatives of local government, industry, and civil society and key local informants (Cochcrane 1998). Due to changes and uncertainty in Namibian mining policy that delayed my survey though, I also used focus groups and, to a lesser degree, interviews to collect data on ordinary Namibians' perceptions. This strategy sacrificed breath for depth, which affected the representativeness of my data (see Section 2.5), but it also provided me with "rich descriptions" that helped me to better understand the complexity of Namibians' experiences and opinions (Denzin and Lincoln 2003, 6).

My interviews were semi-structured except for high-profile officials, who typically requested a formal set of interview questions in advance. I also conducted informal interviews as part of my day-to-day activities, but I classify those interviews as field observation data (see Table 2.3.1) due to the lack of a systematic approach. Semi-structured interviews best balanced my need for efficiency (e.g., ensuring that interviews remained on topic) with my desire to avoid closing off potentially-fruitful divergences from already-identified patterns and topics. Interview participants included local, regional, and national government officials; members of the diplomatic community; representatives of civil society, political groups, NGOs, tourism, mining, conservation, the media, and other industries; and ordinary Namibians (see Appendix 1 for examples). Interviews lasted from ten minutes to two-and-a-half hours. Interviews over one hour typically involved some sort of activity (e.g., a tour of a mine). I invited almost all interviewees

to select the interview location for their comfort. The only exceptions to this approach related to safety issues (see Section 2.6). Most of my interviews occurred in secondary locations (e.g., cafes), public places (e.g., parks), or interviewees' homes or places of work.

Topics for interviews, as well as for focus groups, included Namibian politics, foreign affairs, China and other countries (for comparison) with investments in Namibia, mining, perceptions of particular natural resources, development, identity, nationalism, the environment, poverty, and inequality. As my research progressed and my understanding of the research topics improved, my interview questions became more targeted. I typically built up to potentially-sensitive topics (e.g., the problems of mining, concerns with the GRN and SWAPO, corruption) to reduce the risk of making participants uncomfortable or committing a social faux pas. This strategy was essential given Namibia's small social circles; an off-hand comment that offended a well-connected informant could undermine my ability to conduct other interviews. Unless participants had severe time limitations (e.g., government officials, who were typically more comfortable with my research topics anyway), I began interviews with small talk. Once I turned the conversation to research, I was strategic about what I asked when, particularly when interviewing respondents to whom I was a relative stranger. I typically worked from broad to narrow topics (e.g., the Namibian economy, then mining, then uranium mining, then the Husab mine). When participants appeared uncomfortable, I either changed the topic until they regained comfort or used a "talking around" strategy (e.g., asking about SWAPO without specifically mentioning SWAPO). In several cases, I scheduled multiple interviews with the same individual to build rapport. This strategy was particularly valuable in gaining the trust of informants who were reluctant to talk to me, most notably Chinese government representatives, some informants working for mining companies, and some residents of rural communities.

Generally, however, I found that Namibians were comfortable sharing their opinions on political matters. Namibians' relative ease in discussing politics is likely thanks to the priority that independent Namibian society places on freedom of speech and the press (see Beukes 2007 and Wasserman 2010). Having experienced political violence and repressed free speech under the occupation of South Africa's apartheid regime, I found that most Namibians tend to value the opportunity to speak their mind, albeit politely. During a not-atypical informal conversation at a township gathering place, for example, three fishermen passionately shared with me their disappointment with SWAPO and their sense that the GRN was not fulfilling its responsibilities ("in the least!" shouted one, unabashedly). Namibians tended to be even more candid in one-on-one conversations than in my day-to-day interactions, with the exception of my interactions with Namibia's notoriously-candid kombi (shared taxi) drivers.

Toward the end of my fieldwork, however, I did notice that Namibians I was meeting for the first time appeared to be more guarded with their political opinions than had been my experience in the past. This trend coincided with several recent authoritarian shifts within SWAPO (discussed further in Chapter 6). The latest edition of the nationally-representative Afrobarometer survey (forthcoming) supports this impression. Table 2.3.2 shows the results to a question on political freedom in the two most recent iterations of Afrobarometer in Namibia. The difference in Namibians' perceptions of their ability to speak freely about politics is notable, particularly in the 12 percent increase in the percentage of respondents indicating they "always" have to be careful about what they say. Because these trends emerged toward the end of my fieldwork, when my research connections were already well-developed, I do not think they significantly affected my findings. If this trend continues, however, it may present new challenges to myself and other researchers in future projects.

Table 2.3.2. Results: In your opinion, how often, in this country: Do people have to be careful of what they say about politics? (Source: Afrobarometer 2014; forthcoming)

	2014 (%)	2017 (%)	Change (%)
Never	32	25	-7
Rarely	28	23	-5
Often	18	15	-3
Always	22	34	+12
Don't Know	1	2	+1
Refused	Not offered	0	

I recorded my interviews using a tape recorder, handwritten notes during interviews, and/or post-interview notes, depending on participants' preferences. Handwritten notes were the most common recording method. Most high-profile interviewees (e.g., GRN officials, industry representatives) who used talking points consented to having their interviews fully recorded. Even in these cases though, I regularly reminded interviewees that parts of the interview could be "off-the-record" if they desired. Several participants accepted this offer. Some ordinary Namibians also consented to having their interviews recorded either in full or in part, following the protocols identified by the University of Colorado-Boulder Institutional Review Board (IRB). I do not directly quote from any interviews that were limited to post-interview notes in this dissertation, although I do paraphrase comments from such interviews in a few places.

I used focus groups less as a means of collecting specific information (e.g., data on government policy) and more as a means of better understanding how groups of Namibians discussed and interpreted political topics, such as China's influence, the ownership of a particular mine, or the intensification of uranium mining. While I analyzed the opinions of individual participants as expressed during focus groups and on the questionnaires that accompanied them, I was most interested in how Namibians engaged with each other on the research topics (e.g., which evidence a participant cited to convince another participant of their

view). My decision to approach focus groups in this way was based on my practical experience in Namibia, advice from other researchers working in southern Africa, and the recommendations of focus group methodologists (Kitzinger 1994a; Montell 1999; Hollander 2004).

My experience conducting my first two focus groups led me to conduct subsequent focus groups among aligned participants. In my first two "test" focus groups at the University of Namibia and in Lüderitz, I used an open call for participants posted in a public location. Following Megoran (2005), I also incorporated visual prompts (e.g., a sign proclaiming "diamonds for progress") to elicit discussion. Admittedly, these first two groups were not particularly successful. They functioned more like a "group interview," in which I was clearly leading the conversation (Crang 2002), than a conversation foregrounding participants' interactions (Bosco and Herman 2010). After reviewing the literature on focus groups as a site for the observation of the collective production of meaning (Kitzinger 1994b; Lunt and Livingstone 1996; Montell 1999; Hollander 2004), I conducted subsequent focus groups among previously-aligned or "naturally-occurring" groups (see Appendix 2). These focus groups were much more successful. They were driven by the participants' interactions and relied far less on my interventions than did groups in which the members had no prior relationships. This finding reflects the experiences of Lunt and Livingstone (1996), Wilkinson (1998), and Longhurst (2010), among others.

Aligned groups also seemed to encourage dissent. Namibian culture tends to be polite, and the initial open-call focus groups reflected this. It was difficult to get the participants to speak directly to other participants rather than to me, let alone to disagree with one another. the aligned groups, however, were characterized by regular (albeit usually polite) disagreement. I suspect this was because participants knew that they shared something in common with other

group members (e.g., their status as an unemployed youth or a former uranium mine employee). This may have helped participants feel like they were among peers; there wasn't a risk, for example, that a particular group combined a mining company leader with a professional environmental activist.

Participant evaluations supported my evaluation of the success of aligned focus groups in this research. Seventy-six percent of participants who filled out combination closed and open-response post-focus group evaluations (n=114; four refusals) indicated that the aligned groups either "somewhat" or "mostly" reflected conversations that they might normally have at their workplaces or group meetings. By contrast, 58 percent of participants in my initial two groups (n=12; one refusal) indicated that the non-aligned focus group "rarely" reflected conversations in which they would otherwise participate. These evaluations reflect the findings of Gamson (1992) and Sasson (1995) regarding the usefulness of focus groups of aligned participants in studies of political perceptions and behavior in which group affiliations play a significant role, as is the case in this research. The literature on focus groups, however, also indicates that the success of aligned groups does not always hold for other contexts. Namibia may simply be a particularly good place for aligned-participant focus groups on political issues. My experience demonstrates the benefits of trialing more than one focus group style before committing to one approach.

Each focus group typically lasted around 90 minutes, after which participants completed a questionnaire with roughly 20-25 closed and open-response questions.[26] These questions centered on demographic information (e.g., birthplace, employment), but I also included some research-related questions to collect additional information on the participants' opinions and to test potential survey questions. I've included responses to a few of those questions in this

[26] The number of questions varied because I incorporated some group-specific questions (e.g., more specific questions on mining experience for participants in mining-related focus groups).

dissertation, although it is important to note that they are representative only of my focus group participants. While I conducted most interviews without the assistance of a research assistant, at least one research assistant was always present at focus groups to assist with organization and to provide a second set of notes. I recorded all focus groups with an audio recorder. Discussion topics reflected the interview topics mentioned above, although focus group conversations tended to be more wide-ranging than interviews due to their collaborative nature. I provided light snacks and drinks for all participants prior to beginning the session to increase participant comfort and to allow time for late arrivals. As I hosted all focus groups in public centers that were at times distant from some participants' homes (particularly in the case of employment-based groups, like conservation), I also provided participants with locally-appropriate compensation for costs associated with their participation (e.g., travel, childcare).

Participant and Field Observation

Participant and field observation helped me to better understand Namibians' everyday experiences with the research topics (Watson and Till 2010). They also helped me to better understand higher-level discourses related to China and mining (e.g., via attendance at government forums and events like the Forum on China-Africa Cooperation; see Figure 2.3.2), industry practices (e.g., via attendance at mining conferences and visits to mines; see Figure 2.3.1), and political behavior (e.g., via attendance at protests). I recorded my observations, conversations, and experiences in my fieldnotes on at least a nightly basis but typically much more frequently. In the case of public events, I also requested, and was typically granted, permission to record the full proceedings and/or to gain access to presentations. Events where I conducted participant observation included labor forums and meetings; meetings of local, regional, and national government (e.g., city council meetings, Parliament debates); meetings,

forums, and conferences organized by industry, the media, and civil society actors; parades and festivals; and political activities (e.g., campaign events, protests), among other activities. Examples of specific events are provided in Table 2.3.1.

Figure 2.3.1. Scenes from fieldwork: *Left,* Company-led tour at Rössing uranium mine, *author at far left*; *right,* checkpoint stop during visit to the Sperrgebiet mining area

Figure 2.3.2. Scenes from participant observation, *clockwise from top*: FOCAC media events in Johannesburg, *author at center*; crowd at a GRN poverty conference in Windhoek; crowd at the China-Africa Development Models Seminar in Windhoek

I found participant observation at public forums, such as those required by Namibia's environmental laws, to be particularly valuable. One of the advantages of participant observation is that it provides opportunities to observe discussions that organically involve the research topics without steering by the researcher. These events were often quite contentious, and they provided insights that I could further investigate through interviews and focus groups. For example, I attended two contentious GRN-led public meetings on marine phosphate exploration in the summer of 2014. At one, the meeting's "script" appeared to be designed to assuage concerns about phosphate mining's potential impacts on the local fishing industry. To the visible frustration of the mid-level GRN representatives leading the discussion, however, attendees also raised concerns about corruption, the GRN's transparency in relation to minerals licensing, and the short-sightedness of mining-led development. These insights provided fodder for subsequent focus groups and interviews during my 2015-2016 fieldwork.

My "just show up" approach to events for government and industry representatives was also useful in better understanding national mining and foreign investment politics and policy development. Participating in these events, which fit Nader's (1972) "studying up" model (see also Markowitz 2001; Ortner 2010; Peck and Theodore 2012; Garner and Scott 2013), helped me identify key discourses used by industry, the GRN, media, foreign governments, and civil society and better understand how those discourses gained influence. These experiences also facilitated my access to high-level research informants and gave me an opportunity to observe "off-the-cuff" interactions (e.g., the candid comments by the Minister of Mines and Energy described in Chapter 5). I always attempted to receive a research or media pass to attend government-related events that weren't explicitly open to the public. Occasionally, however, when this approach failed and the event struck me as publicly-oriented (e.g., a poverty-related conference that was

advertised in Namibian newspapers for several days), I simply showed up and requested registration. These events often put me in the same room with high-level officials in a way that otherwise would not have been possible, including, for example, crossing paths with President Hage Geingob at the 2015 National Conference on Wealth Redistribution and Poverty Eradication. My attendance was often unquestioned by those running the on-site registration table. My gender, nationality, and race likely had much to do with this outcome, as I discuss later in this chapter.

In addition to events, I also collected data through more everyday experiences, including casual conversations; the observation of advertisements, billboards, and other signage (see Chapters 5 and 6 for examples); observations about the day-to-day experiences of Namibians; visits to public sites, including museums, mining-related attractions, and monuments; and observations about living in mining-based and mining-proximate localities. I include casual conversations with Namibians under this category due to their informality, although they fall somewhere between interviews and participant observation (Kusenbach 2003). During one of my nine-hour trips to Lüderitz from Windhoek by shared kombi, for example, the driver remarked on the construction of a new road by a Chinese company. A wide-ranging conversation about the relationships between Chinese investors and GRN officials, including in the mining area we were passing through, ensued. These occurrences provided me with opportunities to observe agreements/disagreements and inter-personal dynamics as they organically arose in conversation, including among the diverse individuals involved in nearly all kombi trips in Namibia. Given the prominence of mining, China, and development in Namibian popular discourse, it was a rare day when I did not take notes on an informal encounter or experience related to my research.

Finally, I also visited potentially-relevant museums and institutions, including the Namibian Uranium Association, the National Museum of Namibia, the National Earth Science Museum at the Ministry of Mines and Energy, and local history and mining museums among others. For example, my visit to the new Independence Memorial Museum in Windhoek, which features a particularly-vivid history of Namibia's independence struggle (see Figure 2.3.3) and was funded by the North Korean government, was useful for understanding the continued relevance of Namibia's liberation struggle to contemporary politics and foreign affairs and taking notes on the language and imagery used to describe particular actors (e.g., SWAPO, China).

Figure 2.3.3. Exterior and interior of the Independence Memorial Museum in Windhoek (Photos: Author 2015)

Textual Analysis (Including Policies, Media, and Archival Data)

I supplemented the above methods with textual analysis and archival research to improve my understanding of Namibian policy and media discourses related to China, mining, and development. As an added benefit, I could access many of these resources outside of Namibia, including prior to my primary fieldwork. This enabled me to prioritize interviews, focus groups, and participant observation while in-country.

The texts I analyzed (see Table 2.3.1) included GRN policies, laws, and press releases; reports by government, mining industry stakeholders, and civil society groups; speeches by Namibian political leaders; and media (including SMSes[27] published in *The Namibian*). I also collected data from social media groups, profiles, and pages associated with my research sites, prominent public figures, and research topics (e.g., Namibia's Affirmative Repositioning youth movement, the Chamber of Mines of Namibia). I collected data on Namibian foreign investment and mining practices and licenses from GRN regulations and legislation, court rulings, local and national government-produced reports, archival records, and relevant speeches by Namibian politicians. My sources included visits to GRN offices and archives as well as online databases maintained by the Ministry of Mines and Energy, the Ministry of Environment and Tourism, the Office of the President of the Republic of Namibia, the Geological Survey of Namibia, the Chamber of Mines of Namibia, and the Parliament of the Republic of Namibia, among others.[28]

Namibia's well-regarded and digitally-available newspapers and news magazines, particularly *The Namibian* independent newspaper, the state-owned *New Era* newspaper, and the independent *Insight Namibia Magazine*, were my primary sources of media data. I included all major Namibian newspapers in my media database for content analysis, but I also relied on the above sources for credible information (*The Namibian* and *Insight Namibia*) and GRN rhetoric (*New Era*). Namibia has a diverse array of media outlets given its small population. While social

[27] *The Namibian* publishes a page of SMSes (text messages) from readers every weekday (30-40 per day). While many SMSes are banal, such as complaints about poor road conditions or rowdy neighbors, others function as informal letters to the editor and/or engage with recently-published articles. As the SMSes are generally anonymous, it is not possible to trace them to an individual or location unless that information is included by the author.

[28] Thanks to the tremendous efforts made by the Geological Survey of Namibia (GSN) to digitize data over the past five years, I was able to supplement in-person archival research on mining licenses with online research. While the purpose of this online data is to ensure that potential investors in mining have sufficient information (Interview D with GSN employee), it is quickly becoming an outstanding resource for researchers. While much mining data remains difficult to access in Namibia, GSN data is far more accessible than in many African countries.

media use and television viewership are rising rapidly, newspapers remain the most-used media outlet (see Afrobarometer 2014; forthcoming). A higher percentage of Namibians read newspapers regularly than do citizens of any other sub-Saharan African country except for South Africa, and the newspaper penetration rate is 86 percent (Nielson Polling 2012).

In addition to being influential and accessible, Namibia's media outlets largely operate without GRN interference, save for the occasional criticism from a politician.[29] Namibia has been a press freedom vanguard since its 1990 independence. The most-recent Press Freedom Index produced by Reporters without Borders (2017) ranked it 24th in the world for press freedom, a decline from its 17th place rankings in 2016 and 2017. Namibia ranks the highest in sub-Saharan Africa, edging out Ghana (23rd), Cabo Verde (27th), and South Africa (31st). For comparison, the report ranked France 39th, the U.K. 40th, and the U.S. 43rd. Freedom House rated Namibia's media freedom a bit lower, classifying its press as "partly free" in 2017 but reporting no major interference with the free circulation of the news.

I collected information from text-based media sources using keyword searches (e.g., China, resource, development, uranium, mine, nation) of the relevant digital media archives. Excluding information collected for historical or policy purposes, I concentrated my data collection on January 2008 (six months prior to the registration of the state-owned Epangelo Mining Company) through July 2017. I also watched Namibia's nightly news on a near-daily basis and monitored keywords on social media (e.g., "NamTwitter," as it is called, and several local and issue-oriented Facebook groups). My monitoring of public social media groups (e.g., the "Industrial Swakopmund?? What Future Do We Want!" public group on Facebook) provided insights into how particular groups framed themselves (Harris 2001) and their relationships to

[29] Even state-owned media outlets like the *New Era* have been known to print opinion pieces critical of the GRN.

Namibian politics. I continued to use Google Alerts, Namibian social media, and Namibian newspapers to follow developments between and after periods of fieldwork.

2.4 Transcription and Analysis

As English is widely spoken in Namibia and is the only official language, I conducted and transcribed all interviews and focus groups myself except for six interviews conducted in Khoekhoe (a Nama dialect) and Afrikaans. A Namibian research assistant employed part-time as a translator and fluent in all three languages transcribed those interviews into English for me. For efficiency, I completed most transcription during research leaves from Namibia. Knowing that my interviews and focus groups would be transcribed later, I took copious notes following each interview and focus group to help me remember details (e.g., body language, participants' vocal characteristics). Depending on participants' comfort, I also took notes during all focus groups and most interviews. At least one research assistant (depending on who assisted with the focus group) checked all focus group transcripts for accuracy. My research assistants also recorded their own fieldnotes for all interviews and focus groups at which they were present. I compared these notes with my own for verification.

I organized and analyzed all transcripts, fieldnotes, and texts using Dedoose, a software package designed for mixed-methods research. Using Dedoose's tagging system, I coded all data for content (e.g., keywords like uranium), explicit (e.g., nation, development) and implicit (e.g., conceptions of progress, rightful ownership, and responsibility) themes, and contextual information (e.g., location, surroundings, participant information). While I began with a list of anticipated codes based on my pilot fieldwork, previous textual analysis, and literature review, I took an iterative approach to coding (Ely et al. 1991; Fereday and Muir-Chochrane 2006; Bowen

2009; Cresswell 2009; Cope 2010). This included regularly returning to previously-coded data to re-code it for themes and terms arising later in the research.

My goal in analyzing the data was to better understand how and why particular understandings of mining, development, and Chinese investment have come to be the most prominent in Namibia and how differently-positioned actors perceive of and engage with those topics. Dominant discourses can make particular understandings of the world seem like "common sense" (Gramsci 2000, 330; for an example, see SWAPO's use of China as a development model in Chapter 6). In addition to conveying social power, such discourses can authorize it. By framing the world in particular ways, powerful actors (e.g., Namibian political elites) can justify current understandings and practices (e.g., what constitutes development; see Chapter 6) as obvious rather than as historically, geographically, and even individually-specific knowledges. In analyzing the data and presenting my findings, I attempted to balance my attention to dominant understandings of my research topics with attention to the ways in which those understandings are challenged and re-interpreted in both obvious (e.g., graffiti underneath a sign advertising the Husab mine) and less obvious ways (e.g., body language after a GRN officials' comment at a public forum).

2.5 Transparency and Confidentiality

In presenting data in the duration of this dissertation, I aim to balance the need for research transparency with the ethnical imperative to protect the privacy of my informants. I share "messy" details, for example, whenever doing so does not threaten participants' privacy and provides insights into the context of collected quotes and information (Baxter and Eyles 1997; Moravcsik 2010). These details include information that may have affected the interaction or my interpretation of it, such as the informant's demeanor and behavioral cues, the surrounding

environment, and other social or environmental factors (e.g., the atmosphere at an event, the timing of a presentation).

I also include direct quotations from interviews and focus groups whenever possible to make my inferences more transparent. I use letters and letter-number combinations (e.g., Interview A, Focus group participant 1A) for participants for both direct quotations and paraphrased material with two exceptions: 1) when information was shared in a public forum by someone with a public role (e.g., a GRN official's presentation at a mining conference) or 2) when the informant specifically requested that their words be associated with their name. In the latter case, all individuals signed a "confidentiality declined" statement. In the former case, I do not include names or personal details from public events unless the individual in question at the time served in a role that was obviously public-facing. For example, I cite off-the-cuff statements by the GRN's Minister of Mines and Energy in Chapter 5, but I do not name or provide personal information on the source of audience questions. For other informants, I provide general information on the characteristics of interviewees and focus group participants cited directly in this dissertation in Appendices 1 and 2, but I limit this information based on informants' requests and my best judgement. Revealing a female participant's gender, for example, does not typically undermine privacy in the gender-balanced tourism industry, but the same is not true in Namibia's overwhelmingly-male mining industry.

Given the sensitive nature of political research and recent challenges to political freedom in Namibia, I have erred on the side of withholding information that could threaten the privacy of a research participant. In deciding whether to exclude particular details, I followed best practices in qualitative research (Van den Hoonaard 2003), including reflecting on how social and political dynamics may change between data collection, analysis, and publication. A statement that

seemed fine to associate with an individual upon its recording in 2014, for example, may now threaten that individuals' privacy. I also reflected on whether a participant may have shared information with me that they would likely not have shared with a different researcher. I describe how I negotiated these issues with respect to my own positionality below.

2.6 Positionality and Limitations

I want to conclude by discussing some of the limitations of this research and the ways in which my positionality likely affected my findings. I return to these topics again throughout the dissertation to provide interpretive context for particular findings, but it is useful to provide an overview here.

Because my interviews, focus groups, and day-to-day interactions primarily occurred in only three of Namibia's thirteen regions and my research design did not incorporate randomized sampling, my findings are not representative of Namibians' opinions on or experiences of my research topics at national or local scales. In national terms, as I discuss in Chapter 6, the sample of Namibians included in my focus groups and interviews was biased toward those with at least modest awareness and/or experience of the mining industry. Except for my research in Windhoek, research participants who did not work in the mining industry or know others who did still lived in communities where mining was prominent. Locally, rather than seeking representative data, my data collections targeted individuals, groups, events, and texts with connections to mining and/or Chinese investment. Namibians employed or previously employed in the mining industry, for example, were over-represented in my focus groups and interviews, as were members of ethnic minority groups (see Chapter 6). This strategy was useful for understanding the implications of Chinese investments in mining from the perspectives of those

living closet to those investments, including miners themselves. It also means, however, that my results cannot be used to generalize about Namibians' views at local or national scales.

Likewise, the data I collected on Namibians' perceptions of China are shaped by my research focus on uranium mining and the association between China and mining in the communities where I conducted my research. This association does not necessarily exist in communities distant from mining sites, where perceptions of China may be more tightly connected to Chinese traders, for example (see Dobler 2007 on northern Namibia). Discussing Namibians' perceptions of China in broader terms requires the use of externally-collected representative data, such as the Afrobarometer survey (see Chapter 6).

Beyond Namibians' perceptions, my research is also largely silent on Chinese perspectives. Due to the difficulty of gaining access to Chinese informants in Namibia (a prominent problem in research on China in Namibia and elsewhere, even among Mandarin speakers; see, for example, Brautigam 2009; Corkin 2013), my insights into Chinese perspectives on the research topics stem primarily from public statements by Chinese officials and a small number of successful interviews with Chinese government and mining industry representatives (typically after repeat meetings or on the sidelines of conferences). This is a significant silence in my research. I hope that other scholars with better connections to the Chinese community in Namibia will be able to provide stronger insights into the Chinese side of Namibia-China relations in the future.

Finally, my data collection was limited by the difficulties of collecting information on sensitive aspects of mining and Chinese investment in Namibia (e.g., the specific terms of Chinese loans). Namibia, for example, has no right to freedom of information, and Chinese investment is a particularly contentious topic in domestic politics. While this constraint was less

limiting in the context of Namibia than it likely would have been in many other African states with more authoritarian political regimes, it limited my ability to collect data on certain topics and/or led to me rely on information gleaned from interviews rather than on official government sources.

To improve my data collection, I complemented locally-based data collection with national textual analysis (including SMSes in *the Namibian*, which are submitted from across the country) and available nationally-representative survey data. This strategy was useful in triangulating my findings and evaluating how the patterns in my data reflected or diverged from broader patterns and trends identified in other research. Triangulation, however, does not change the non-representative nature of my data. Media analysis, for example, is far from representative of Namibians' opinions. While I incorporate Afrobarometer data as appropriate to provide insights into how my findings differ from national patterns, Afrobarometer survey questions are relevant to only a few of my research topics. Afrobarometer is also only nationally representative. I have not been able to locate any relevant, locally-representative data for the areas where I conducted my research. I hope to improve this situation in my future work, but it limits the representativeness of my inferences in this dissertation.

Because this dissertation focuses on uranium mining in Erongo, it is important to note that my research assistants and their social networks were particularly influential in shaping my data collection in rural Erongo, on which much of the analysis in Chapter 6 is based. Due to its remoteness and lack of accommodation possibilities, my visits to rural Erongo communities had to be efficient. I had far fewer day-to-day interaction opportunities with residents to complement my interviews and focus groups. I also had fewer opportunities to independently identify potential focus group and interview participants than was the case in my other research sites. As

a result, the pre-existing connections of my research assistants drove my data collection. The small size of these communities and the novelty of a foreign visitor facilitated casual conversations, but even these interactions were shaped by my ties to my research assistants. Given the small social circles of "small-town Namibia," people often already knew who I was and what I was doing in town before I said a word.[30] This undoubtedly affected my findings in ways that are difficult to understand without extended ethnographic study of the social networks of these communities and the positionality of my research assistants in them.

In the case of my day-to-day interactions, I attempted to at least modestly address the danger that I was becoming "the intellectual prisoner of a particular section of local opinion" by varying my activities to engage a broader population than I met through focus groups, interviews, and participant observation (Pratt and Loizos 1992, 88). These efforts included varying my day-to-day activities (e.g., where I shopped for food, where I ate, where I hailed a kombi for transport) to increase the diversity of my interactions, attending events and seeking out meetings and interviews with groups and individuals with whom I did not have pre-existing connections or experience, and comparing the demographic and geographic[31] profiles of my interview and focus group participants with the best-available local demographic data to recognize and address problematic gaps in data collection. As above, however, these attempts do not solve the problem of unrepresentative data. They primarily served to enhance my awareness of the limitations of my work and to encourage me to seek out dissenting opinions.

Finally, in addition to issues of research design, my positionality as a researcher also affected where, from whom, and with whom I could collect data. This was particularly true

[30] I was commonly greeted along the lines of "You are the one working with [assistant]!" for example.

[31] This included where the participant lived, worked, and originally hailed from.

regarding my gender. Namibia has a conservative, traditional, and patriarchal society (see LaFont 2010 for details). Due to social norms and Namibia's high rates of violent crime (particularly gender-based violence), some contexts were largely off limits to me for reasons of safety or social norms. In larger cities, for example, it was often unsafe for me to pursue opportunities that required traveling alone at night (particularly on foot, but also via kombi in Windhoek, Johannesburg, and Walvis Bay). This affected my research minimally in summers, when days were long, but my research days in these locations often ended around 6pm in the winter. I also had to leave an event, venue, or public place that I had otherwise deemed safe early on multiple occasions due to harassment issues. These situations were not limited to social gatherings; they included professional conferences, government and corporate offices, and, for several weeks in 2015, seemingly all SWAPO-related events in Windhoek — events at which I could have otherwise perhaps collected meaningful data.

Due to my own prior experience, I also never traveled to Windhoek's informal settlements or some neighborhoods of former townships during this research without a friend or research contact accompanying me. Due to these constraints, I was less likely to have casual conversations or experiences with Namibians living in informal settlements. Residents of informal settlements and former townships were over-represented in my focus groups by design, but such structured interactions were qualitatively different from more casual day-to-day interactions with Namibians. Unless I could bring along at least one friend, I also avoided establishments and events where heavy drinking was likely due to social norms and safety concerns. In each of the above cases, even when I could attend the event, visit the place, or participate in the conversation, the presence of a friend or colleague may have affected the subsequent conversation or experience in meaningful ways.

Beyond affecting where I could go, my gender and other characteristics also affected my interactions with Namibians in contexts ranging from interviews with government officials to conversations at the grocery store. While these effects were often disadvantageous (as described above) they could also be advantageous at times. I suspect, for example, that my gender helped me avoid significant surveillance challenges. My gender may have also encouraged some informants to be less hesitant to share insights with me than they might have been with a male researcher. Simply put, I often was not taken seriously for gender and age-related reasons. My conversations with male researchers in Namibia lead me to suspect that many informants were unusually candid with me. While I always identified myself as a researcher, I suspect that some of my informants were more likely to consent to having their insights inform my research than might have otherwise been the case. Given this situation, I have erred even further on the side of caution in sharing potentially-identifying information in this dissertation. An informant's failure to take me seriously does not mean that my research may not have implications for them.

I regularly negotiated and re-negotiated the gender-sensitive balance between approachability and distance, striving to be friendly enough to enhance the comfort of research participants while seeking to reduce the risk that participants and others would misinterpret my approachability. The benefits of my perceived approachability were perhaps most evident when I was "studying up." Because most professions in Namibia are male-dominated, I was frequently one of only a few women at professional events. This was especially true at mining-related events. At such events, as in day-to-day life, others regularly initiated conversations with me. This was a source of frustration when I was pressed for time and/or my interlocutor was not interested in a research conversation. It also, however, introduced me to informants whom I might have had difficulty meeting through formal interview request directed to, for example, a

government ministry or a political group. Thanks to the small circles that characterize Namibian social life, such conversations occasionally facilitated significant research opportunities. This was particularly true with mining industry, GRN, and SWAPO party leaders.

My race, nationality, educational status, and even heritage also affected my research process and outcomes (Kobayashi 1994; Billo and Hiemstra 2013). Given my Dutch surname, I was regularly mistaken for an Afrikaner. Afrikaans-speaking individuals who saw my name badge before they heard me speak sometimes addressed me in Afrikaans, and some of my informants told me that I passed for a Namibian or South African in situations where I only listened.[32] My American nationality could be a detriment at times, as some Namibians are quite suspicious of Americans. More often, however, my nationality was an asset, particularly in discussions of politically-sensitive topics. As one of my local hosts pointed out, my status as a foreigner likely helped me build trust with some informants, as they may have considered me to be "separate" from Namibia's racial politics and history.

Race also affected my research in other ways. Regardless of nationality, whites (~6 percent of the population[33]) remain in a privileged position in post-apartheid Namibian society. Due to the persistence of apartheid-based spatial divisions, for example, many Namibians expressed significant interest in my visits to non-white communities and initiated conversations with me accordingly. Like my experience at professional events, this situation facilitated conversations with Namibians who might have otherwise been hesitant to speak with me. I also suspect that my "just show up" approach to high-profile events in Namibia was successful largely because my race, combined with my educational status and nationality, led others to

[32] I was also mistaken for a German national on multiple occasions. There are far more Germans than Americans in Namibia thanks to German colonialism.

[33] See Appendix 3 for a breakdown of Namibia's ethnic composition.

believe I "belonged." This also applied to some of my interactions with white populations in Namibia. Private mining companies in Namibia, for example, tend to be led by white Namibians or white foreigners. My research with these groups would surely have been more difficult were it not for my racial privilege.

2.7 Conclusion

The analysis in the following chapters draws on a multi-method approach focused on three areas in Namibia: Windhoek (the capital), Erongo (uranium region), and !Karas (diamond region). Because I have focused this dissertation specifically on uranium mining, I draw the most heavily from my research in Erongo. My methods included interviews, focus groups, textual analysis, archival research, participant observation, and field observation. I complemented these methods with externally-collected data, including the nationally-representative Afrobarometer survey, as was relevant to the research topics. My findings reflect limitations related to my research design (e.g., non-representative data collection) and were influenced by my positionality (e.g., gender, race, nationality). My decision to focus my interviews, focus groups, and other data collection on mining-associated communities and individuals, however, also enabled me to better understand the implications of Chinese investments in uranium for some of the communities and individuals most directly-affected by those investments.

Chapter 3
Ecological Civilization and the Technopolitics of China's Nuclear Energy Rise

> This concept [Ecological Civilization] reflects an important change in the Party's understanding of development. Rather than emphasizing economic construction as the core of development as it did in the past, the Party authorities have come to recognize that development, if sustainable, must entail a list of elements including the right relationship between man and nature.
>
> -*China Daily* (official CPC outlet)
> October 24, 2007

> Nuclear is like the 'adult table' [but for international relations] …We have seen now how China rightly claimed its place there [as a nuclear power]. I think perhaps the time is here for Namibia to follow the lead of China.
>
> - SWAPO Party Youth League Leader
> Interview E

3.1 Introduction

Since 1945, nuclear energy has had a high profile in popular media, foreign policy, and scholarship. Its significance for geopolitics, international security, and safety and environmental hazards, among other issues, is evidenced by the proliferation of "nuclear studies."[34] A hybrid of nature's potential and humanity's transformation of that potential, nuclear energy challenges distinctions between the material and social, the human and geological, and the political and technological. Marcuse (1964) referred to it as both "living on the brink" (xli) and "perhaps the most singular achievement of advanced industrial society" (xliv). Intertwined with the paradoxes of twenty-first century modernity (Adam 1998), nuclear energy simultaneously symbolizes the possibility of human-deployed mass destruction and the promise of endless energy. Similarly, its arrival marked both an historic rupture and a continuation of power relations that preceded it.

[34] Examples include the Project on Managing the Atom at Harvard University, the Nuclear Security and Risk Center Stanford University, and the Nuclear Studies Institute at American University.

Nuclear energy's development is also intertwined with environmental change. The 1945 "Trinity test" in New Mexico, for example, has been proposed as the start of the Anthropocene by 26 out of 38 members of the International Anthropocene Working Group (Zalasiewicz et al, 2015). In justifying their selection, the members argued that the global diffusion of artificial radioactivity from nuclear weapons testing can be easily measured (versus the "natural" radiation associated with uranium mining; see Chapter 4).[35] Yet, it was not naturally-occurring uranium-235, but rather the human-initiated conversion of uranium-238 into plutonium-239 that facilitated both the Trinity test and the atomic bomb dropped on Nagasaki. Uranium-238 cannot sustain a chain reaction. Plutonium-239 can. The Hiroshima bomb's destructive capacity, meanwhile, was made possible through the human enrichment of uranium-235 to an 80 percent concentration, well above its 0.7 percent concentration in uranium. Nuclear energy intertwines nature and society.

Climate change is the primary factor driving nuclear energy development today, but the influence of historical power relations in shaping contemporary nuclear geopolitics persists. In 2001, *The Economist* described nuclear energy as offering "large quantities of baseload electricity that is cleaner than coal, more secure than gas and more reliable than wind." It is beyond the scope of this chapter to evaluate the strengths and weaknesses of nuclear energy versus other energy sources. Instead, my interest lies in how and why China is increasing its use of nuclear energy and how and why this strategy may have broader geopolitical implications, including in Namibia and other African countries. Nuclear energy cannot be separated from the power relations, contexts, and processes that characterize its production, governance, and use. In *Being Nuclear*, Hecht (2012) argues that colonial relationships — from the use of Congolese

[35] Another definition traces the Anthropocene to the European industrial revolution (Crutzen and Stoermer 2000).

uranium in the Hiroshima bomb to the appropriation of First Nation lands for uranium mining — were essential to the technological and geopolitical "nuclear age" successes of Western powers through the early 2000s. China's contemporary nuclear energy rise is similarly grounded in uranium extraction in Namibia and the power relations that make such extraction possible.

This chapter situates my case study of Chinese investments in Namibia's uranium sector (Chapters 4-6) in the context of China's nuclear energy rise. I engage with STS scholarship by Hecht (2012), Mitchell (2011), and Jasanoff and Kim (2009) and draw inspiration from the work of geographers who combine STS with environmental geopolitics (e.g., Dalby 1998; Dalby 2014; O'Lear 2018) to analyze the technopolitics of nuclear energy in China and its geopolitical implications.[36] I begin by evaluating China's "Ecological Civilization"[37] as a geopolitical "sociotechnical imaginary" (Jasanoff and Kim 2009) for which nuclear energy is a key tool. After describing how the geography of nuclear power has shifted in recent years, I describe China's nuclear energy development and its relationship to the Communist Party of China's (CPC) political legitimacy. Next, I analyze China's technopolitical incentives in pursuing nuclear energy in the context of its rising geopolitical and geo-economic influence. I conclude by evaluating the potential broader appeal of China's nuclear energy model, focusing on Africa.

3.2 Geopolitics of Ecological Civilization

China's rapid economic growth over the past several decades has been accompanied by growing international and domestic concerns with its environmental pollution and contributions to climate change. Beijing has become a particularly potent symbol of China's environmental

[36] Following Hecht (1998, 15), I use "technopolitics" to refer to the "strategic practice of designing or using technology to constitute, embody, or enact political goals" as well as the interplay between technology and politics (i.e., how politics influence technology but also vice versa; see also Latour 2013).

[37] Thank you to Andrew Grant for calling my attention to the use of this term.

degradation. During the city's January 2013 "airpocalypse," for example, hazardous particles reached concentrations over forty times higher than the World Health Organization's safety maximum (Albert and Xu 2016). A year later in 2014, its air quality was classified as "unhealthy" or worse on 200 days (Xie et al. 2015). China's environmental degradation has become a stain on its geopolitical reputation at the very moment that its proverbial global stock is rising. Its regional neighbors, particularly Japan and South Korea, have expressed concerns with local acid rain and smog associated with Chinese pollution (Ryall and Yoo 2013), and recent evidence suggests that pollution from China is reaching the western U.S. (Lin et al. 2014).

Farther afield, China's environmental degradation has also attracted attention in Africa, where some politicians have begun to question China's suitability as a model for economic growth on environmental grounds. At the 2015 Forum on China-Africa Cooperation (FOCAC) in Johannesburg, I observed that the leaders of the 43 African governments in attendance went above and beyond in praising China's development "success story" with one exception: its environmental management. A lower-ranking South African government delegate[38] I spoke to on the event's sidelines told me that their[39] government would "take China's success in pulling its people out of poverty in the beat of a heart" but "here in Africa, we must value our environment more so than they have done." A Zambian journalist indicated that many Zambians share similar sentiments. "While we in Zambia want growth, we need growth," they said, "we must breathe the air." A Namibian official told me that their government appreciates Chinese investments but "at times, we are concerned about its own commitment to the values that guide our country."[40]

[38] I do not cite specific interview information in Appendix 1 for the quotes in this paragraph because I consider them to be part of my participant observation data collection rather than formal interviews.

[39] I use plural pronouns throughout this dissertation when revealing gender could threaten an informant's privacy.

[40] Environmental protection is included in Namibia's constitution.

Even the pre-FOCAC event sponsored by the World Wildlife Fund's China office, which was ostensibly focused on poaching and wildlife protection, centered on whether the Chinese government was taking adequate steps to address its environmental degradation and reduce its contributions to climate change.

China's new pursuit of "Ecological Civilization,"[41] while perhaps not initially designed for the purposes of geopolitical public relations, may work to counter these interpretations of China as an environmental example of "what not to do." Ecological Civilization gained rhetorical prominence in the mid-2000s to describe the CPC's desire to simultaneously pursue economic growth and environmental sustainability (Eriksen 2016). At the time, environmental concerns were attracting rising domestic attention. Ecological Civilization became an official CPC policy objective in a 2007 report of the 17th National Congress of the Communist Party of China, which was guided by then-Vice Minister of the Environmental Protection Administration Pan Yue (Jin 2008; Gare 2012). The term has roots, however, in earlier campaigns for socialist civilization (Schmitt 2016) and ecological agriculture (Marinelli forthcoming), as well former President Hu Jintao's use of the phrase "scientific outlook on development" to refer to a harmonious society grounded in science-based, sustainable development (Pow 2018; Hansen and Liu forthcoming). The subsequent adoption of Ecological Civilization into the CPC Constitution in 2012 during the 18th National Congress elevated protecting the environment, for the first time under the CPC, nearly to the level of priority accorded to economic development and social stability (Gare 2012; Hansen and Liu forthcoming). Today, CPC leaders frame Ecological Civilization as the next stage in the CPC's pursuit of broad-based development on behalf of the Chinese nation: first, agricultural, then industrial, now ecological.

[41] The idea of "ecological civilization" in China may be modified from usage of "ecological culture" in the Soviet Union circa 1984 (Gare 2012).

Ecological Civilization also appears to be a priority of Chinese President Xi Jinping. In 2013, President Xi's administration endorsed Ecological Civilization to signify a joining of the goals of harmonious society, socialism, development, welfare, and a sustainable approach to the management of environmental resources (Hansen and Liu forthcoming). President Xi's association with the concept, according to CPC rhetoric, dates to 2005, when, during a visit to Anjiyu village in Zhejiang, he realized his "scientific thesis" that "green hills and clear waters are gold and silver mountains" (*People's Daily* 2015*).* This insight, according to the CPC, lies at the foundation of China's current ambition to "constantly enrich the dialectical relationship between developing the economy and protecting ecology" (*People's Daily* 2015).

Momentum appears to be growing. By 2015, twelve departments had contributed to the Ecological Civilization initiative, directed by the influential Central Committee's Central Leading Group on Financial and Economic Affairs (Chun 2015). Two days after China's National People's Congress passed a constitutional amendment abolishing presidential term limits and thus consolidating President Xi Jinping's leadership, the CPC announced it would create new "superagencies" to tackle three key threats to its political support: imprudent fiscal management, corruption, and environmental pollution[42] (Buckley and Bradsher 2018). The "superagencies" plan includes creating two enlarged ministries for natural resource management and environmental protection (Duodu 2017; Wong 2017). President Xi's October 2017 address to the National Congress, however, may have been Ecological Civilization's watershed moment. Although he reinforced the CPC's long-held commitment to economic development, he devoted significant time to the need to complement China's economic growth — both realized and

[42] These priorities line up well with Chinese public opinion as surveyed by Pew Research Center (2015).

promised — with environmental stewardship as part of a new model of socialist modernization. Xi (2017) noted,

> an ecological civilization is vital to sustain the Chinese nation's development…We should have a strong commitment to socialist ecological civilization and work to develop a new model of modernization with humans developing in harmony with nature.[43]

Xi's advocacy of Ecological Civilization also appears to be gaining traction beyond the realm of high-level speeches. Hansen and Liu (forthcoming) report that the concept (although sometimes under the guise of different terms) is being used for environmental organizing purposes in rural China. Pow (2018) reports that it is gaining ground in among local urban planning officials, including in the development of eco-cities.

A relatively recent topic of academic inquiry, the above-described domestic implications of Ecological Civilization (e.g., the CPC's promotion of particular behaviors by Chinese citizens; see Jin 2008; Tiejun et al. 2012; Wang, He, and Fan 2014; Pow 2018; Hansen and Liu forthcoming) have received far more attention than its potential geopolitical implications. I agree with Agnew (2012) that understanding the implications of China's rising global influence requires analyzing the geopolitical narratives that have emerged from China in the past and will presumably underlie its future foreign policy priorities. We also must be careful, however, not to become so enthralled with China's historical geopolitical narratives that we miss the creation of new ones. While its usage may shift as the CPC and Xi refine it in the coming years, Ecological Civilization could become a new developmental or "geopolitical paradigm" (O'Loughlin[44] 1999, 36) for China in a world in which the environment and geopolitics are increasingly intertwined.

[43] Quotes from Chinese leaders in this chapter reflect the translations provided by the CPC on its website.

[44] Focusing on debates in U.S. geopolitical thought after the Cold War, O'Loughlin (1999, 36) defines a geopolitical paradigm as a "general world perspective that is molded by the relative importance and variety of American domestic interests vis-à-vis with the state of international relations and the international political economy."

Pan Yue, for example, is an early advocate of Ecological Civilization who has argued for China to become a global environmental leader. China, Yue (2006) argues, should lead a global transition from "Western industrialization civilization" to "eco-industrial civilization." Xi has also promoted Ecological Civilization in his recent diplomatic efforts, particularly after the departure of the U.S. from the Paris Accord. In 2017, he highlighted China's international leadership by declaring,

> Taking a driving seat in international cooperation to respond to climate change, China has become an important participant, contributor, and torchbearer for ecological civilization…The Communist Party of China strives for both the wellbeing of the Chinese people and human progress. To make new and greater contributions for mankind is our Party's abiding mission. (Xi 2017)

Reflecting the language described in Chapter 1 with regard to Namibia's SWAPO leaders, President Xi framed these efforts as a natural extension of the CPC's historical emphasis on south-south solidarity, mutual benefit, and win-win partnerships.

President Xi has not been alone in drawing attention to Ecological Civilization's roots in the CPC's self-proclaimed historical commitment to global solidarity and equality. In 2006, Pan Yue highlighted disconnects between that solidarity and Western approaches by arguing,

> China's circumstances, in particular the imbalance between its population, resources and environment, meant that traditional western industrial civilization is not an option. China is a socialist country and cannot engage in environmental colonialism, nor act as a hegemony, so it must move towards a new type of civilization…A significant number of people see a scientific view of development as simply a change in the mode of economic growth, even believing that establishing a resource-saving and environmentally-friendly society is merely a matter of technology. But that is only one aspect. The scientific view of development seeks a comprehensive and sustainable change of politics, economics, culture and theory — a transformation of civilization…We cannot export our pollution as developed countries can.[45] We must resolutely work towards a new style of industrialization, whatever the price…Our socialist political theory contains within it the core concept of eco-industrial civilization —social justice. We are already working tirelessly to make the construction of a socialist environmental culture and ecological civilization our duty and mission. (Yue 2006)

[45] This sentiment contradicts with the realities, if not the rhetoric, of Chinese investments in Namibian uranium. I return to this point in Chapter 4.

Ecological Civilization is framed here as transcending environmental policy to represent a new kind of global "civilizing mission." Yue's statement also indicates how Ecological Civilization is intertwined with CPC discourse on south-south solidarity, mutual benefit, and equality. A 2007 commentary on Ecological Civilization in *China Daily*, the CPC's media outlet, similarly noted that "social justice and fairness must be of great concern in development. We cannot expect to maintain ecological balance in a political sense unless we can make sure that disadvantaged social groups can fairly enjoy the benefits of development."

Ecological Civilization can be interpreted as a global version of "sociotechnical imaginaries," which Jasanoff and Kim (2009, 120) define as,

> collectively imagined forms of social life and social order reflected in the design and fulfillment of nation-specific scientific and/or technological projects. Imaginaries, in this sense, at once describe attainable futures and prescribe futures that states believe ought to be attained…Such visions, and the policies built upon them, have the power to influence technological design, channel public expenditures, and justify the inclusion or exclusion of citizens with respect to the benefits of technological progress.

Ecological Civilization shares this future-orientation. According to *China Daily*, it

> [i]s not a term the Party has coined just to fill a theoretical vacancy in its socialism with Chinese characteristics, but rather a future-oriented guiding principle based on the perception of the extremely high price we have paid for our economic miracle. This concept reflects an important change in the Party's understanding of development. Rather than emphasizing economic construction as the core of development as it did in the past, the Party authorities have come to recognize that development, if sustainable, must entail a list of elements including the right relationship between man and nature…the construction of ecological civilization was absolutely not rhetoric for chest thumping by officials in their speeches. It needs to be transformed into tangible measures that will change the way our economy develops. (*China Daily* 2007)

Far from limited to the national scale though (as is Jasanoff and Kim's focus), China's pursuit of Ecological Civilization has multi-scalar external implications, particularly in the realm of nuclear energy. As I detail in the rest of this dissertation, the inclusionary and exclusionary effects of

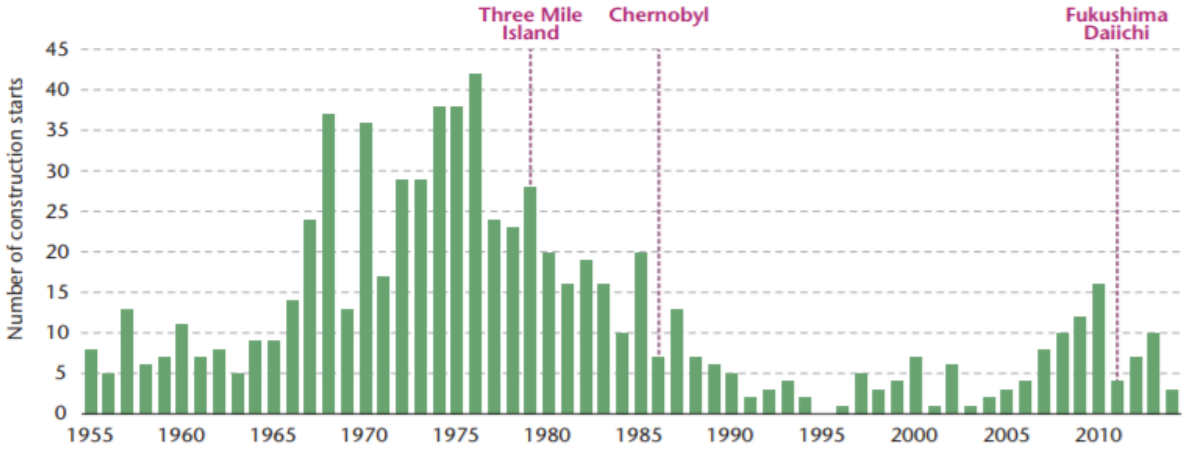
China's nuclear energy ambitions extend well beyond its borders. For the purposes of this chapter though, I turn now to the shifting geographies of nuclear energy, focusing on China.

3.3 Changing Geographies of Nuclear Energy

Between 1945 and 1956, scientific research on nuclear energy shifted from a focus on weapons development to electricity generation. The "energy of the future," nuclear power was promised by Lewis Strauss, then head of the U.S. Atomic Energy Commission, to bring about "energy too cheap to meter" as well as benefits ranging from cures for disease to advances in crop yields (Hecht 1998; 2012). By the 1980s though, the partial meltdown at Three Mile Island and the Chernobyl disaster had combined with increasing construction and regulatory costs and declining fossil-fuel prices to reduce interest in the so-called "atomic miracle." In 2001, *The Economist* argued that, far from "too cheap to meter," nuclear energy would likely be remembered as "too costly to matter."

Nuclear energy enjoyed a commercial renaissance in the mid-2000s thanks to rising concerns about climate change and energy security. Whereas chemist Frederick Soddy had idealized nuclear energy as humanity's opportunity to "transform a desert continent, thaw the frozen poles, and make the world one smiling Garden of Eden" in 1908 (cited in Mian and Glaser 2006, 4), its advocates in the new millennium proposed it for the opposite effect: keeping those frozen poles frozen. Nuclear power's return to prominence was cut short, however, by the March 2011 Fukushima disaster. In 2012, *The Economist* (2012b) again described it in pessimistic terms, this time as "the dream that failed." Figure 3.3.1 shows the association between major disasters and accidents in the industry and annual reactor construction starts.

Figure 3.3.1. Nuclear reactor construction starts, 1955-2014 (Chart: IEA 2015)



Today, nuclear energy is growing again, but with a new geography. While Fukushima led to nuclear energy rollbacks in Western Europe and the U.S., it did not have same effect on non-OECD countries, particularly China (Clery 2005; Bradsher 2011; IEA 2011). In its post-Fukushima analysis of the nuclear industry, the Economist Intelligence Unit concluded that

> [m]uch of the nuclear skepticism that other [non-OECD] governments have signaled does not represent an erosion of enthusiasm for atomic power. Rather, it has more to do with showing tact in front of a jittery public.[46] This is, crucially, the case in the world's keenest builder of nuclear plants: China. (Economist Intelligence Unit 2011, 1)

Driven by rising living standards, broadened industrialization, and the environmental and climate challenges associated with both, more nuclear power plants began operations in 2015 than in any year since 1990 (IEA 2015; see Figure 3.3.2). All but one of those plants were in non-OECD countries, with China accounting for 63 percent of newly-operating reactors and Russia accounting for 13 percent (calculated using IEA data). Table 3.3.1 lists reactors currently under construction by country. The mere 7 (of 56) reactors located in OECD countries appear in red.

[46] The report noted that Beijing experienced a spike in sales of iodine, which is used to ward off radiation, immediately after Fukushima (EIU 2011, 11). This is confirmed by Guo and Ren (2017).

Figure 3.3.2. Nuclear reactor startups and shutdowns, 1954-2017 (Chart: IAEA 2018a)

Table 3.3.1. Under-construction nuclear reactors (Data: WNA 2018a)

Country (#)	Production Estimate	Utility/Operator	Reactor Name	Megawatts (MWe)[47]
Argentina (2)	2019	National Atomic Energy Commission	Carem 25	27
	2021	Nucleoeléctrica Argentina	Atucha 3	800
Bangladesh (1)	2023	Bangladesh Atomic Energy	Rooppur 1	1200
Belarus (2)	2019	Belarusian Nuclear Power (BNPP)	Ostrovets 1	1194
	2020	BNPP	Ostrovets 2	1194
Brazil (1)	2023	Electronuclear	Angra 3	1405
China (19)	2018	China General Nuclear Power Corp (CGN)	Taishan 1	1750
	2018	CGN	Yangjiang 5	1087
	2018	China Huaneng	Shidaowan	210
	2018	China National Nuclear Corp (CNNC)	Sanmen 1	1250
	2018	CNNC	Sanmen 2	1250
	2018	State Power Investment Corp (SPI)	Haiyang 1	1250
	2019	CGN	Fangchengan 3	1150
	2019	CGN	Hongyanhe 5	1080
	2019	CGN	Yangjiang 6	1087
	2019	CGN	Taishan 2	1750
	2019	CNNC	Fuqing 5	1161
	2019	CNNC	Tianwan 4	1060
	2019	SPI	Haiyang 2	1250
	2020	CGN	Fangchengan 4	1150
	2020	CGN	Hongyanhe 6	1080
	2020	CNNC	Fuqing 6	1161
	2020	CNNC	Tianwan 5	1080
	2021	CNNC	Tianwan 6	1080
	2023	CNNC	Xiapu 1	600

[47] 1 gigawatt (GW) = 1,000 megawatts (MW). 1 MW = 1,000 kilowatts = 1,000,000 watts.

Finland (1)	2019	Teollisuuden Voima Oyj	Olkilouto 3	1720
France (1)	2019	Électricité de France	Flamanville 3	1750
India (6)	2018	Bhavini	Kalpakkam	500
	2022	Nuclear Power Corp of India Ltd (NPCIL)	Kakrapar 3	700
	2022	NPCIL	Kakrapar 4	700
	2022	NPCIL	Rajasthan 7	700
	2022	NPCIL	Rajasthan 8	700
	2025	NPCIL	Kudankulam	1050
Japan (2)	2024	J-Power	Ohma 1	1383
	TBD	Chugoku Electric Power	Shimane 3	1373
Pakistan (2)	2021	Nuclear Power Project (NUPP)	Karachi 2	1161
	2022	NUPP	Karachi 3	1161
Russia (5)	2018	Rosenergoatom	Leningrad II-1	1170
	2018	Rosenergoatom	Rostov 4	1100
	2019	Rosenergoatom	Novovoronezh II	1200
	2019	Rosenergoatom	Pevek FNPP	70
	2020	Rosenergoatom	Leningrad II-2	1170
Slovakia (2)	2018	Slovak Electric (SE)	Mochovce 3	471
	2019	SE	Mochovce 4	471
South Korea (4)	2018	Korea Hydro & Nuclear Power (KHNP)	Shin-Hanul 1	1400
	2018	KHNP	Shin-Kori 4	1400
	2019	KHNP	Shin-Hanul 2	1400
	2021	KHNP	Shin-Kori 5	1400
Taiwan (2)	TBD	Taiwan Power Co.	Lungmen 1	1300
	TBD	Taiwan Power Co.	Lungmen 2	1300
UAE (4)	2018	Emirates Nuclear Energy Corporation (ENEC)	Barakah 1	1400
	2018	ENEC	Barakah 2	1400
	2019	ENEC	Barakah 3	1400
	2020	ENEC	Barakah 4	1400
U.S (2)	2021	Southern Nuclear	Vogtle 3	1250
	2023	Southern Nuclear	Vogtle 4	1250
Total: 56				

3.4 Nuclear Energy in China

As recently as 2010, *Foreign Affairs* published an article calling attention to China's "forgotten" nuclear capabilities, which the article's authors blamed on Americans' "lingering bipolar mindset" (Roberts, Montaperto, and Manning 2010, 53). Today, those capabilities are impossible to ignore. In 2012, the CPC adopted nuclear energy targets of 60 GWe in added capacity by 2020 and 150 GWe (110 reactors) by 2030 (versus 31 GWe of capacity in 2016). If these targets are achieved, 10 percent of China's electricity will come from nuclear energy in

2030, versus 1.1 percent in 2011 (WNA 2018d). Long-term plans are even more ambitious, calling for 400-500 GWe of total capacity by 2050 (WNA 2017a).

Progress is underway to meet these goals. China is the fastest-growing generator of nuclear energy. Between 2000 and 2017, China increased its number of operating reactors more than ten-fold (Gil 2017). Table 3.4.1 shows the 10 countries with the greatest nuclear capacity in 2010. China's capacity is expected to increase by 527 percent by 2020, versus 50 percent in second-place South Korea. Of the 56 reactors under construction[48] worldwide (see Table 3.4.2), 19 (34 percent) are in China (WNA 2018a). That equals the number of under-construction reactors in the next four highest-ranked countries combined (India 6, Russia 5, South Korea 4, and UAE 4). Given the speed of construction in China compared to the U.S., China will likely rival or surpass the U.S. as the world's largest nuclear energy producer by 2030. Despite having zero operating nuclear plants until 1991,[49] China is fourth in installed nuclear capacity. While its 38 operating reactors are dwarfed by the 99 in the U.S., China already has more reactors than Russia (36) and is catching up to Japan (42) and France (58).

Table 3.4.1. Projected change in net nuclear capacity (gw), 2010-2020 (Table: Economist Intelligence Unit 2011)

	Net nuclear capacity, gw			Change in capacity, 2020 v 2010	
	2010	2015	2020	%	gw
United States	101.1	103.4	109.0	8	7.9
France	63.3	64.8	66.4	5	3.2
Japan	46.8	45.0	44.7	-5	-2.1
Russia	22.7	29.7	41.0	81	18.3
Germany	20.5	11.7	9.0	-56	-11.5
South Korea	18.7	24.2	28.1	50	9.4
Ukraine	13.1	13.1	16.2	23	3.1
Canada	12.6	12.6	15.0	19	2.4
United Kingdom	11.0	9.6	12.7	16	1.7
China	10.1	37.1	63.1	527	53.0
Total	**319.8**	**351.2**	**405.2**	**27**	**85.3**

[48] "Under construction" refers to reactors for which nuclear-grade concrete has been poured. It excludes reactors for which such concrete has not yet been poured (e.g., the U.K.'s Hinkley) and reactors for which non-nuclear grade concrete has been poured (e.g., ancillary buildings).

[49] By comparison, the number of nuclear reactors operating in the U.S. peaked in 1991 at 112 (U.S. EIA 2018b).

Table 3.4.2. Operable, planned, under construction, and proposed reactors (Data: WNA 2018d)

Country	# Operable	Operable MWe	# Construction	Construction MWe	# Planned	Planned MWe	# Proposed	Proposed MWe
Argentina	3	1,627	2	827	1	1,150	2	1,300
Armenia	1	376	0	0	1	1,060	0	0
Bangladesh	0	0	1	1,200	1	1,200	0	0
Belarus	0	0	2	2,388	0	0	0	0
Belgium	7	5,943	0	0	0	0	0	0
Brazil	2	1,896	1	1,405	0	0	4	4,000
Bulgaria	2	1,926	0	0	0	0	1	1,200
Canada	19	13,553	0	0	2	1,500	0	0
Chile	0	0	0	0	0	0	4	4,400
China	38	34,647	19	21,486	40	60,100	143	164,000
Czech Rep.	6	3,904	0	0	2	2,400	1	1,200
Egypt	0	0	0	0	2	2,400	2	2,400
Finland	4	2,764	1	1,720	1	1,250	0	0
France	58	63,130	1	1,750	0	0	0	0
Germany	7	9,444	0	0	0	0	0	0
Hungary	4	1,889	0	0	2	2,400	0	0
India	22	6,219	6	4,350	19	17,250	46	52,000
Indonesia	0	0	0	0	1	30	4	4,000
Iran	1	915	0	0	4	2,200	7	6,300
Israel	0	0	0	0	0	0	1	1,200
Japan	42	39,952	2	2,756	9	12,947	3	4,145
Jordan	0	0	0	0	2	2,000	0	0
Kazakhstan	0	0	0	0	0	0	3	1,800
Lithuania	0	0	0	0	0	0	2	2,700
Malaysia	0	0	0	0	0	0	2	2,000
Mexico	2	1,600	0	0	0	0	3	3,000

Country	# Operable	Operable MWe	# Construction	Construction MWe	# Planned	Planned MWe	# Proposed	Proposed MWe
Netherlands	1	485	0	0	0	0	0	0
North Korea	0	0	0	0	0	0	1	950
Pakistan	5	1,355	2	2,322	1	1,170	0	0
Poland	0	0	0	0	6	6,000	0	0
Romania	2	1,310	0	0	2	1,440	0	0
Russia	36	27,876	5	4,710	27	28,484	22	21,000
Saudi Arabia	0	0	0	0	0	0	16	17,000
Slovakia	4	1,816	2	942	0	0	1	1,200
Slovenia	1	696	0	0	0	0	1	1,000
South Africa	2	1,830	0	0	0	0	8	9,600
South Korea	24	22,505	4	5,600	1	1,400	6	8,800
Spain	7	7,121	0	0	0	0	0	0
Sweden	8	8,376	0	0	0	0	0	0
Switzerland	5	3,333	0	0	0	0	3	4,000
Thailand	0	0	0	0	0	0	5	5,000
Turkey	0	0	0	0	4	4,800	8	9,500
Ukraine	15	13,107	0	0	2	1,900	11	12,000
UAE	0	0	4	5,600	0	0	10	14,400
UK	15	8,883	0	0	11	15,600	2	2,300
USA	99	99,647	2	2,500	14	3,100	21	30,000
Vietnam	0	0	0	0	4	4,800	6	7,100
WORLD	**442**	**388,125**	**56**	**59,556**	**159**	**116,541**	**349**	**399,495**

China's energy transition from coal to nuclear and renewable energy is an essential element of Ecological Civilization. China consumes almost as much coal as the rest of the world combined (Wong 2016). It provides 73 percent of China's electricity (Wang, Wang, and Jin 2018). Coal also has devastating effects on human health (Chen et al. 2007; Zhou and Zhang 2010; Bradsher 2011; Hei 2016) and the environment, representing 60 percent of China's carbon dioxide emissions (Wang, Wang, and Jin 2018). To replace coal, China is rapidly expanding nuclear and renewable energy,[50] which are expected to provide 95 percent of the 420 Gigawatt electrical (GWe) of capacity China plans to add by 2020 (WNA 2017a). By combining these two sources, China's government is developing both decentralized, flexible capacity to accommodate growth (renewables) and a reliable baseload source to displace coal (nuclear). At the 2014 Nuclear Security Summit, Xi (2014a) described nuclear energy as essential for "ensuring energy security and tackling climate change. Like Prometheus who gave fire to humanity, the peaceful rise of nuclear energy has sparked a flame of hope and opened up a bright future for mankind."

3.5 The Technopolitics of Nuclear Energy in China

Using coal and oil as case studies, Mitchell (2011) argues that particular energy systems support and are supported by particular types of politics. I draw inspiration from Mitchell in this section to evaluate how China's pursuit of nuclear energy enhances and is enhanced by its domestic politics, which are characterized by rapid economic growth, rising living standards, and growing environmental problems (see Woetzel et al. 2009; Zhou and Zhang 2010; Power, Mohan, and Tan-Mullins 2012; Liu et al. 2016). I identify three areas of mutual enhancement between China's politics and nuclear energy: demand context, growth-based political legitimacy, and centralized political authority. I turn to geopolitics in Section 3.6.

[50] China became the world's largest installer of wind turbines, which contribute 2 percent of its electricity, in 2010.

Demand Profile

Nuclear energy matches China's domestic electricity demand context. It is efficient and reliable, with low marginal operating costs (particularly due to the low cost of uranium; see Chapter 4).[51] These advantages, however, come with high construction costs. As a result, nuclear energy is best suited to contexts with substantial baseload electricity demand, high-density populations (to minimize transmission costs), and significant capital availability (see Harvey 2005 and Peck and Zhang 2013). China fits this profile. Its annual GDP growth has averaged 9.71 percent for three decades (1989-2017) (with recent slowdowns; see World Bank 2017a). By 2030, China is expected to have more than 1 billion urban residents, versus 793 million in 2016. Its urban growth by 2030 is expected to roughly equal 70 percent of its 1.38 billion total population in 2016. Urbanization is associated with increased living standards and surging electricity demand. Per capita electricity consumption in China was already 3510 kWh/year in 2012 and is expected to reach 5500 kWh/year by 2030 and 8500 kWh/year by 2050 (WNA 2017a). To maintain economic growth while supporting urbanization and improved living standards, China needs to double its electricity generation between 2015 and 2030 (*Economist* 2014a). Finally, the CPC, at least for now, appears willing to support projects operating at an initial loss (as all nuclear power plants do) for the sake of achieving its long-term energy goals.

Growth-Based Political Legitimacy

The CPC's political legitimacy is based in its economic growth-as-progress narrative (Yeh 2013; Economy and Levi 2014; Sorace 2017; Hansen and Liu forthcoming), but its growing environmental challenges threaten that legitimacy. The CPC has staked social stability

[51] Nuclear energy's operating capacity (92.3 percent) outperforms geothermal (73.9 percent), natural gas (55.5 percent), coal (53.3 percent), hydro (38.2 percent), wind (20-34.5 percent), and solar (15-33 percent) (EIA 2017a).

on economic growth and citizens' perceptions that the benefits of that growth outweigh its costs (including political repression).[52] Its current developmental aim, the "China dream" of a "moderately prosperous society," entails doubling GDP between 2010 and 2020. Environmental degradation threatens both economic growth itself[53] and Chinese citizens' perceptions of its cost-benefit balance.

China's pollution has catalyzed public frustration and increasing environmentally-based protests (including NIMBYism, "linbi" in Chinese; see Economy 2004; Wasserman 2013; Chun and Lin 2014; Youzhi 2014; Albert and Xu 2018). "Environmental incidents" have displaced land disputes as the primary cause of social unrest (Economy and Levi 2014), with even the Chinese government reporting a 31 percent increase in "abrupt environmental incidents" between 2012 and 2013 (Ministry of Environmental Protection 2014). In a nationally-representative Pew survey of China,[54] 76 and 75 percent of respondents identified air and water pollution, respectively, as "big problems" (Pew 2015). The only concern that out-ranked pollution was corruption, which 84 percent of respondents described as a "big problem." Respondents were more pessimistic that air and water pollution would improve within five years than they were regarding any other issue. While 63 percent of respondents thought corruption would improve, only 37 and 36 percent of respondents thought water and air pollution, respectively, would improve. Declarations of a "war on pollution," like that made by Chinese Premiere Li Keqiang in 2014, will likely need to be supported by action to engender benefits in

[52] I discuss China's influence in shaping debates over economic versus political rights in Namibia in Chapter 6.

[53] China's Ministry of Environmental Protection has calculated pollution's economic cost at 3.5 percent of annual GDP. External estimates range from 3 to 10 percent (Zhang et al. 2010; Albert and Xu 2016). Estimates of premature deaths from air pollution range from 366,000 (GBD MAPS Working Group 2016; Wong 2016) to 1.2 million people (Zhang et al. 2010; Albert and Xu 2016).

[54] The survey was conducted of 3,649 randomly selected adults from April 15 to May 27, 2015.

terms of reduced environmental protest (Nakano and Yang 2014). Reducing domestic environmental degradation is thus far from just an environmental issue. Pollution threatens the growth-based legitimacy of the CPC itself.

Mitchell (2011, 143) argues that oil facilitated the development of growth-based Western democracies by making it possible for the economy to "increase in size without any form of ultimate material constraint." Oil's political abilities in this realm stemmed from perceptions of its limitless supply. Coal, of which China is the world's largest producer, has been the fuel of China's "limitless" growth. Its use, however, is increasingly no longer politically legitimate, both domestically and in the context of rising international pressure for China to reduce its carbon dioxide emissions.[55] Nuclear energy, however, retains this possibility of "limitless" supply in both material and symbolic senses. It is energy "too cheap to meter" without the air pollution and climate change costs of coal or oil. Even if uranium has material limits (albeit to a far lesser degree than oil; see Chapter 4), nuclear energy retains the possibility of developing closed-loop, advanced nuclear reactors that burn fuel of their own creation (e.g., "breeder reactors") without directly contributing to climate change or air pollution. It is a suitable energy source for the CPC's new pursuit of environmentally-sustainable growth via Ecological Civilization.

Centralized Political Authority

China's authoritarian regime — including its strong state-owned enterprises (SOEs), associated institutional infrastructure, and government-citizen relationships — provides a final key advantage in a high-cost, high-risk industry like nuclear power: centralized political authority. Nuclear energy is more centralized than any other energy industry due to stringent domestic and international regulations (see Chapter 4). Its success relies on standardized

[55] By 2030, the CPC aims to reduce China's carbon emissions by 40-45 percent from 2005 levels.

regulation and risk management regimes and substantial government support. “Regulatory risks” (i.e., governments changing regulations mid-stream or revoking support for projects) are the biggest financial challenges in the nuclear industry. These risks are not limited to post-accident or disaster countries. Support for nuclear energy tends to be hostage to global events, as in the German government’s post-Fukushima abandonment of nuclear power. The CPC’s commitments to long-term plans and stability, as well as its use of SOEs to build and manage domestic plants, make regulatory risks less of a concern than in democratic contexts, particularly ones with decentralized utilities governance (e.g., the non-southeastern U.S.).

Nuclear energy also aligns with China’s domestic political context in the area of public opinion and trust. Building on Melé and Armengou (2016), both elements are essential in lending moral legitimacy to the Chinese government’s nuclear pursuits. Mitchell’s (2011) prioritization of socio-technical linkages over public consciousness in his analysis of oil seems unsuitable for an analysis of the technopolitics of nuclear energy given its controversial status. Human agency through demonstrations and strikes has been among the greatest challenges to nuclear energy’s advancement since the 1970s. More than any other electricity source, nuclear power relies on trust. It is also prone to mysticism. Because few people feel well-informed about nuclear energy, public opinion is dynamic and context-sensitive. Importantly, nuclear energy also carries a lethal risk — radiation — that is invisible except in its long-term health effects (see Chapters 4 and 6) At modest levels, radiation’s effects can take upwards of 20 years to become visible. Pursuing nuclear energy without public trust is a political risk about which even the world’s most authoritarian governments would likely think twice.

Nuclear energy also retains social power as a symbol of modernity, development, and progress in China that it has lost in many Western contexts with anti-nuclear movements.

National-level concerns about nuclear energy in China are far outweighed by the pollution concerns discussed above. Although domestic support for nuclear energy declined modestly after the 2011 Fukushima disaster, the Chinese public has been supportive of nuclear energy since its domestic introduction in 1991[56] (Shi et al. 2000; Zhou and Zhang 2010; He et al. 2012; He et al. 2013; Kim et al. 2014; Guo and Ren 2017). Since Fukushima, the CPC has taken steps to maintain public support for nuclear energy, such as making local engagement (including local infrastructure and employment outcomes) a legal requirement in nuclear plant siting (Yang, Xia, and Flower 2017). These strategies appear to be successful. In contrast to air pollution protests, anti-nuclear protests have largely remained localized (Guo and Ren 2017).[57] Some nuclear host communities have even used nuclear energy as a tourism strategy.[58]

Furthermore, while the Chinese public may distrust its government's ability to address air and water pollution, Chinese citizens appear to have greater faith in their government's ability to manage nuclear energy. Drawing on sub-national survey data, He, Mol, Zhang, and Lu (2012) find that Chinese citizens identify their government as the most-trusted source of information on nuclear risks. Follow-up research by He et al. (2013) indicates that Chinese citizens have far higher levels of trust in their government's ability to provide accurate information, respond to emergencies, and make decisions on their behalf about nuclear energy than do citizens of any nuclear OECD countries. Focus group and interview research by Guo and Ren (2017) supports

[56] By contrast, support for nuclear energy appears to be declining in the U.S. 2016 Gallup polling indicated that a majority of Americans (54 percent) opposed nuclear energy for the first time since it began polling on the issue in 1994. Americans' support for nuclear energy peaked at 62 percent in 2010, just prior to Fukushima. Because Gallup asks about nuclear energy in the context of environmental questions, however, respondents may be more likely to express concern than they would in another context. This context has remained consistent though, so it does not explain the recent decline in support. Support for nuclear energy appears to be linked with energy security concerns in the U.S., but existing survey data does not make it possible to verify whether this is also the case in China.

[57] The same is also true of anti-uranium mining protests in Namibia, as I discuss in the following chapters.

[58] Under the CPC's "specialty towns" initiative, Haiyan, host to China's first domestically-built reactor, has branded itself "the city of hope" (*Economist* 2017). Its attractions include nuclear-themed museums, parks, and hotels.

this finding, indicating that Chinese citizens take particular comfort in the knowledge that government officials live in communities near nuclear plants. These findings are striking given that the CPC has identified lack of trust in government as one of its greatest challenges (He et al. 2013). The constraints on political speech in China may play a role in the results of the above research. Given the proximity of the recent Fukushima disaster to China though, the above findings suggest that it would seemingly take a domestic nuclear energy disaster or accident for public opinion to derail the Chinese government's nuclear energy development plans.[59]

Due to its high costs and risks, historical leaps in nuclear energy have been facilitated by intense government support, like that currently offered in China, rather than by private innovation. Even beyond the Manhattan Project, the American government's investments in nuclear energy (e.g., 1950s nuclear submarines) were essential in building public support for civilian nuclear electricity ("atoms for peace") (see Kirsch 2005). The French and South Korean governments also played key roles in their respective countries' nuclear innovations (see Hecht 1998 on France; Jasanoff and Kim 2009 on South Korea). The CPC's support for nuclear energy is not just rhetorically important then; such centralized political support has historically been essential to the industry's development.

3.6 Modeling Nuclear Development: The Geopolitics of China's Nuclear Rise

Given the match between nuclear energy and the Chinese context, China's greatest challenge — beyond the inherent risks of rapid construction — may be the most straightforward: securing adequate and reliable uranium sources. That brings us to Namibia. Before leaving China though, I analyze in the rest of this chapter the geopolitical implications of China's nuclear rise, including in Africa. Energy systems do not determine political systems, but Mitchell's research

[59] This remains a significant political risk, as a domestic disaster could undermine the CPC's support.

(2011) indicates that certain types of energy systems do work well with certain types of politics and geopolitics. Nuclear power is less and less the energy source of democracies (*Economist* 2015). As such, China's nuclear energy success or failure has implications for its geopolitical rise, including its status as a developmental and political model for other governments. In this section, I identify and discuss the geopolitical implications of China's nuclear rise in the realms of commercial strategy, energy security, and soft power. In Section 3.7, I evaluate the appeal of China's nuclear strategy in Africa, including Namibia, before turning to nuclear energy's material precondition — uranium — in Chapter 4. I return to a discussion of China's role as a developmental and political model in the context of Namibia in Chapter 6.

Nuclear Energy as "Going Out" Commercial Strategy

Commerce is central to the geopolitics of Ecological Civilization, and nuclear energy is no exception. Zhang Xinsheng, former Vice Minister of Education and current President of the International Union for Conservation of Nature, has argued that Ecological Civilization "implies a transformation of civilizations that does not eliminate the commercial civilization because the two are mutually reinforcing. Ecological Civilization evolves from its base in the commercial civilization" (translated by Hansen and Liu forthcoming, 4-5). In other words, Ecological Civilization is based in the idea that what is good for the environment is as good for business as it is for politics.

Wagering that it will not be the only country seeking to escalate its nuclear energy use (see Section 3.7), China's government is developing a new industry around nuclear power provision that benefits its existing energy SOEs.[60] The CPC aims for China to become the

[60] Russia has also pursued this strategy. Rosatom, its nuclear SOE, has more than 20 export orders for nuclear reactors and components destined for Bangladesh, Egypt, Finland, Hungary, Iran, Jordan, South Africa, Turkey, and Vietnam (Steyn 2015). The Economist Intelligence Unit (2011, 6) speculates that Russia's nuclear pursuits are essential to its "energy calculus," making it possible for Russia to export more of its oil and gas.

world's leading supplier of nuclear components and reactors (Hinze and Zhou 2012; Martin 2016). Given China's domestic nuclear ambitions, the CPC has prioritized developing technologies to reduce notoriously-long nuclear plant construction[61] to less than three years (Vaidyanathan 2015). This includes developing small modular reactors (SMRs), which offer safety, scale, and efficiency benefits also of interest to smaller countries. Compared to larger reactors, SMR components are easier to pre-build in factories (with safety and speed benefits) for on-site assembly (*Economist* 2016a). SMRs also have greater applicability beyond electricity (e.g., transport, desalination) and can be used underground, reducing engineering costs. Saudi Arabia, South Africa, and Namibia, among others, have expressed interest in these technologies.

Reflecting both the needs of its rapid-build domestic strategy and the post-Fukushima global context, the Chinese government has also become a leader in the development of safer nuclear operating systems. Most notably, the Shanghai Institute of Applied Physics (SINAP), a branch of the Chinese Academy of Sciences, is rapidly developing its own Generation III[62] and Generation IV designs (Martin 2016). The Chinese government had anticipated using Generation II for at least a decade prior to Fukushima, but after the disaster it decided to transition to Generation III technology despite its higher costs (Hinze and Zhou 2012). As of 2016, China is only building Generation III plants. Generation IV techniques under development include gas and molten salt-cooled reactors (fail-safes in the event of catastrophic loss of power and back-up

[61] Most currently-operating reactors were under construction for six to eight years (IEA 2015). The range has increased over time. Construction times for nuclear plants opened in 2010 ranged from four to 20 years (IEA 2015).

[62] Generation III designs, which emerged in the late 1960s, have significantly better passive safety systems than Generation II designs, as well as enhanced fuel technology and thermal efficiency. For Generation I reactors, the risk of a radiation leak of significance is estimated at 1 in 1,000 to 1 in 10,000 per reactor year (Goldberg and Rosner 2011). By contrast, the risk for Generation II reactors is estimated at between 1 in 10,000 and 1 in one million per reactor year. For Generation III reactors, the risk is estimated at 1 in 1 million to 1 in 100 million per reactor year.

generation capabilities), sodium-cooled fast reactors able to consume spent fuel from conventional reactors (closed-loop technology), and reactors powered by liquid thorium,[63] of which China has significant domestic reserves.[64] Thorium reactors are unable to produce plutonium for nuclear weapons, a disadvantage in the Cold War that is a compelling advantage in today's geopolitical context. These technologies could facilitate radical safety improvements over light-water reactors (LWRs), which have dominated nuclear energy since 1954.

In developing these technologies, China's government has pursued an "indigenization" strategy that reflects its domestic goal of developing "national champions" in strategic industries (e.g., high-speed rail) as well as its wider "Going Out" geopolitical strategy. This approach benefits its two primary[65] nuclear SOEs: China National Nuclear Corporation (CNNC) and China General Nuclear Power Corporation (CGN), which owns 90 percent of Husab.[66] Following the successful standardization strategies of South Korea and France, for example, China's government is developing Chinese-built versions of standard reactor designs, including a CGN-built CPR-1000 based on Électricité de France's 900Mwe model (Hinze and Zhou 2012). To facilitate this process, China's government requires that multinational companies contracting with Chinese SOEs on domestic plants provide documentation on how each reactor is built (Bradsher 2011). Through this strategy, China's SOEs will hold patents for nuclear exports, a

[63] For an overview of liquid-fluoride thorium reactors, which rely on the conversion of thorium into fissile U-233, see *Economist* (2013b). Oak Ridge National Laboratory in the U.S. operated a liquid-fluoride thorium reactor in the 1960s, but it was defunded because it did not produce sufficient plutonium for nuclear weapons.

[64] Thorium reserves are not well known due to insufficient commercial demand. Of known reserves, however, China has over 100,000 tons, ranking it 11th in the world. India has the world's largest known reserves (eight times those of China) (WNA 2017b).

[65] China has five additional SOEs— China Power Investment Group, Datang Group, Guodian Group, Huadian Group, and Huaneng Group — with smaller stakes in its nuclear industry.

[66] CGN had a $3 billion initial public offering in December 2014. As it does not rely heavily on private investment thanks to its Chinese government support, *The Economist* (2014b) speculated that CGN's public listing was designed to be a statement on the rising profile of China's nuclear industry.

market valued at more than $500 billion in 2014 and expected to reach $740 billion by 2025 (David 2014). More CPR-1000 components are now built in China, for example, than in France (Plumer 2016). As an added benefit to the CPC, nuclear exports are a high-employment industry, with an estimated 5000 jobs associated with every $1 billion in exports (David 2014).

China's rising commercial leadership in nuclear energy has attracted the attention of Western governments. In the U.K., CGN's 2016 purchase of a one-third stake (valued at $23 billion) in the U.K.'s high-profile Hinkley Point C power station generated substantial domestic controversy (see *Economist* 2015b; Watt 2017). In the U.S., a mid-level Department of Energy employee told me they thought the Department of Energy's April 2018 decision to allocate $60 million for 13 advanced nuclear technology projects (including NuScale's small modular reactor) was in response to concerns that the U.S. nuclear industry is ceding too much ground to China, with commercial as well as geopolitical implications (Interview F). A 2013 report by the Center for Strategic and International Studies described the need to increase the U.S. nuclear export sector relative to China as a "national security imperative" (Banks and Wallace 2013).

The geopolitical implications of Ecological Civilization as a commercial strategy extend beyond nuclear energy. By framing Ecological Civilization as based in commerce, the CPC may be charting a geopolitical path that attempts to dislodge several persistent binaries. Instead of "sustainability versus development," Ecological Civilization proposes development *through* sustainability. Instead of "capitalism versus socialism," Ecological Civilization proposes socialism *through* commerce. If China becomes a major exporter of nuclear technology to countries that currently lack it, the undermined binaries associated with Ecological Civilization may also include the nuclear versus non-nuclear binary ("nuclearity") described by Hecht (2012). I discuss how China might undermine this binary in sub-Saharan Africa in Section 3.7.

Nuclear as Energy Security Strategy

Although its domestic uranium supplies are insufficient to meet its long-term needs (see Chapter 4), nuclear energy intensification is likely to improve China's energy security. China lacks sufficient supplies of both coal and oil to meet domestic demand (Zweig and Jianhai 2005; Daojiong 2006; Yao and Chang 2014). While it is the world's largest producer of coal, China also the largest coal importer (IEA 2012). Its coal reliance entails a high transport burden even for domestic supplies. Seventy percent of China's coal comes from rural north and northwestern China, far from the electricity-demanding southeastern coast (Cai and Zhang 2006; Ji et al. 2014). A 1,000MW coal plant burns over 2 million tons of coal per year. A similar-capacity nuclear plant, by contrast, uses only 190 tons of uranium yellowcake per year (WNA 2018b). Coal transport occupies 40 percent of China's rail capacity and 33 percent of its road capacity (Wang, Wang, and Jin 2018). This situation increases both the risk of a domestic supply disruption (Mitchell 2011) and China's oil consumption (He et al. 2013).

China's reliance on imported oil is far more geopolitically-concerning than its reliance on imported coal, [67] most of which comes from Australia, Indonesia, the U.S., and Canada (EIA 2015). In 1985, China was the largest oil exporter in East Asia. Today, it is the world's largest net oil importer, despite being the world's sixth-largest oil producer (EIA 2014). By 2025, China is expected to import 77 percent of its oil, up from 65 percent in 2016 and less than 50 percent in 2007 (IEA 2015). Most of this oil (roughly 80 percent) is imported through the Strait of Malacca chokepoint. The Chinese government has attempted to diversity its oil supplies away from geopolitically-unstable regions by partnering with countries like Brazil, but it still imports most of its oil from Russia (14 percent), Saudi Arabia (13 percent), Angola (11 percent), Iraq (10

[67] Modest geopolitical issues with coal include China's 2017 ban on North Korean coal after its ballistic missile test.

percent), Oman (9 percent), and Iran (8 percent) (EIA 2017b). China's oil demand is also creating tests of its geopolitical power, including its territorial claims in the East and South China Seas. While domestic price increases could stem demand, this strategy could also catalyze unrest. Nuclear energy may not seem like an obvious replacement for oil, as most of China's oil is used for transportation (40 percent) rather than electricity (less than 1 percent) (IEA 2012). Nuclear energy can, however, reduce China's oil import reliance when combined with the Chinese government's major investments in electric vehicles. The Chinese government wants 20 percent of cars sold in China to run on alternative fuel by 2025. China already accounts for 50 percent of electric vehicle sales (Bradsher 2017). It had 154 million electric vehicles in 2014 (versus 27 million in 2004) and added 17 million in 2014 alone (Albert and Xu 2016). As I discuss further in Chapter 4, China's geopolitically-stable sources of overseas uranium, including Namibia, make it possible to reduce oil reliance without risking domestic unrest through price increases.

China's use of nuclear energy to enhance energy security is not unique among resource-poor countries (see Jasanoff and Kim 2009 on South Korea), but it may also be of interest to resource-rich states. Russia (5 reactors) and the UAE (4 reactors), for example, rank in the top five for both under-construction nuclear reactors and annual oil exports. For oil-rich countries like Russia, nuclear energy presents an opportunity to maximize oil exports when prices are high. Saudi Arabia's annual use of oil for electricity, for example, represents $11 billion in annual lost export revenue (*Economist* 2015a). Russia has long been a nuclear power, but the UAE is a newcomer to this strategy. When its first nuclear reactor begins operations in 2019, it will become the Arab world's first nuclear power. By 2020, the UAE aims for nuclear energy to provide over 25 percent of its electricity. Saudi Arabia is also developing plans for 16 reactors in

cooperation with least six countries, including a gas-cooled reactor with China (see Table 3.4.2). It has also signed an agreement with China's CNNC to explore for domestic uranium.

If these recent developments are any indication, the application of China's "going out" strategy to nuclear energy may lead to some surprising shifts in nuclear energy's geopolitics, with potential implications for proliferation.[68] These proliferation concerns could further benefit China's SOEs. Non-proliferation centers on preventing countries with nuclear energy from reprocessing their fuel to create plutonium (via "breeder reactors") and from developing their own enrichment systems (rather than importing enriched uranium[69]). The pressurized water reactors (PWRs) that currently dominate the nuclear industry[70] are limited by the energy-moderating properties of water (i.e., the limits to which it remains liquid when heated). To offset water's poor abilities as a moderator, PWRs use nuclear fuel enriched with U-235. These enrichment levels are much lower than those required for nuclear weapons, but the process is similar. As mentioned above, China is a leader in the development of thorium-based reactors to replace uranium. Thorium reactors would not create plutonium as a by-product of energy generation, nor would they use of nuclear fuel enriched with U-235. They would also have the added benefit of using a fuel (thorium) of which China has significant domestic supplies.

[68] Although distinct technologically, nuclear power and nuclear weapons are geographically and politically intertwined. Only two non-European countries with nuclear power plants — Japan and Mexico — have not pursued nuclear weapons development (although these pursuits have often been short-lived). Israel, meanwhile, is the only country to have nuclear weapons without nuclear power plants.

[69] Known enrichment facilities exist in Argentina, Brazil, China, France, Germany, India, Iran, Japan, the Netherlands, North Korea, Pakistan, Russia, the U.K., and the U.S.

[70] PWRs are the most common type of light-water reactors, representing 70 percent of operating reactors. The other two types —boiling water reactors and supercritical water reactors — are used only in Canada, Japan, and the UK.

Nuclear Energy as "Soft Power" Strategy

Although nuclear energy is controversial in many parts of the world, it is also a prestigious industry that is supporting China's rebranding as a global environmental leader. China's efforts to enhance its "soft power" are receiving growing scholarly attention (e.g., Gill and Huang 2006; Kurlantzick 2007; Wang 2008; Paradise 2009; Caceres and Ear 2013). Nye[71] (2004, x) defines soft power as "the ability to get what you want through attraction rather than coercion or payments." It includes culture, political values, technological innovation, and, importantly, legitimacy. Nye (2004, x) argues that "[w]hen our policies are seen as legitimate in the eyes of others, our soft power is enhanced." China's incredible economic growth has enhanced its soft power across much of the global South, including among the African countries discussed at the beginning of this chapter. Its environmental degradation, however, has hurt its legitimacy and put its developmental appeal at risk. It may not be a coincidence that Ecological Civilization was formally introduced at the same 17th National Congress of the Communist Party of China at which former President Hu Jintao announced that China needed to enhance its soft power. Ecological Civilization, if successful, may help China overcome its environmental pariah reputation in a way that no number of Confucius Institutes could accomplish.

China's nuclear rise both reflects and reinforces its broader geopolitical rise. By making nuclear energy a key element of Ecological Civilization, the Chinese government also associates itself with nuclear energy's geopolitical power. The prestige of nuclear capabilities in international affairs — as well as the pariah status attributed to those deemed undeserving of such prestige — is nothing new, as the substantial literature on the topic across multiple

[71] Nye's soft power has been criticized by several scholars in international relations and other fields. I use it here not as an endorsement but because it seems to be the most prominent concept referenced in evaluations of China's geopolitical appeal.

disciplines and geographic contexts makes clear (Sagan 1996; Hecht 1998; Puig 2005; Sovacool and Valentine 2010; Yi-Chong 2010; Abulof 2014). Western officials may be interpreting China's nuclear rise with caution, but not all interpretations of its ambitions are negative. I opened this chapter with a quote from a Namibian youth leader (Interview E). They described nuclear power as the "adult table" of international relations, a status to which they thought Namibia should aspire. This interviewee was far from the only Namibian who expressed admiration for China's nuclear ambitions. Such sentiments were particularly prominent among members of SWAPO, which plans to develop its own nuclear energy program (see Section 3.7). China's nuclear rise signals its ability to chart its own geopolitical destiny, a status with appeal that surely extends beyond Namibia.

Beyond the geopolitical "adult table," nuclear energy also has futuristic appeal. Technological innovation is an element of both Nye's (2004) soft power and Jasanoff and Kim's (2009) sociotechnical imaginaries. Even in its pessimistic coverage of nuclear power after Fukushima, *The Economist* (2012b, 5) admitted that nuclear energy remains appealing to those who want to join the "technological premier league." It signifies technological mastery and, at least for many of my Namibian research participants, future-oriented thinking. SWAPO leaders regularly cite China's nuclear energy pursuits when characterizing it as a "pilot," "innovator," or "standard" in the media and public forums. A young Namibian made a similar argument after a focus group (FG 15), telling me that the U.S. "wants more coal, more miners. That is energy from the 1800s! They would have us turn around. China says wind, nuclear, solar. These are the energies of the future." Despite Fukushima, nuclear energy continues to represent the possibility of limitless development through seemingly-endless energy for many (although not all) Namibians. It is "green" and futuristic unlike coal or oil, but it also signifies "power" in a way

that few renewables do.[72] China's nuclear rise enhances its new reputation as a forward-thinking world leader committed to both development and environmental protection.

The geopolitical advantages of China's nuclear energy rise in the realms of soft power, energy security, and commercial strategy are likely to reinforce one another. By partnering with non-OECD countries seeking nuclear energy, for example, China's SOEs can profit while enhancing China's soft power.[73] China's technology exports, particularly its small-modular reactors, may also make nuclear energy more accessible. Chinese companies already contributed 28 percent of the world's new nuclear reactors in 2014, trailing Russia with 37 percent but leading third-place South Korea with 10 percent (David 2014). These nuclear partnerships reinforce China's historical international affairs priorities (and sources of soft power, particularly in Africa) of mutual benefit and win-win development. Where the slogan of the Cold War U.S. was "atoms for peace," the slogan of contemporary China may be "atoms for win-win development" — with win-win signifying environmental-economic mutual benefits as well as south-south solidarity. Even the proliferation concerns associated with expanded nuclear development may benefit China by increasing interest in its thorium-based reactors.

Finally, exporting reactors may also facilitate opportunities for Chinese investment abroad. Few of the non-OECD countries with plans for nuclear energy, particularly outside of the Middle East, are likely to have sufficient domestic funds to build their own reactors. China's partnerships with such countries could be a fruitful entry point for Chinese loans. This is perhaps

[72] Hydropower, which is associated with prestige due to its "megaproject" scale, is a possible exception. Nuclear energy still has a mystique that I would argue hydropower lacks though. Unlike as is the case for uranium mining, I have never spoken to a Namibian who seemed to view the country's Ruacana dam in terms of geopolitical prestige.

[73] China is not the only nuclear energy leader pursuing this strategy. Korea Electric Power (KEPCO), an SOE with some external ownership, is building four reactors in the UAE. Russia's Rosatom is the current leader in overseas construction, with more than 20 export orders for reactors and components in progress (David 2014; Steyn 2015).

nowhere truer than in sub-Saharan Africa, a potentially-massive export market for China with growing interest in nuclear energy.

3.7 The Appeal of China's Nuclear Strategy in Sub-Saharan Africa

Excluding the "uranium from Africa" argument that foregrounded the U.S. invasion of Iraq, Africa, with just one nuclear power plant (South Africa's Koeberg), is rarely associated with nuclear energy. Our understanding of African states as separate from nuclear geopolitics is related to perceptions of Africa as poor and technologically backwards (see also Hecht 2012). As the world becomes increasingly African through demographic change though, the continent is likely to play an even greater role in energy geopolitics, including nuclear energy. African states' nuclear ambitions are subject to significant feasibility concerns. If these ambitions lead to action though, China will likely play a prominent role as a model, funder, and technology provider.

Although dwarfed by attention to renewable energy, nuclear energy development in Africa (sometimes referred to as "atoms for Africa") has attracted modest attention among development practitioners (IEA 2014; Campbell 2017; Center for Global Development 2018) and some academics (Kenny 2008; Jewell 2011; Marktanner and Salman 2011; Kessides and Kuznetsov 2012). Attention is less modest among African politicians. In 2015, ten African countries (Egypt, Ghana, Kenya, Morocco, Niger, Nigeria, South Africa, Sudan, Tunisia, and Uganda) established the African Network for Enhancing Nuclear Power Program Development (ANENP) in association with the International Atomic Energy Agency (IAEA). South Africa, Egypt, and Nigeria have the continent's most ambitious plans. South Africa aims to increase the share of its electricity provided by nuclear power from 5 percent to 25 percent between 2015 and 2025 (IEA 2014). Egypt and Nigeria have announced proposals for four nuclear reactors each

(IEA 2014). Namibia, Senegal, Tanzania, and Zambia have also expressed interest in nuclear energy. Each of these countries' plans includes a role for Chinese SOEs.

Why would African countries be interested in nuclear power? The prestige factors discussed above also apply to Africa, but there are also more practical concerns at play. Nuclear energy's high construction costs but low marginal costs make it most efficient in high-demand contexts. Like China, many African countries face rapidly-escalating electricity demands associated with urbanization, rising living standards, and population growth. More than 625 million people in sub-Saharan Africa lacked access to electricity in 2013 (IEA 2014). Even though 40 percent of infrastructure projects underway in sub-Saharan Africa are related to electricity provision (Banks 2017) and electricity generation is expected to double from 2015 to 2020 (*Economist* 2014c), the continent's high rate of population growth means that demand will likely continue to outpace supply. Sub-Saharan Africa's population is projected to reach 2.8 billion people by 2060 (~30 percent of the projected global population), compared to 1 billion in 2010 (World Bank 2015). Nigeria is expected to become the third most-populous country that year (415 million), trailing only India (1.6 billion) and China (997 million) (World Bank 2017a).

Urbanization will further increase electricity demand in sub-Saharan Africa due to rising living standards. Between 2010 and 2015, eight of the ten fastest-urbanizing countries were in sub-Saharan Africa (UN 2017a). By 2030, 50 percent of Africans are expected to live in urban areas, up from 36 percent in 2010 (World Bank 2015). As in China, urbanization will have the largest impact on baseload electricity demand, of which nuclear and coal are the primary sources.

Overall, African countries are poorly prepared to respond to these rising electricity demands. In 2016, sub-Saharan Africa generated a similar amount of electricity to Spain, despite having a population that is 19 times larger (Banks 2017). If South Africa is excluded, sub-

Saharan Africa's generation capacity is roughly equal to that of Argentina. Providing citizens with electricity is likely to be a top priority for stability-focused African governments. Just one of the nuclear plants under construction in China (Haniyang, with three AP1000 reactors), however, could produce as much electricity as is currently produced in the entirety of Nigeria (*Economist* 2012c).

While population pressures will play a larger role in increasing electricity demand in Africa than in China, African governments share China's challenge in balancing economic growth and rising living standards with environmental sustainability. Power shortages cost African countries an average of 2 percent of their GDP each year (4 percent in Nigeria; *Economist* 2014c). Economic growth has also been accompanied by rising pollution. By 2050, urban air pollution in sub-Saharan Africa is expected to cause 3.6 million premature deaths per year, moving it ahead of inadequate clean water and sanitation as the top environmental cause of mortality on the continent (Wong 2016). Like the CPC, many African governments rely on development for political legitimacy (see Cooper 2002). Rising pollution associated with rapid industrialization could further undermine the already-weak legitimacy of many African governments, particularly when combined with African countries' rapidly-growing youth populations.

Beyond electricity provision and environmental issues, nuclear energy also has spatial benefits. In countries with land shortages and/or major political tensions involving land allocation and distribution — as is the case in much of sub-Saharan Africa — nuclear energy is a remarkably space-efficient energy option.[74] The possibility of siting nuclear power plants near

[74] Living and working near a nuclear power plant is, however, rarely popular, and waste storage is also a concern. The long-term space requirements associated with nuclear energy disasters are also substantial. The exclusion zone around Chernobyl, for example, is roughly 1000 square miles, while the exclusion zone around Fukushima is roughly 500 square miles.

urban areas without air pollution consequences is also financially appealing given the substantial transmission costs in many African countries (for more, see Kenny 2008). Renewable energy, by contrast, is space-intensive. In high-wind regions (assuming 20 percent capacity), 200-250 square miles of windmills are required to produce roughly 1 GW of electricity (*Economist* 2012b). Solar power (again in favorable conditions, assuming 17 percent capacity) requires roughly 50 square miles of cleared land to produce 1 GW of electricity (*Economist* 2012b). The reactor for a 1 GW nuclear power plant, by contrast, is roughly the size of a bedroom (diameter = 15 feet), with a containment room the size of a large industrial building. The small modular reactors (SMRs) under development in China are roughly the size of a trash can. SMRs are likely to be of particular interest to countries with lower initial power demands due to their lower costs and more modest scale (~100MWe versus roughly 600 MWe at the smallest typical reactor plants).

Construction costs are, of course, a substantial hurdle to the development of nuclear energy in African countries. Small nuclear reactors (not SMRs, just smaller than the average size of a nuclear reactor) in China typically cost at least $1-2 billion (IEA 2015). These costs might not be as prohibitive as they initially appear though, particularly if they are facilitated through the low-interest Chinese government loans that are becoming increasingly common across the continent. It is also important to consider nuclear energy's costs in comparative terms. Other non-renewable energy sources[75] are also costly in Africa. Nigeria, for example, spends roughly $14 billion annually in off-grid diesel generation (IEA 2014). By 2035, Nigeria aims for 80 percent of its population to have grid-connected electricity, compared to 50 percent today (IEA 2014). The long-term cost of achieving this goal through an energy source with high marginal

[75] Renewable sources are a much more cost-effective option in rural Africa. They may be less well-suited to urban African due to space demands, issues of baseload power reliability, and transmission costs.

costs (e.g., diesel) may be even more prohibitive than that of nuclear energy. First-moving countries may also have lucrative opportunities to export electricity to their neighbors, following a model already used by South Africa's Eskom with Zimbabwe and Namibia.

Nuclear power ambitions in Africa are not limited to high-population countries like Nigeria. With a population of 2.5 million, Namibia is low on the nuclear probabilities list. In April 2011 though, the GRN announced plans to have its own nuclear reactor by 2018. During a nuclear energy conference that year, then Minister of Mines and Energy Isak Katali said,

> It is the expressed [sic] decision of the Namibian government to seriously consider the development of nuclear power in order to complete the national energy mix and provide sufficient energy for our development.

While Katali's plan has obviously not come to fruition, particularly given Namibia's current economic recession, nuclear energy remains a hot topic in Namibian political circles. The Chinese government is increasingly involved in those plans. In April 2017, a Chinese-Namibian joint venture submitted plans for a nuclear plant to the Ministry of Mines and Energy (Kaira 2017). Current Namibian President Hage Geingob first expressed interest in such a plant in 2014. when he toured China's CGN-managed Dayawan Nuclear Plant (Interview G, GRN official).

Energy security and prestige factors have influenced Namibia's surprising nuclear ambitions. When I asked GRN officials about the biggest development challenges facing Namibia in the next 15 years, energy security was a common (although not the most common; see Chapters 5 and 6) response. Namibia imports 60 percent of its electricity from South Africa, Zambia, and Zimbabwe, at a cost of $9.9 million in 2016. These countries are experiencing their own power shortages, making Namibia subject to blackouts that hamper commerce and fuel public discontent. Options for renewing these import contracts are uncertain beyond their 2020-2025 expirations (Interview H, NamPower Official). Simultaneously, drought is hampering

Namibia's sole hydroelectric plant on the Angolan border, and its primary coal power station near Windhoek has been downgraded for age-related reasons. Given Namibia's substantial uranium resources (see Chapter 4), nuclear energy is appealing to those concerned with domestic energy shortfalls.

More importantly, nuclear energy represents for many Namibians an opportunity to remedy a situation in which Namibia is, in the words of a NamPower (Namibia's government electricity utility) representative at a 2016 mining conference, "giving away our comparative advantage [uranium]." This is particularly true within SWAPO. The uranium Namibia has exported since 1976 has facilitated the nuclear development and geopolitical prestige of countries like the U.K., the U.S., and South Africa, but it has done little, in the eyes of most of my SWAPO informants, to enhance Namibia's geopolitical status. Many in SWAPO regard this situation with a sense of injustice. President Geingob made his frustration clear during a state visit to India in 2016, when he characterized the control of nuclear technology by only a few countries as "nuclear apartheid." Plans are underway to increase Namibia's use of renewable energy by 2030, but these projects lack the political prestige and justice-oriented appeal of nuclear energy or even natural gas-based electricity generation (e.g., the proposed Kudu power plant). Instead, my SWAPO informants often viewed renewable energy with skepticism that seemed to be related to its support in Namibia's (largely white) environmental activist groups.[76] While there is skepticism about uranium-based development in Namibia (see Chapter 6), some Namibians share the SWAPO view that using Namibia's uranium for its own nuclear energy is a matter of justice. "Selling the uranium is selling out our country," one young Namibian uranium

[76] I return to the role of race in environmental activism in Namibia in Chapter 6.

mine employee told me (FG 12). His fellow focus group participants agreed. These sentiments were most common in communities near Namibia's uranium mines.

Nuclear energy makes little sense in Namibia given its small population, yet it continues to have political appeal due to its implications for energy security and perceptions of prestige and injustice within the ruling party. Interest seems to be growing in conjunction with the resurgence of Namibia's uranium mining industry, which has in turn been facilitated by China's nuclear energy rise. If plans for nuclear energy in Namibia or elsewhere in sub-Saharan Africa come to fruition, China's nuclear rise could play key a role in challenging the "nuclearity" (Hecht 2012) power differential that has long separated African uranium exporters like Namibia from the world's nuclear powers. I return to this topic in Chapter 4.

3.8 Conclusion

More than a century has passed since newspapers first described nuclear energy as the facilitator of "a world of unlimited power and abundance," "limited only by man's capacity to imagine new wants and needs" (cited in Boyer 1985). Today, despite high-profile disasters, nuclear energy is again gaining prominence in response to climate change. Nuclear energy's trajectory from "limitless possibility" to "moral outrage" and back has been a technopolitical one. Its support has waxed and waned based not only on technological achievements or failures but also based on how those events were situated and interpreted in particular political, economic, environmental, and social contexts. Geopolitics may have driven nuclear energy's development, but nuclear energy has also driven geopolitics. In *Bomb Power,* historian Garry Wills (2010) argues that nuclear energy changed the nature of geopolitical and domestic power by redefining the President as the one with a hand on "the button." In *Carbon Democracy,*

Mitchell (2011) argues that fossil fuels facilitated both American democracy and America's geopolitical rise. Perhaps nuclear energy will do the same for China over the coming decades, with the foundation for the sociotechnical imaginary of Ecological Civilization grounded in an authoritarian, one-party system that, as I describe in Chapter 6, has appeal even for political leaders in democratic Namibia. Ecological Civilization may even become a geopolitical version of "expert knowledge" (Wynne 1982; Jasanoff 1990; Collins and Evans 2007) on how to simultaneously grow an economy, raise living standards, and protect the environment — defining the public good for the world, not just China, to pursue.

If so, it would not be the first time that China has been associated with being forward-thinking in geopolitical terms, particularly in the context of African states that benefitted from its support for their liberation struggles. In my interviews and focus groups, Namibians from a wide range of backgrounds — from journalists and academics to kombi drivers and unemployed youth — were quick to express their respect for China's leaders as long-term thinkers, even if they disliked their influence in Namibia. A young man selling cell phones in rural Namibia, for example, told me that he admired the Chinese because "they don't think what will we eat this year, next year, like our leaders do. They think what will the children of our children's children eat" (Interview I). I heard many interpretations of this sentiment, which is typically traced to former Chinese Premier Zhou Enlai. It is perhaps fitting that he supposedly pioneered his famous remark on China's centuries-oriented thinking to a group of African writers who met with him in Beijing in 1958.

As is seemingly always the case in geopolitical imaginaries though, Ecological Civilization is far from self-sacrificing. China has much to gain from "atoms for development." This is not out of line with another theme in Chinese foreign policy that is greatly admired

among Namibian government officials: mutual benefit. I return to this theme in more detail in Chapter 5. For now, I will note that when I asked Namibians how they would characterize China's approach to international affairs, most were quick to express respect for its strategic mindset, even if they disliked the implications. China's straightforward approach to pursuing its self-interest was admired (sometimes more or less reluctantly) even among some members of opposition groups, often with the caveat that the GRN should do a better job of following that model itself (i.e., pursuing its own self-interest rather than China's; see Chapter 7).

Given the technopolitical match between nuclear energy and China's domestic context, the Chinese government's nuclear ambitions appear secure except for one crucial element in short domestic supply: uranium. The next three chapters focus on this oft-overlooked, material basis for China's nuclear rise. China is on-pace to become the world's second-largest uranium consumer by 2020 (Gil 2017), and the Chinese government is well on its way to securing foreign uranium sources to support its nuclear ambitions. Far from a mere admirer of China's nuclear energy development, Namibia has become an active participant.

Chapter 4
Geopolitical Geologies of Namibian Uranium

> People say all it takes to mine uranium here in Africa is a few shovels for the miners and a few rand [South African currency] to pay them — nothing like in [the] rich countries. Those days [under apartheid] it took even less.
>
> -Former Uranium Industry Employee
> Interview J

> If you want to mine uranium here, I hope you speak Mandarin.
> -Namibian Youth, DRC Informal Settlement in Swakopmund
> Focus Group 10

4.1 Introduction

China's nuclear rise has attracted academic and media attention regarding issues of safety (Xu 2014b; Zeng et al. 2016), security (Daojiong 2006; Zhang and Bai 2015; Thomas 2016), technical feasibility (S. Zhou and Zhang 2010; Y. Zhou et al. 2011), motivation (Martin 2016), and domestic politics (Xu 2008; Wu 2017). There has been less attention to the implications of China's nuclear rise for its foundational commodity: uranium. Like the cobalt needed to produce batteries for electric vehicles, nuclear energy is a proposed climate change mitigation tool with distributive implications that cannot be separated from the materiality of its production. Yet, analyses of nuclear energy geopolitics rarely engage with uranium mining (see also Burke 2017).

This chapter provides the historical and material context, as shaped by both geology and geopolitics, for understanding the contemporary politics of Namibia's uranium industry and Chinese investments in it. My use of "materiality" and "material" in the following pages refers to the geology of uranium mining, its processes and effects, and how these elements are situated within both the local environmental/social context and broader geopolitical and economic dynamics.[77] In this chapter, I primarily draw on scholarship on materiality in political ecology

[77] This approach draws on the work of Watts (2004) as well as Mitchell (2011) on multi-scalar oil politics.

(e.g., Castree 2003; Bakker and Bridge 2006) and STS (e.g., Swyngedouw 1999 and 2004; Whatmore 2002), particularly STS-informed historical analyses (e.g., Mitchell 2011; Hecht 2012). I discuss the embodied materiality of uranium (i.e., how it manifests in the bodies of local residents and mine employees) in Chapter 6, drawing inspiration from the work of feminist geographers (e.g., Valentine 1999; Silvey 2004).

The chapter proceeds as follows: first, to set the stage for the historical analysis, I begin in Section 4.2 by describing how and why China's pursuit of nuclear energy is manifesting in Namibia's uranium industry. This section provides the rationale for focusing this dissertation on uranium mining and nuclear energy rather than another mining sector. Next, I analyze the geology of nuclear energy: uranium. I focus on how the materiality of uranium mining is intertwined with its historical and contemporary geopolitics, including the distinction between nuclear and non-nuclear "things" (Hecht 2009, 897) and places. I then turn to the characteristics and history of uranium mining in Namibia, situating the industry's development in both global shifts in nuclear geopolitics and Namibia's apartheid history. In the final two sections, I explain how, against seemingly all market-based and geological odds, Namibia's uranium industry is growing thanks to Chinese investment. I conclude by discussing how the Namibian case study contributes to our understanding of the geopolitical geologies of China's nuclear energy rise.

4.2 China's Nuclear Rise and Namibian Uranium

Over the past fifty years, the world's largest nuclear energy producers (e.g., the U.S., Russia, France, South Korea, Japan, the U.K., Germany) have rarely been self-sufficient in uranium. Instead, they have relied to varying degrees on imported uranium from countries with lower extraction costs in environmental, social, political, and economic terms. This situation was sometimes necessary due to insufficient domestic supplies, as in the U.K. In other cases, it was a

matter of choice to avoid the domestic consequences of uranium production, as in Germany and the U.S. Both factors appear to be influencing China's uranium procurement strategy.

If China's government comes even close to achieving its nuclear energy goals, China will use more uranium annually by 2050 than the entire world did in 2015 (Zhang and Bai 2015). Its proven domestic uranium reserves are insufficient to meet its nuclear ambitions beyond 2030, by which time it will almost certainly be the world's largest uranium consumer. This is not, however, true in the short-term. China has mined uranium domestically since 1958. Even with its rapid escalation of nuclear power generation, China could be uranium self-sufficient through at least 2030 using only currently-operating mines (Zhang and Bai 2015). Furthermore, these reserves are likely significantly under-estimated. Uranium exploration has only occurred in about one-third of China, despite its possession of geological characteristics associated with major uranium deposits elsewhere in the world.

Instead of pursuing intensified domestic uranium exploration and extraction, China's government is following the outsourcing strategy employed by other nuclear power producers with domestic uranium reserves (e.g., the U.S., Germany) since the 1970s. In line with the broader "Go Out Policy," China's state-owned nuclear entities have-been purchasing ownership stakes in foreign uranium mines as an energy security strategy since 2006 — the first year when China's domestic uranium demand began to increase faster than its domestic supply. Since 2008, only five countries have reported non-domestic uranium exploration and mine development expenditures: Canada, China, France, Japan, and Russia (NEA and IAEA 2016). Chinese investments have accounted for most of the non-domestic growth in the industry since 2012. In 2014, for example, $812.5 million in uranium mine development and exploration expenditures were reported globally, $753 million of which were made by China (NEA and IAEA 2016).

France was the next-largest investor with a mere $51 million. As of 2017, China's CGN and CNNC controlled nearly 10 percent of global uranium production (WNA 2017c), the majority of which (roughly 50 percent; see Zhang and Bai 2015) was in Namibia (detailed below). Today, China's overseas uranium holdings are estimated to be three times the size of its domestic proven reserves (Zhang and Bai 2015).

The Chinese government's decision to outsource uranium production is strategic for multiple reasons. First, it is an inexpensive time to invest in foreign uranium extraction. After reaching record highs during the "uranium rush" between 2007 and 2011, uranium prices have fallen to near-record lows in the wake of the 2011 Fukushima disaster. Second, domestic support for intensified nuclear power generation in China does not necessarily extend to intensified domestic uranium mining. As in the U.S. and Canada, uranium mining is controversial and environmentally destructive in China (Hu and Li 2012). While the CPC may be able to successfully characterize nuclear energy as "green," uranium mining poorly aligns with the rhetoric of Ecological Civilization. Finally, using foreign uranium for nuclear energy intensification enables the Chinese government to reserve domestic supplies for future energy security needs. Since the mid-2000s, around the time that Ecological Civilization was gaining traction within the CPC, China has based its uranium supply strategy in what is known as the "Three Thirds" rule: one-third from domestic supplies, one-third from ownership of foreign mines and joint ventures, and one-third from open market purchases (Chinese Academy of Engineering 2011). Domestic production, however, has only modestly increased since 2004.[78] As the Chinese government's ownership of foreign uranium mines increases, the share of foreign uranium powering its nuclear plants is also likely growing. I was unable to access precise

[78] Annual production was 712-885 metric tons from 2004 through 2011 and 1500-1616 metric tons from 2012-2016.

figures, but it seems unlikely that one-third of the uranium for China's nuclear power plants still comes from domestic sources.

Nowhere are the distributional, developmental, social, and ecological implications of China's nuclear energy rise more visible than in uranium's "commodity frontiers" (Moore 2000). These areas of marginal production — for reasons of cost, security, infrastructure, or efficiency — are clustered in Africa.[79] Namibia, which is home to the world's lowest-grade uranium deposits on which there is active mining, is one such frontier. Uranium concentrations are described in terms of "grades," which refer to the percentage of the orebody that is composed of uranium. There are four grade classifications: very high (20 percent or higher, e.g., Canada's McArthur River mine), high (2-19 percent, most commercial mines), low (0.1-2 percent), and very low (at or below 0.1 percent). Namibia's mines are in the latter category, ranging from a high of 0.05 percent to a low of around 0.02 percent. The grade of its Rössing's uranium mine is closer to common granite (3-5 ppm of uranium) than to high-grade ores (at least 20,000 ppm).

Despite these unfavorable geologic conditions, Namibia is the world's fourth-largest uranium producer and China's single-largest source of foreign uranium reserves. In addition to three currently-operating mines, it has three new mines scheduled to open in the next five years and dozens of active or in-process uranium exploration licenses. Its two largest mines —Husab and Rössing — are together capable of producing 10 percent of the world's current annual uranium production. Namibia's uranium industry has been bolstered by China's rising uranium demand both directly (through Chinese investments) and indirectly (through the impact of Chinese demand on uranium prices). Namibia's new Husab mine, which is scheduled to reach

[79] Uranium mining has occurred in or is planned for more than 30 African countries, including Botswana, the Central African Republic (CAR), the Democratic Republic of Congo (DRC), Gabon, Madagascar, Malawi, Niger, South Africa, Tanzania, Zambia, and Zimbabwe.

full production in late 2018 (see Chapter 5), is by far the largest foreign uranium source for China's state-owned China General Nuclear Power Corporation (CGN).[80] According to Chinese government data presented in Zhang and Bai (2015), Husab represented 71 percent of CGN's estimated overseas uranium holdings in 2015. Namibia is also the largest foreign uranium source for China National Nuclear Corporation (CNNC),[81] representing 35 percent of its estimated overseas holdings (Zhang and Bai 2015).

Projections that Namibia will soon become the world's second-largest uranium producer were a common refrain in my fieldwork. This outcome, however, was far from obvious when uranium mining began in Namibia in the 1970s during South African occupation. This chapter explains how the growth of Namibia's uranium industry is thanks to *geopolitics* as well as — or perhaps even more so than — geology. It was the determination of South Africa's apartheid regime to develop nuclear weapons, for example, that facilitated the construction of Namibia's first mine, Rössing, in 1976. Were it not for this geopolitical context, Namibia may not have developed a uranium industry at all. For more than three decades, Rössing remained Namibia's only uranium mine. By the early 2000s, with uranium prices declining globally, Namibian uranium appeared to be merely a fading legacy of apartheid and the Cold War in southern Africa. Instead, the 2007-2011 global "uranium rush," which was driven by Chinese demand, brought about a stunning resurgence in Namibian uranium. Geopolitics again played a critical role, but this time it was Namibia's good governance reputation and friendly historical relations with China that paved the way for uranium mining. The "rush" was cut short by the Fukushima

[80] As of 2015, CGN had an estimated 310 metric kilotons of estimated uranium (ktU) reserves outside of China. Just one Namibian mine — Husab — represented 220 ktU of that total. For additional data, see Zhang and Bai (2015). I discuss Husab in far more detail in Chapter 5.

[81] As of 2015, CNNC had an estimated 198 ktU in estimated foreign uranium reserves, 69 ktU of which were from two mines in Namibia: Rössing (52 ktU) and Langer Heinrich (17 ktU) (Zhang and Bai 2015).

disaster in 2011. Uranium prices dropped from $143 per pound of yellowcake in mid-2007 to $40 in mid-2011, falling 60 percent in 2011 alone. Just as had been the case in the early 2000s, Namibian uranium appeared bound for the "historical rubbish bin," as one of my industry interviewees described it (Interview K). Yet, Namibia's uranium industry has persisted. Despite persistently low uranium prices (near $20 in May 2018) in the aftermath of Fukushima and domestic geological (e.g., low uranium grades) and environmental (e.g., water scarcity) conditions that are far from the industry's ideal, Namibia is the world's fastest-growing uranium producer.

As explained in the duration of this chapter, the persistence — and, in fact, resurgence — of Namibia's uranium industry is inconceivable without China's nuclear rise. Reminiscent of South African investments in Namibia, China's investments in Namibian uranium are driven by state-based incentives (the bomb for South Africa, rapid nuclear energy intensification via nuclear SOEs for China) rather than commercial profitability.[82] The Chinese government's investments in Namibian uranium continue a broader history of global North countries outsourcing the negative externalities of accumulation (Coronil 1997) and consumption (e.g., e-waste; see Widmer et al. 2005) to the global South, but China's approach to Namibian uranium is also distinguished from these historical patterns by its ownership terms. Whether Chinese investments in Namibia represent a development opportunity for Namibia and Namibians — and *which* Namibians, living *where* — is the focus of Chapters 5 and 6. This chapter provides the historical basis for those discussions as well as empirical data on how China's nuclear ambitions are influencing the trend toward intensified uranium mining in commodity frontiers like Namibia.

[82] This could change, however, if uranium prices rise dramatically in the future.

4.3 The Geology of Nuclear Geopolitics

Uranium's geopolitical significance derives from the geological feature that endows it with social and political economic meaning — its radioactivity. Humanity's use of this radioactivity for nuclear weapons has made uranium one of the world's most important commodities in war and security. Today, as discussed in Chapter 3, that importance is being extended through its "clean energy" potential via nuclear energy. In this section, I explain how the materiality of uranium mining reflects both its geopolitics and its geology, regardless of whether warheads or nuclear energy are the output.

Radioactivity refers to the decay of uranium's unstable atomic nucleus into other elements over time. Uranium is the most atomically-unstable, naturally-occurring chemical element on Earth. Specifically, uranium-235 (U-235) is the only naturally-occurring isotope that is fissile, or capable of facilitating a nuclear fission reaction on its own. Its usefulness in nuclear energy and nuclear weapons, however, has been facilitated by human intervention. Without U-235, there would be no fission reaction, no atomic bomb, and no atomic age. Were it not for the conversion of uranium-238 (U-238) into plutonium-239 and the enrichment of mined uranium to increase its U-235 concentrations though, uranium might have remained a banal element. Prior to its nuclear application through the work of Antonine Becquerel, Marie Curie, and Pierre Curie, uranium was used as a coloring agent for glass, ceramics, skin, and photography. It was treated as a waste product of radium extraction as recently as the early 1900s (Burke 2017). Uranium's significance has only come to more closely suit its Uranus namesake in the past 80 years.[83] The

[83] German chemist Martin Klaproth named uranium after the Greek god of the sky in 1789 after isolating it from a silver mine sample. Previously, uranium had been referred to as pitchblende, its common host mineral (Burke 2017).

element now has just two major[84] uses: nuclear energy and nuclear weapons. Both are governed by the 1970 Treaty on the Non-Proliferation of Nuclear Weapons (NPT), as is uranium mining.[85] From 1942 to 1974, 50 percent of extracted uranium was for military use (Darmayan 2007). Today, nuclear power drives uranium mining. Given nuclear energy's efficiency, the 31 countries with reactors constitute a small market. Few metals are so limited in their applications.[86]

Although uranium's use for nuclear energy intertwines the environmental and the social, this binary remains persistent in the uneasy distinction between nuclear energy, with its outsized geopolitical implications, and uranium. The geopolitical significance of states with nuclear capabilities is painfully clear: nuclear weapons are the ultimate military trump card, and nuclear energy underlies both prestige and contemporary "green growth." The geopolitical significance of uranium producers, however, has not always been so obvious. Hecht (2009, 897) characterizes this historical distinction between nuclear powers and uranium-producing states as "nuclearity," or the "apparently immutable ontology [that] has long distinguished nuclear things from non-nuclear things." This distinction extends, as I discuss further in Chapter 6, to our understandings of which risks are "man-made" (i.e., "nuclear" risks associated with radioactivity from weapons

[84] Minor uses include medical imaging (e.g., MRIs) and protective garments and containers for radioactive materials. Due to its mass, depleted uranium can also be used in armor-piercing projectiles and armor (e.g., for Abrams tanks).

[85] The NPT divides the world into nuclear weapon states (NWS) and non-nuclear weapon states (NNWS). NWS include China, France, Russia (formerly USSR), the U.K., and the U.S. The NWS agree not to assist NNWS in acquiring nuclear weapons (Article I), while the NNWS agree not to acquire nuclear weapons (Article II) and to accept IAEA safeguards (Article III). Uranium-producing countries are also held accountable to IAEA protocol, the violation of which is an NPT violation. The oversight processes involved in navigating these regulations have led to a situation in which a relatively small number of buyers and sellers have outsized influence in the uranium market. This influence is magnified by IAEA regulations, which typically stipulate that only a particular mine's owners can purchase yellowcake from that mine.

[86] They include gallium, 98 percent of which is used in superconductor production and barium, which is used almost exclusively as an oil and gas well drilling fluid (Darmayan 2007).

and energy production) and which are "natural" (i.e., exposure to radiation through uranium mining). While Hecht (2012) focuses on the historical techno-politics of this distinction, my primary interest lies in how the geographies of nuclear energy reflect both the geology of uranium and its geopolitics. Specifically, I am interested in the implications of China's rise for where uranium is mined, under which conditions, and with what implications for whom. Uranium's materiality, including its distribution, mining, and processing, are key to these dynamics. After reviewing these features below, I turn to the specific characteristics of Namibian uranium in Section 4.4.

Distribution

The differential geopolitical significance accorded to uranium producers and uranium consumers reflects uranium's abundance and distribution. Many radioactive elements are present on Earth only in trace quantities. Uranium, by contrast, is the 51st-most abundant element in the Earth's crust. It is roughly as common as tin or zinc, forty times more abundant than silver, and five hundred times more abundant than gold. It is pervasive on all of Earth's continents as well as in the ocean. Given the geopolitical significance of nuclear energy, uranium's prevalence is surprising to many casual observers. This is true even in Namibia's uranium-producing Erongo region. That an element associated with such geopolitical power and prestige is so *common* often took a few moments to soak in during my focus groups and interviews.[87]

To be fair to my Namibian informants, most of the Earth's uranium indeed occurs in low concentrations of just a few parts per million. Granite, which comprises roughly 60 percent of the Earth's crust, contains uranium in concentrations of about 4 parts per million. At that grade,

[87] The disappointment with which many Namibians responded to this news supports Hecht's (2012) finding that uranium mining in Gabon also carries a sense of prestige, even if this is modest compared to the prestige of nuclear energy.

1,000 metric tons of ore would need to be mined to produce 4 kilograms of uranium (Zoellner 2009). Uranium concentrations are even lower in the ocean, where one million metric tons of seawater would be required to produce 2 kilograms of uranium.[88] Oceanic uranium could provide the world's entire existing electricity demand for 900 years if it became economically feasible (Garwin and Charpak 2002). In other words, uranium is a plentiful source of energy, pending suitable economic incentives and political agreements for its extraction.[89]

Although less pervasive, commercially-viable deposits of recoverable uranium at current prices are also relatively common. At least 81 countries have explored for uranium in their territories (NEA OECD 2016). Proven uranium reserves of commercial significance have been identified in 51 of those countries (WNA 2018c). This means that there are fewer major uranium consumers (31) than potential producers (51). Uranium's efficiency in electricity generation compared to other fuels further mitigates supply concerns. At current usage, the world's proven uranium reserves, assuming no additional discoveries, would last at least 90 years (NEA OECD 2016). This is a greater level of assured resources than exists for fossil energy sources and many minerals.

Current supply is more concentrated due to uranium's constrained market and insufficient economic incentives for intensified exploration. Twenty-one countries have active uranium mines. Since 2008, 80 percent of the world's uranium supply has come from just five countries: Kazakhstan, Canada, Australia, Niger, and Namibia.[90] When it comes to uranium reserves, nine

[88] Oceanic uranium would need to be separated from phosphate deposits. This is why marine and on-shore phosphate mining presents radioactivity issues. For more on phosphate mining risks, see Gnandil et al. (2006).

[89] This also applies to the relative rarity of "breeder reactors" capable of producing their own fuel. In addition to proliferation concerns, uranium's prevalence and current low prices make them commercially unattractive.

[90] In 2016, the top uranium producers were Kazakhstan (39 percent), Canada (22 percent), Australia (10 percent), Namibia (6 percent) and Niger (5.5 percent) (WNA 2017c).

countries represent 87 percent of the world's known conventional resources: Australia (29 percent),[91] Kazakhstan (13 percent), Russia (9 percent), Namibia (8 percent), Canada (7 percent), South Africa (6 percent), Niger (6 percent), Brazil (5 percent), and China (4 percent) (IAEA 2016). Actual uranium reserves are likely far more extensive. The IAEA (2016) estimates that actual uranium reserves are more than double known conventional resources. Uranium mining has simply not been consistently profitable enough to promote extensive exploration in the many locations likely to host uranium deposits. Uranium supply is dynamic; as prices rise, so will reserves. A 2016 report by the NEA and IAEA anticipates that a doubling of uranium prices from current levels would increase commercially-recoverable uranium reserves tenfold due to increased economic profitability and thus exploration.

In addition to a vast, relatively cheap supply, uranium's distribution offers energy security advantages for would-be consumers. Most of the world's uranium production has occurred in politically-stable countries, including Canada, Australia, and the U.S. Uranium's geopolitically-friendly distribution over the past eighty years is akin to that of coal or natural gas. Thanks to its distribution and the characteristics of uranium extraction, processing, and transport (discussed below), supply distributions have been far less common in the uranium industry than in the oil industry. Uranium's prevalence also makes collusion among mining countries unlikely. The geography of uranium mining is changing though, with a pronounced shift from the West to Africa and Central Asia (see Chapter 3). As a result and as detailed later in this chapter, political stability in potential producers (including Namibia) is becoming increasingly important as a complement to geological availability.

[91] Australia is one of the world's most-explored uranium exporters, so it likely has fewer undiscovered resources than other countries on this list.

Mining Processes[92]

Excluding its geopolitical scrutiny and radioactivity, uranium mining is similar to many other types of hard-rock mining. Uranium occurs in a wide range of rock types, including sandstone, granite, and volcanic rocks, and is hosted in a variety of minerals, most notably uranite. Given its pervasive nature, the radioactivity of uranium and its co-occurring elements (e.g., radium) is an asset in exploration. Uranium deposits — and their quality — are identified by the radiation they release, with higher radiation levels associated with higher grades. Today, this exploration is typically done via plane through gamma-ray spectrometry. The greatest challenges in uranium extraction relate to its radioactivity, which presents risks for miners and local communities (see Chapter 6), and its density, which is nearly twice that of lead.

Most uranium is extracted as by-product or co-product of other types of mining. These combined operations have a tremendous commercial advantage given the limited market for uranium and its abundant supply. Uranium is a by-product, for example, of copper mining in Australia's Olympic Dam, phosphate mining in Morocco and Florida, and vanadium mining in the U.S. Southwest. Some uranium operations even rely almost exclusively on the re-processing of waste tailings from other mining. During the height of the gold rush on South Africa's Witwatersrand, for example, 10 to 100 tons of uranium were mined for each ton of gold. The resulting tailings (unused material) are now being re-processed to extract their uranium.

Uranium mining takes four forms: open pit, underground, in-situ leaching (ISL), and heap leaching. The former two methods are considered "conventional" and represent about 55

[92] Information that is not specifically cited in the remainder of this section comes from interviews with uranium industry representatives and multiple visits to the Mining Museum, Library, and Archive at Namibia's Ministry of Mines and Energy in Windhoek. I also consulted Hecht (2012), IAEA (2015), WNA (2015a and 2016b), Winde, Brugge, Nidecker, and Ruegg (2017), Burke (2017), the Bureau of Geology and Mineral Resources of New Mexico (2018), and the U.S. Nuclear Regulatory Commission (2018) to verify information from interviews and archival research. I have included specific source and/or interviews for unique information verified by only one source.

percent of all uranium mining. Open-pit mining is preferred when uranium ores are relatively superficial, as it is the least-expensive extraction method. All of Namibia's uranium mines are open pit. In open-pit mining, soils and non-valuable rock (called "overburden") are removed through drilling and dynamite blasting to gain access to the underlying uranium-containing ore. The exposed ore is then blasted further to facilitate excavation using haul trucks. After blasting, the ore is processed to remove the uranium. Waste rock materials are typically stored near the open pit as tailings. Underground mining, by contrast, uses drilling and blasting to loosen ore from underground tunnels. The removed ore is then transported to the surface for processing.

Non-conventional methods are increasingly used alongside or in place of conventional mining. ISL is a newer extraction method that was not widely implemented until the 1990s. It is used when uranium occurs in porous material (e.g., gravel, sand). Depending on national regulations, ISL involves pumping a carbonate water-based solution or sulfuric acid into the ground using injection wells. This dissolves uranium under the ground. The uranium-containing liquid is then pumped to the surface and treated to extract the uranium. ISL is currently used in Canada, the U.S. (where it represents 90 percent of uranium mining), Australia, Kazakhstan, Russia, China, and Uzbekistan. Although it presents risks to aquifers, it is considered less environmentally-destructive and risky to employees than conventional extraction.

The final method, heap leaching, applies technology similar to ISL to surface extraction. It is typically used at superficial and/or very low-grade deposits, including in Namibia, as well as at mines nearing their operational end. In heap leaching, crushed ore is piled on thick plastic covering a flattened area of land with a modest gradient and a superficial layer of sand, silt, or clay. The ore is irrigated with sulfuric acid (Figure 4.3.1) for 30-90 days to break uranium's chemical bonds with the host rock (i.e., granite in Namibia). The resulting uranium-containing

slurry filters into ponds that are pumped and treated at on-site processing plants to separate the uranium from the acid. Heap leaching has significant environmental risks and is relatively inefficient; only about 70 percent of the uranium is extracted from the leached ore.

Figure 4.3.1. Acid tank for heap leaching at the Rössing uranium mine

Processing for Nuclear Fuel

Mined uranium takes two isotopic forms: U-235 (92 protons, 143 neutrons) and U-238 (92 protons, 146 neutrons). While uranium is abundant on Earth, only U-235 is fissile. Nuclear energy requires a fissile uranium concentration of 3.5 to 5 percent, significantly above the average concentration of U-235 in mined uranium (~0.72 percent). Turning mining uranium into nuclear fuel typically requires multi-step and typically multi-country processing.

The first processing step in open-pit or underground mining is separating uranium ore from the surrounding host rock. At Namibia's Rössing mine, haul trucks remove blasted uranium ore from the mine. Each haul truck's uranium concentration is evaluated using a drive-through gamma-ray spectrometer. Truckloads with radiation levels below that needed for profitable processing are dumped as waste or stored for heap leaching. Un-used material separated during

the milling process is stored as tailings (Figure 4.3.2). The volume of tailings produced depends on the uranium's grade. The lower the grade, the greater the tailings volume. At a concentration of 0.1 percent, for example, 1,000 tons of waste are produced to extract one ton of uranium.

Figure 4.3.2. Tailings at the Rössing uranium mine

Truckloads with suitable uranium concentrations are transported to crushing, leaching, and milling plants for processing. Referred to as "purification," these processes are typically performed on-site due to the substantial volume of tailings (including rock slurry) produced. During purification, water is added to the crushed ore to prepare it for chemical leaching. Acid is sprayed on the ore to separate the uranium, about 95 percent of which can typically be removed. The uranium is then milled to form a dry uranium oxide powder known as "yellowcake." Yellowcake (Figure 4.3.3) is typically 80 percent uranium. It is transported in 55-gallon drums to conversion and enrichment facilities. At this stage, uranium is still treated as an "ordinary, profit-generating commodity" (Hecht 2012, 55).[93] While subject to IAEA regulations regarding its sale, yellowcake is defined primarily by its "natural" origins rather than its nuclear potential.

[93] For a more detailed account of the production of the uranium market, see Chapter 2 in Hecht (2012).

Figure 4.3.3. Yellowcake display at the National Earth Science Museum, Windhoek[94]

Uranium gains its "nuclear" status through conversion and enrichment, processes that are far more concentrated than mining in geographic terms. To reach the 3.5 to 5 percent fissile uranium concentration of nuclear fuel, yellowcake must be converted into uranium tetrafluoride and then hexafluoride prior to enrichment. Only Canada, China, France, Russia, and the U.S. have known conversion plants. Unsurprisingly, China's conversion capacity is rising faster than that of any other country (WNA 2017d). After conversion, the uranium needs to be enriched. Enrichment is a complex and time-consuming process, even for U-235 concentrations well below those required for weapons (>20 percent).[95] The most-common enrichment process uses centrifuges to separate uranium into U-235 and U-238.[96] One ton of yellowcake is required to produce roughly 255 pounds of uranium hexafluoride at a 5 percent U-235 concentration (Biello 2009). At this final stage, uranium is remarkably efficient. One pellet of uranium fuel, which is

[94] The yellow-colored matter at left is yellowcake from Langer Heinrich. The green-tinted matter in the two bottles at right is also yellowcake, but it is from Rössing. It has a non-yellow color due to its unique chemical composition.

[95] Enriched uranium is typically classified as weapons-grade when its U-235 concentration reaches 20 percent, but most nuclear bombs have cores that are overwhelmingly U-235. Modern warheads typically have U-235 concentrations of greater than 90 percent. Six months were required to produce the 64 kilograms of enriched U-235 for the Hiroshima bomb (80 percent U-235) at an enrichment plant that cost $1.1 billion (DeGroot 2004).

[96] Gaseous diffusion can also be used, but these plants are much more energy-intensive. South Africa's enrichment plant during apartheid used gaseous diffusion because of the country's vast coal resources, which could be cheaply mined under the apartheid labor system.

roughly one centimeter long with a one-centimeter diameter, generates as much energy as 149 gallons of oil, 17,000 cubic feet of natural gas, or one ton of coal (University of Michigan 2017).

Despite the multi-stage process required to take uranium from ore to nuclear fuel pellet, uranium's fuel generation costs (which include mining, processing, conversion, and enrichment) — and uranium mining in particular — are a small portion of the total cost of nuclear energy. Conversion and enrichment (termed "processing") account for roughly 88 percent of nuclear fuel generation costs, while mining represents the remaining 12 percent (Darmayan 2007). By contrast, drilling/mining accounts for roughly 58 percent of fuel generation costs for coal power and 67 percent of fuel generation costs for oil power (Darmayan 2007). In the end, uranium mining constitutes only 2-4 percent of nuclear energy's lifetime costs (Zhang and Dai 2015). Nuclear reactor construction, by contrast, accounts for 75 percent of the total cost of nuclear energy (Darmayan 2007). This situation means that uranium prices have far less influence on decisions to pursue nuclear power than do fossil fuel prices. Low uranium prices rarely catalyze nuclear power development. Yet, uranium demand is almost entirely dependent on the nuclear industry. With few outlets for overproduction beyond government stockpiling, uranium is a buyer's market.

4.4 The Materiality[97] of Namibian Uranium[98]

The characteristics described above are not the only factors shaping uranium mining's materiality. The contexts of extraction, including multi-scalar historical, social, geological, and

[97] For a definition of my use of materiality in this chapter, see page 114.

[98] Information on the history of Namibian uranium mining comes from visits to the Ministry of Mines and Energy archives, library, and museum as well as visits to mining sites and local mining museums and notes from interviews with government officials and industry representatives. I have cross-checked this information data from the NEA and the IAEA (2016) and other sources as appropriate. Any information unique to a particular source is cited accordingly.

environmental characteristics, also play a crucial role. In this section, I describe the history, geography, and geology of Namibia's uranium industry and identify its major actors. These details provide the foundational context for the analysis that follows in Chapters 5 and 6.

The roots of Namibian uranium mining date to the early 1900s, when colonial German geologists identified uranium deposits near Namibia's Rössing Mountain. German Captain G. Peter Louw[99] conducted further exploration in 1928 with the encouragement of the South African government. Despite Louw's extensive attempts to market Rössing as a mining site for radium, a then-higher-value element that could be extracted from uranium, exploration remained ad hoc until South Africa's Anglo American Corporation conducted more systematic prospecting in the 1950s. By the mid-1960s, extensive exploration was underway at the behest of the South African government. Three major deposits were identified: Rössing, Trekkopje, and Langer Heinrich. Rio Tinto's South African subsidiary acquired rights to the Rössing deposit in 1966. Bulk sampling and pilot testing were completed in early 1973, after which mining began in 1976.

Since that time, Rössing has mined over one billion tons of rock and produced 80,000 tons of yellowcake. It is the world's only active granite-hosted uranium mine, a characteristic that makes it one of the world's least efficient uranium mines and limits its potential to produce other minerals/elements.[100] Rössing is also the world's longest continuously-operating open-pit uranium mine and one of the world's three largest open-pit mines. Rio Tinto Group, a primarily British-Australian multinational with a 12 percent Aluminum Corporation of China (Chinalco) stake (purchased in 2008),[101] is Rössing's primary shareholder with 69 percent ownership. The

[99] The site of Louw's exploration is today the landing strip of the Rössing mine.

[100] Most uranium deposits occur in association with secondary mineralization (i.e., the uranium has leached out and formed a separate secondary accumulation, like a riverbed). Rössing, by contrast, is a primary orebody.

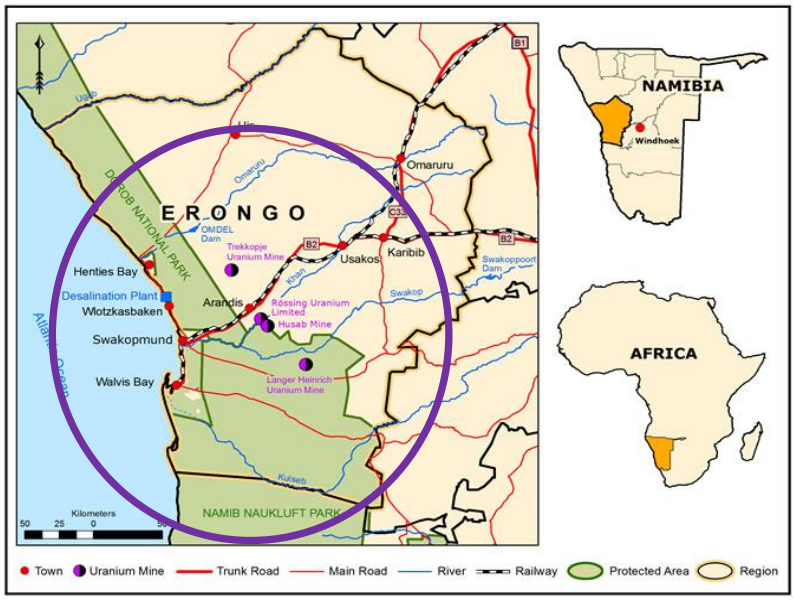
[101] China's state-owned Aluminum Corporation of China (Chinalco) bought a 12 percent stake in Rio Tinto in 2008. Chinalco's share of Rio Tinto's uranium production is managed by CNNC.

remaining shares are held by the Iranian Foreign Investment Company (15 percent), Industrial Development Corporation of South Africa (10 percent), the GRN (3 percent), and 13 small shareholders (3 percent combined).

Three additional uranium mines have been built in Namibia since 2011: Langer Heinrich, Husab (formerly called Rössing South), and Trekkopje. Langer Heinrich, which opened in 2006, is owned by Australia's Paladin Energy (75 percent) and, since 2014, the Chinese state-owned CNNC (25 percent). Husab is owned by the Chinese state-owned CGN (90 percent), with a 10 percent share for the GRN's Epangelo Mining Company (see Chapter 5). Husab, produced its first drum of yellowcake on December 30, 2016, and is expected to become the world's second-largest uranium mine when it reaches full production capacity in late 2018. The only mine without a current Chinese government stake, Trekkopje, is owned by France's Areva. Areva completed construction on Trekkopje in 2011, but the mine never commenced commercial production due to the uranium price crash following Fukushima. It is currently under a $10 million per year care and maintenance program.

Although uranium exploration is underway in several of Namibia's regions, the Erongo region (Figure 4.4.1) is the undisputed center of Namibia's uranium industry. Its nickname, including in official documents, is the "uranium province." Erongo hosts all four of the mines listed above. Rössing and Husab are roughly 40 miles east of Swakopmund, Trekkopje is just over 43 miles northeast of Swakopmund, and Langer Heinrich is just under 50 miles east of Walvis Bay. Figure 4.4.1 shows the location of all four mines in relation to the cities of the Erongo region.

Figure 4.4.1. Fieldwork area in Erongo Region, Namibia (Map: Rössing Uranium 2017)



Erongo is sparsely populated due to its Namib Desert location. Most of its 180,000 residents live in two coastal cities: Swakopmund (population ~50,000), which serves as the headquarters for most uranium mines and exploration companies, and nearby Walvis Bay (population ~70,000), which is Namibia's second-largest city. As the country's largest (and only deep-water) port, Walvis Bay is also Namibia's primary uranium transportation hub. In addition to these two cities, Arandis served as my third research base in Erongo region. A town of 8,000 that calls itself the "Uranium Capital of the World," Arandis hosts many lower-level uranium workers. It was established as a private Rio Tinto company town in the 1970s, but it has been publicly-accessible since 1994. Most of the higher-level managers employed in Namibia's uranium mines live in Swakopmund, a city with far greater cultural and tourism opportunities and better social services than Arandis. Mine operators typically provide bus transportation to and from the mines for employees in both locations. Husab also has an on-site employee village, but I was not permitted to visit it.

The materiality of Namibian uranium is shaped by its social context — including the low population density of the surrounding area — in combination with the characteristics of its uranium deposits. Three of those characteristics are particularly important: grade and mineral co-occurrence, superficiality, and environmental context. Low-grade ores like Namibia's are exceedingly difficult — and costly in environmental and economic terms — to extract. The poor economics of Namibian uranium are compounded by the deposits' unusually isolated occurrences. Namibian uranium does not occur in combination with other deposits of significant value, such as gold. As a result, it has not been possible to offset the economic inefficiency of its mines (historically or currently) through simultaneous extraction for another element or mineral. Rössing's situation is even worse in economic terms due to its unusually high calcium concentrations, which require large quantities of acid for leaching and make extraction of uranium from large sections of the ore completely infeasible.

Although only 20 percent of all uranium mining in the world uses open-pit mining, all of Namibia's mines are open-pit. The superficiality and low-grade of Namibia's deposits make inexpensive open-pit mining the preferred extraction method. Namibia's uranium deposits also occur in areas with very low population densities and minority populations, which makes open-pit mining less likely to catalyze local opposition (see Chapter 6) than mines in China or other more populated locations. Thanks to these conditions, Namibia produces more open-pit uranium than any other country in the world (NEA 2016).

The scale of Namibia's mines is difficult to fathom via text. Figure 4.4.2 shows Rössing's open pit as viewed from its southern edge in 2015. The pit is roughly 3.1-by-1.3 km^2 (1.6 $miles^2$), with a depth of 350 meters (1,148 feet). Less than half of pit's total area is visible in Figure 4.4.2, but this zoomed-in photo makes it possible to see some mining equipment. Haul

trucks (one is circled in red) are barely visible on the wide terrace to the right. For scale, figure 4.4.3 provides a closer view of a haul truck as well as a haul truck bed in front of one of Rössing's busses and several people.

Figure 4.4.2. Open pit at Rössing mine (*circled at center right,* haul truck)

Figure 4.4.3. *Left,* load truck and *right,* load truck haul bed at Rössing mine

Aerial views are useful to understand the scale of Namibia's mines in the context of the surrounding desert. In Figure 4.4.4, Rössing's open pit is the white area near the center of the purple circle, which represents the entirety of the mining site. The total license area is 180 km^2

(69.5 miles^2), roughly 21 km^2 (8.1 miles^2) of which is currently in operation. Tailings are easily visible, as are roads to facilitate their transport. Processing facilities are northeast of the pit. Swakopmund is visible 40 miles away at the bottom left, as is Arandis (near the top of the purple circle). The under-construction Husab mine is circled in green. Langer Heinrich, which is located south of Husab, is not visible in this image, nor is Trekkopje to the northeast of Rössing. Figure 4.4.5 on the next page presents a zoomed-out view with all four major mines identified: Rössing (purple), Husab (green), Trekkopje (red), and Langer Heinrich (orange). Namibia's capital of Windhoek is visible 158 miles east of Swakopmund at this scale. Rössing's open pit remains clearly visible.

Figure 4.4.4. ***Circled,*** **Rössing uranium mine and surrounds (Image: Google Earth 2018)**

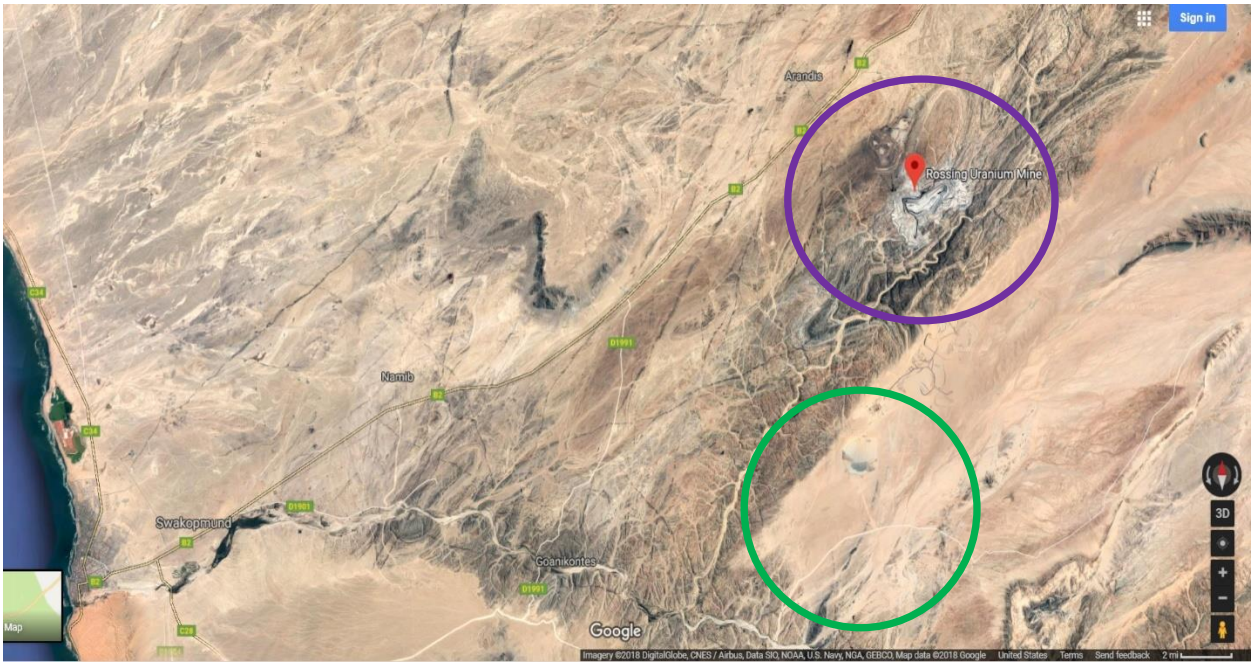
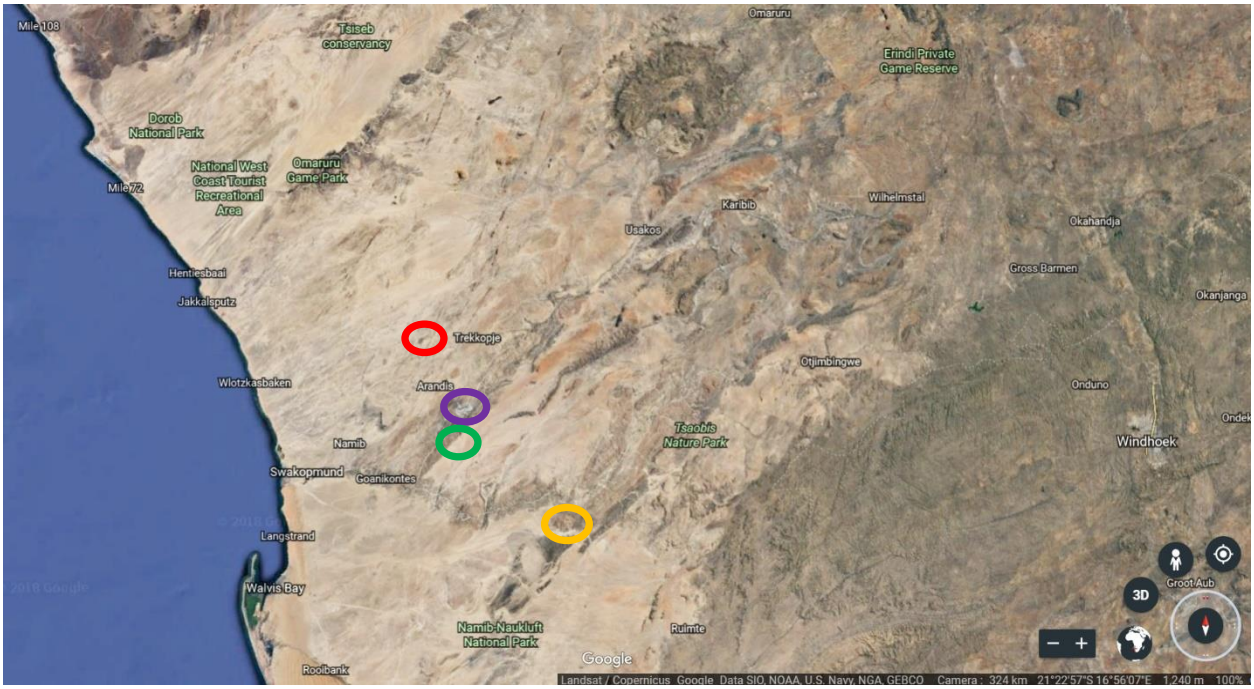


Figure 4.4.5. ***Circled,*** **Namibia's four uranium mines (Image: Google Earth 2018)**



In addition to open-pit mining, Namibia's uranium is also extracted using heap leaching for both geological and economic reasons. Varieties of heap leaching are used at all four Namibian uranium mines.[102] In addition to facilitating low-grade extraction, heap leaching is the cost-saving measure that makes Namibia's low-grade deposits viable. It is far less expensive than other forms of uranium mining. Heap leaching is environmentally-risky everywhere, but those risks are concentrated in a sparsely-populated area in Namibia. As a result, they are less likely to catalyze significant social opposition.

While the low population density of rural Erongo reduces instability risks for the uranium industry, the economic and physical challenges of extracting Namibia's low-grade deposits are aggravated by their desert location. Most of Erongo falls within the arid Namib, the world's oldest desert. The Namib runs Namibia's length from the coast to 90 miles inland. It has four

[102] Rössing uses dynamic acid leaching, Langer Heinrich uses alkali leaching, Trekkopje uses heap leaching, and Husab uses both dynamic acid and heap leaching.

main rivers (Kuiseb, Swakop, Omaruru, and Ugab), all of which are ephemeral and rarely reach the ocean.[103] Annual rainfall averages less than five inches, with coastal locations receiving less than half an inch.[104] Gale-force winds easily capable of moving mine tailings are common in winter. Temperatures are consistent across seasons, averaging 74ºF in the summer and 67ºF in the winter. As is typical in desert environments, however, there is significant daily temperature variation. Temperatures can reach as low as 30ºF and as high as 115ºF.

The combination of low grades and open-pit designs in a high-wind, desert environment also makes Namibia's uranium mines particularly water-intensive. Uranium is a water-intensive industry even in the best geological and environmental conditions. The lower a uranium deposit's grade, the larger the volume of water and leaching chemicals required to extract the uranium. These water requirements are aggravated by the open-pit design of Namibia's mines, which necessitates heavy water use for dust suppression. Open-pit mines produce far more dust than underground mines, which is a threat to environmental and human (see Chapter 6) health. All of the above water requirements are further increased in the arid Namib desert. Erongo has only 7 percent of Namibia's total population, but it represents 15 percent of Namibia's annual water consumption. Its four uranium mines account for roughly 65 percent of the region's water usage (Interview L, NamWater official). The unusually high volume of water required to extract Namibian uranium has also significantly reduced regional aquifers (Wippel and Suchanek 2009; discussed further in Chapter 6).

[103] The Omaruru, for example, reaches the coastal Omdel dam, which provides water for uranium mining, every second year on average. The Swakop reaches the ocean about every fourth year. See Heyns and van Vuuren (2009).

[104] Rainfall is, however, complemented by a unique coastal fog system that provides moisture to several locally-endemic plants and animals, including the famous *Welwitschia mirabilis* that can live for upwards of 1000 years.

Because sufficient water is no longer locally available, Namibia's uranium mines pipe water upwards of 60 miles from regional ephemeral rivers and aquifers and a coastal desalination plant.[105] The desalination plant, Namibia's first, was built by France's Areva in 2010 for the Trekkopje mine. Capable of providing up to 20 million cubic meters of water/year (45 million with expansion), it is southern Africa's largest seawater desalination plant. Most of its water is sold to the new Husab mine. It also provides a small volume of water to the inactive Trekkopje mine for maintenance and a larger volume to drought-stricken Swakopmund through a contract with the GRN's NamWater. Despite Trekkopje mothballed status, Areva has not sold its desalination plant because it is profitable. In a 2015 interview with *The Namibian,* Hilifa Mbako, then Managing Director of Areva Resources Namibia, said,

> [D]esalination will always be profitable no matter what the circumstances are. Areva is not compelled to sell the plant…The only way mines can operate is to get desalinated water. With regards to the lack of water in the region and the growing demand, desalinated water is the only option. Water is therefore serious business. (Hartman 2015)

All of Namibia's uranium mines have had to modify production and/or construction due to water shortages, which are becoming more common due to the increasing frequency and intensity of drought in the region. In May 2018, Erongo Governor Cleophas Mutjavikua announced plans for a second desalination plant funded by Israeli private investors.[106] Rössing also plans to build its own plant, although this appears to be on hold given low uranium prices. Water infrastructure for uranium mining has significantly affected Namibia's landscape, as has electricity provision (discussed in Chapter 6). The pipeline in Figure 4.4.6 transports water from coastal aquifers to Rössing and Langer Heinrich. Rössing mine tailings are visible in the background.

[105] The largest water sources are the Kuiseb River (~8 million cubic meters/year), the desalination plant (~8 million cubic meters/year), and the Omdel dam (~3 million cubic meters/year).

[106] The plans include a "green scheme project" for the desert following Israel's model — a topic for another time.

Figure 4.4.6. Water pipeline for uranium mining, with tailings in background

If Namibia is an economically-inefficient and environmentally-risky source of uranium, how did it come to have a uranium industry in the first place, let alone one of the world's largest? Pred and Watts (1992, 11) argue that "how things develop depends on *where* they develop, on what has been historically sedimented there, on the social and spatial structures that are already in place there." Namibia's uranium industry has been shaped by how trends in global nuclear geopolitics have intersected with its domestic context. The following section explains how Namibia's uranium industry came to be, focusing on how its relatively unappealing geological and environmental context has been complemented by its place in geopolitics.

4.5 Placing Namibian Uranium in Historical Geographies of Uranium Mining

Scholarship on resource politics and the political ecology of extraction has called for investigating how natural resources are discursively and materially produced and secured within local, national, and global political economies (Ferguson 2006; Le Billon 2008; Vasudevan, McFarlane, and Jeffrey 2008; Peluso and Vandergeest 2011; Vélez-Torres 2014), including for energy production (Fischhendler, Boymel, and Boykoff 2016). Securing uranium has historically

been a high priority for international governmental bodies like the United Nations (UN) as well as for private companies and national governments. I have already mentioned the NPT, which, through the IAEA, seeks to ensure the securitization of uranium and its use. These efforts have received significant academic coverage (Hecht 2012; Kemp 2012; Busch 2015; Asuelime and Adekoye 2016; Burke 2017). I want to focus instead on the geopolitical, economic, and environmental trajectories of efforts to secure sources of uranium and how they have aligned to make Namibia a major uranium producer despite its less-than-ideal geological and environmental conditions.

World War II and the Early Cold War: The Drive for Self-Sufficiency and South Africa

During the early days of the nuclear weapons industry, uranium was assumed to be a rare element. Supplies and sales contracts were treated as state secrets, and desires for nuclear self-sufficiency catalyzed extensive searches for domestic reserves in nuclear powers (Hecht 2012). Perceptions of scarcity also drove efforts to secure contracts with countries with known uranium deposits, including South Africa, to ensure that uranium remained controlled by the West rather than by the USSR. By 1945, U.S. Lieutenant General Leslie Groves, who directed the Manhattan Project, thought that the U.S., through the Combined Development Trust, had achieved control over 97 percent of the world's uranium (Zoellner 2009; Burke 2017).

These early portrayals of uranium as exceptionally rare were, of course, mistaken. By the mid-1950s, it had become clear that, while higher-grade deposits were relatively rare, lower-grade uranium deposits were pervasive. Several countries were soon mining their own uranium for nuclear weapons development, including the USSR (Holloway 1996) and, in subsequent years, China, South Africa, India, and Pakistan. It also became clear during this time that "[t]he real challenge lay not in *finding* ore but in *processing* it to weapons-grade quality" (Hecht 2012:

28). Still, concerns with the ability of uranium mining to keep up with global demand lingered in the industry. As the Cold War intensified, mining became concentrated in the West (e.g., the U.S., Canada) and in Soviet states (e.g., Kazakhstan, Russia). In the West, uranium mining primarily occurred in the resource-rich Western U.S., the Australian states of Northern Territory and South Australia, and Canada's Saskatchewan province. Mines often overlapped with indigenous territories and employed indigenous populations. The U.S. was the world's largest uranium producer from 1953 to 1980, with peak production occurring in 1960 (Finch et al. 1973). Soviet uranium mining, meanwhile, often used forced labor in Siberia, the Ural Mountains, and East Germany (Holloway 1996; Zoellner 2009; Biswas 2014; Voyles 2015).

As it became clear that uranium was more widely-available than initially thought, exploration elsewhere intensified or began in earnest, including in Namibia. Like the role played by nature-exporting states in the development of capitalism (Coronil 1997), uranium-exporting states in the global South were essential to the development of nuclear powers in the global North despite their relatively small proportion of global production. The Shinkolobwe mine in what was then the Belgian Congo, for example, supplied uranium for both atomic bombs dropped on Japan. African countries were deemed fundamentally separate, however, from the nuclear geopolitics of Cold War powers (Hecht 2012). Per this logic, African states were suppliers of uranium, but they were not "nuclear states." Namibia's uranium industry was shaped by this geopolitical distinction between uranium producers and nuclear states, which manifested in South Africa's nuclear ambitions. With U.S. support, South Africa began to pursue nuclear power generation in the 1940s and 1950s (Von Wielligh and Von Wielligh-Steyn 2015). By the mid-1950s, those ambitions had turned to nuclear weapons. Many in South Africa's government saw nuclear capabilities as a means for defending its sovereignty while increasing international

respect for it as a modern industrial state rather than a backwards, mining-dependent African country. Hecht (2012, 81) refers to this drive as "nationalist modernism," but it was paired with a growing sense that opposition to apartheid meant South Africa might soon be on its own geopolitically. South Africa's pursuit of nuclear weapons intensified after the 1960 Sharpeville massacre, which catalyzed the UN Security Council's call for the end of apartheid.

As its ambitions escalated and international support dwindled, South Africa's leaders became concerned that its existing uranium mines could not produce sufficient uranium to operate its nuclear reactor in the long term, let alone facilitate weapons-grade enrichment. They turned to Namibia. Anglo American Corporation had begun uranium exploration at Rössing in the 1950s, but poor economic prospects ended its efforts (Eriksen and Moorsom 1989). By the 1960s, South Africa's uranium drive had intensified enough to make commercial viability less important. Ignoring the UN General Assembly's 1966 termination of South Africa's 1919 League of Nations mandate over Namibia, South Africa turned to its neighbor to fuel its nuclear sovereignty. Rio Tinto South Africa obtained the rights to Namibia's Rössing deposit in 1966, with effective voting control in South African hands and supplies for the South African government included in the contract (Freeman 1992). The mine began operations in 1976, with its uranium bound for nuclear weapons development in the U.K. as well as in South Africa.[107]

1970s-1990s: Radioactive Outsourcing, Rössing, and Namibia's Liberation Struggle

While the development of uranium mining in Namibia was catalyzed by South Africa's nuclear drive, it was also part of a broader shift. By the 1970s, the geography of uranium was changing. Major Western producers faced growing domestic pressure over environmental, justice, and health concerns related to uranium mining, nuclear weapons testing, and nuclear

[107] Additional buyers of Rössing uranium during these early years included Japan and Germany.

energy (Brugge and Goble 2002). Governments strengthened their regulations in response. The U.S. implemented basic occupation health and safety regulations for uranium mining and nuclear testing in 1971 (Dawson and Madsen 2007). In Australia, the Movement Against Uranium Mining, which was founded in 1976, staged a series of high-profile demonstrations protesting uranium mining (see McCausland 1999). The Australian government responded by implementing a nearly 25-year ban on new uranium mines in 1977. With domestic production declining and subject to growing opposition, formerly self-sufficient nuclear countries pursued the import-dependent sourcing model long used by France in relation to its former African colonies. Namibia was one such source of imports. Barbara Rogers (1980, 17-18), a former British foreign officer and anti-apartheid activist, noted that, in contrast to the "multi-million-dollar settlements…recently made with the Aborigines in Australia and the Eskimos in Canada…[i]n Namibia, the minerals are plundered with no attempt at an agreed compensation settlement with the Africans."

The reorientation of uranium mining toward the global South became more pronounced as uranium price declines reinforced the need to cut compliance costs associated with labor and environmental laws and higher-grade deposits were depleted. After reaching what was then an all-time high in the 1970s, uranium prices declined throughout the 1980s and 1990s. Prices eventually reached an all-time low of $7.10 per pound of yellowcake in December 2000. Several factors drove declining prices, including technological advances (e.g., more efficient centrifuge technology to replace gaseous diffusion enrichment) and the rising prominence of anti-nuclear movements. With no global regulatory body to oversee mining practices, political pressure and domestic regulations were the only substantive constraints. The result was a "regulatory race to the bottom," particularly within Africa (Hamby 2016, 14-19).

Unlike today, when it enjoys a "good governance" reputation, Namibia's comparative advantage in uranium production during the 1970s did not lie in public relations. In 1974, the UN Council for Namibia issued Decree No.1 on the Protection of the Natural Resources of Namibia. Issued just prior to Rössing's 1976 opening, it banned the extraction and export of Namibian resources without explicit permission. Damages were to be made payable to the future government of an independent Namibia. While the U.S., the U.K., and Japan, among others, did not accept the decree as binding, it brought Rössing's operations into the broader debate over Namibian independence. Yet, despite its debatable legality, the mine offered two advantages that were increasingly hard to find for uranium import-dependent countries like the U.K. First, unlike uranium imported from Canada, there was no national requirement that uranium produced in South Africa (including Namibia) be used for peaceful purposes (Bauer 1998). Second, Namibia's occupation by South Africa meant its labor system operated under the "low-cost system" of apartheid. With rising pressure to cut costs, the South African government and Rio Tinto's ownership framed this situation as a commercial advantage (Hecht 2012).

Namibia's low labor costs, enforced by the South African Police presence at Rössing (Hecht 2012), were an antidote to its relatively poor geology. In the words of one Namibian uranium miner who worked at Rössing under apartheid, "they could not have done it [made money mining uranium] otherwise" (Interview J). Apartheid made commercial sense out of Namibian uranium. As Hecht (2012) describes in greater detail, South African leaders sought to de-politicize apartheid labor by declaring "the market" to be a neutral space in which "politics had no place" (86) and by cloaking the apartheid labor system in the language of "South African conditions" (90). In his 1970 Parliament speech, for example, South African Prime Minister B.J. Vorster argued that "under South African conditions, a large scale plant [for enrichment] can be

competitive with existing plants in the West…South Africa does not intend to withhold the considerable advantages inherent in this development from the world community" (Vorster 1970; cited in Hecht 2012, 91). In cheap uranium, South Africa's government framed itself as offering a capitalist public service.

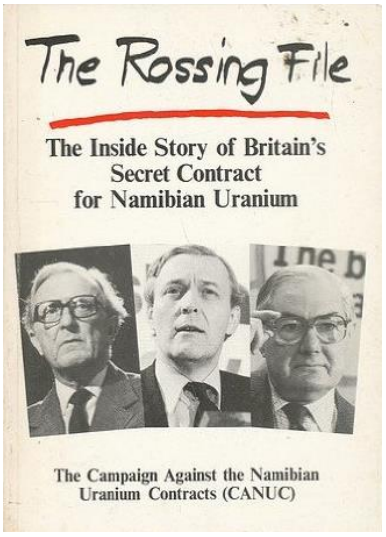
Rio Tinto initially managed to portray itself as a force for good in this context by arguing that it was providing its black employees with opportunities otherwise unavailable under apartheid.[108] In 1978, it established the Rössing Foundation to promote its reputation as a good corporate citizen with the best intentions for the Namibian people. The government of the U.K. adopted similar rhetoric for as long as public sentiment allowed (see Hecht 2012, 102-104), framing capitalism as central to racial transformation. It was not alone. Despite the essentiality of apartheid to Rössing's profitability, Sweden was the only country to boycott Namibian uranium after the 1974 UN Council for Namibia Decree (Leys and Saul 1998).

Momentum began to shift in the late 1970s and early 1980s. The World Campaign Against Military and Nuclear Collaboration with South Africa hosted a UN seminar on Namibian uranium in 1979, after which the UN Council for Namibia hosted its own week-long hearing in 1980. International activism also increased as public awareness in countries importing Rössing's uranium grew through initiatives like *The Rossing File* (Roberts 1980) (see Figure 4.5.1).[109] While these campaigns were successful, South Africa's nuclear weapons ambitions were likely the most influential factor in Western governments' strengthening criticisms of Rössing. By the 1980s, Western leaders were concerned with the possibility of an "apartheid bomb," particularly after identifying a possible nuclear weapons test site in the Kalahari Desert.

[108] Rössing's wages were indeed higher than almost all other wages for black Namibians, but these higher wages accompanied elevated risks in terms of health and safety (see Chapter 6).

[109] This was especially the case in the U.K., which received 50 percent of its uranium from Rössing (Freeman 1992)

Figure 4.5.1. Cover for *The Rossing File* pamphlet (Image: Roberts 1980)



Namibia's SWAPO, which the UN had declared to be the "sole and authentic representative of the Namibian people" in 1973, was keenly aware of uranium's political power in its efforts to secure Namibia's independence. It developed a strategy of international activism focused on "Namibia's stolen uranium." In 1980, Theo-Ben Gurirab, then Head of the SWAPO Mission to the UN, specifically named Rio Tinto in his declaration of SWAPO's plans to demand compensation for Namibian natural resources exported under South African occupation. Leveraging what Hecht (2012, 147) calls the "power of nuclear things," SWAPO used Rössing to strengthen its domestic legitimacy vis-à-vis other Namibian liberation movements (Chapter 1) while simultaneously strengthening the resonance of its message with international anti-nuclear activists. In line with its rhetoric regarding the mining of diamonds by De Beers, SWAPO declared Rössing's uranium to be a form of "unmitigated exploitation." Resource sovereignty, intertwined with the language of human rights and Third World nationalism, thus became a key element of Namibia's independence struggle. I return to this topic in Chapter 5.

As Namibia's 1990 independence neared and SWAPO's legitimacy as the political representative of Namibians was solidified, SWAPO's approach to Rössing began to shift —

first in private, then in public (see also Hecht 2012). With the mine expected to provide roughly 10 percent of independent Namibia's GDP, SWAPO began to frame it, under just ownership, as essential to the development of an independent Namibia. In 1985, what was then called the Namibian Administration acquired a 3.5 percent stake in Rössing formerly owned by the state-owned Industrial Development Corporation of South Africa. By the late 1980s, it was clear that an independent Namibia under SWAPO would not threaten the Rössing mine with nationalization. As one long-time SWAPO activist said,

> Uranium was key to SWAPO those days…It took us out of the apartheid shadow and made Namibian independence a cause of its own. Here we were, the African colony still fighting for freedom!...We could not go without it [uranium] in terms of economics, but the same was true for politics. I think today it is similar in a way. Things change, but we need it [uranium mining] to do what is needed for the advancement of the Namibian nation [referring to development]…Perhaps in the future it [uranium] is for us alone [referring to nuclear energy in Namibia], but, now now [meaning "in the present"] it is the revenue necessary to secure our development. (Interview M)

As suggested by the above quote, SWAPO's support for Rössing continued beyond independence. SWAPO inherited a country that was overwhelmingly dependent on diamond revenue. De Beers, with the support of the South African government, had largely depleted those diamond resources prior to independence.[110] While a far cry from diversification of the economy, uranium at least provided an opportunity to diversify mining.

Post-independence, SWAPO's support for Rössing continued to grow as Rio Tinto's ability to continue operations in Namibia became more uncertain. In 1990, Rössing produced nearly 40 percent of Namibia's total export earnings (Sherbourne 2013). Price stagnation in the global uranium industry put those revenues at risk. When Rössing had begun operations in 1976, uranium was $40 per pound. Prices in the early 1990s were less than half of that. From a peak

[110] Prior to the development of off-shore diamond mining, Namibia's on-shore diamond resources were expected to be exhausted within ten years of independence.

production of 5,000 metric tons in the 1980s, Rössing's production declined to 2,000 metric tons by 1993. Employment implications were even more grim. A workforce that had totaled 3,000 in the late 1970s had been reduced to 1,500 by 1991. Uranium mining is a capital-intensive and legally-complicated industry that relies on long-term contracts negotiated at set prices. Without an alternative source of uranium investment and/or an overnight remodeling of the entire basis of the Namibian economy, SWAPO could not afford to lose Rössing. The GRN's dependence on Rössing was far from a point of pride, but it was reality.

SWAPO leaders, however, remained keenly interested in opportunities to diversify Namibia's one-mine uranium industry. They were finally able to do so around 2008 in conjunction with the intensification of nuclear energy generation in China (associated with the CPC's 2007 introduction of Ecological Civilization; see Chapter 3). In the remainder of this section, I examine the domestic factors that made alternatives to Rössing particularly appealing to SWAPO leaders by the early 2000s. Then, in the next section, I explain how China took advantage of these opportunities to become Namibian uranium's dominant actor.

Early 2000s: The "War on Terror" and Sovereignty

Despite intensified uranium production in the global South, the geopolitical separation between nuclear and non-nuclear countries identified by Hecht (2009) remained in place after the Cold War. By transferring the burden of production from consuming countries in the global North[111] to the global South and former USSR, the distinction between nuclear and non-nuclear states was reinforced. African uranium producers continued to play a minor role in discussions of nuclear energy security. As recently as 1995, for example, the U.S. did not consider Namibia to

[111] Australia is an exception here. It does not have any nuclear power plants but is a major uranium producer.

be relevant to nuclear energy security discussions, even though Rössing produced 10 percent of the world's uranium that year (OEST 1995).

This situation changed on September 11, 2001, when nuclear powers became increasingly concerned with the possibility of terrorist groups and "rogue" states acquiring nuclear fuel. Despite pressures to reduce Western reliance on strategic foreign resources in the early 2000s though, officials in the U.S. and former European uranium producers prioritized securing external uranium resources over accepting the risks of re-intensified domestic extraction. The 2003 Niger yellowcake incident ushered in a particularly intense period of intervention by global North states to secure uranium supplies and production networks in Africa (Hecht 2012). The push to secure African uranium did not, however, increase the relative power of African uranium exporters like Malawi, Namibia, and Niger. Without an OPEC-like cartel, these countries were instead subjected to surveillance and intervention by uranium importers.

In Namibia, efforts to secure uranium included stationing semi-permanent U.S. security officials at the Rössing mine, in which the Iranian government owns a 15 percent stake,[112] after a 2009 uranium theft by two mine employees working with a member of the Namibian Defense Force (Interview N, GRN official; confirmed by Interview O, U.S. Embassy). As over 30 percent of Rössing's uranium was exported to the U.S. at the time, the GRN had little choice but to comply with this exercise of extra-territorial sovereignty (Agnew 2005). The GRN's then-reliance on U.S. aid, particularly through the U.S. Millennium Challenge Corporation, further reduced room for negotiation. While the GRN publicly deferred to the U.S., several SWAPO interviewees said that the incident stoked considerable frustration and debate within SWAPO.

[112] The Iranian government still owns this stake, but it does not receive any uranium from the mine.

While anxious to retain the U.S. as a uranium export market,[113] the incident was deeply embarrassing to some in SWAPO. It also came at a time when resource nationalist sentiments in Namibia were on the rise (see Chapter 5). In every interview with GRN officials and industry representatives, I asked my informants to identify domestic factors that they thought worked in China's favor when it came to uranium investments. Three higher-level SWAPO interviewees (Interviews M, P, and Q) independently told me that they thought the demeaning experience of having U.S. security forces stationed at Rössing played at least a modest role in encouraging support for Chinese investments in the sector. Others hinted at the same by emphasizing the willingness of Chinese state-affiliated investors to support the GRN's priorities in the industry's development, including an increased role for the Namibian state (see Chapter 5).

For the time being though, the uranium industry's stagnation presented a more immediate challenge to SWAPO. In 2003, Rössing, then the world's largest uranium mine, announced plans to end its Namibian operations by 2007 due to falling prices. By 2004, it had reduced its workforce to just 833 people —compared to 3,000 in the late 1970s — through a series of high-profile retrenchments. Seeking to improve its financial situation, Rössing's Rio Tinto management decided in 2004 to legally challenge the GRN's mining royalty tax. Several of my SWAPO informants cited this decision as another impetus for GRN officials, particularly within SWAPO, to seek new investors in the industry. At the time, the challenge seemed likely to succeed due to the GRN's dependence on Rössing. Within a year, however, the tables had turned, and Rössing was no longer the only actor in Namibian uranium.[114]

[113] In 2014, uranium represented 56 percent ($144 million) of Namibia's exports to the U.S. (Census Bureau 2015).

[114] The GRN ultimately doubled the royalty rate levied on Rössing versus other uranium mines in April 2009 (see Government Notice Number 4236). The decision came after significant Chinese investments were underway.

4.6 Diversified Dependence: China's Nuclear Rise and the Uranium Rush

Rössing's announcement proved premature. By 2004, supply concerns had catalyzed a bullish uranium market. Given uranium's limited uses, uranium prices — and in turn exploration — are heavily dependent on nuclear energy generation forecasts. Rising concerns about air pollution and carbon dioxide emissions from coal plants in China and elsewhere was magnified by speculation about insufficient uranium supplies for the expansive nuclear energy plans of China, India, and other countries. Speculation was further magnified by projections that uranium from decommissioned U.S. and Russian nuclear warheads, which then represented roughly 20 percent of global uranium supply, would run out within a decade (Yergin 2012). In January 2007, international energy experts' warnings that fossil fuels could be depleted within three decades catalyzed a further increase in uranium prices. Concerns about the uranium "supply glut" turned into speculation about "peak uranium."

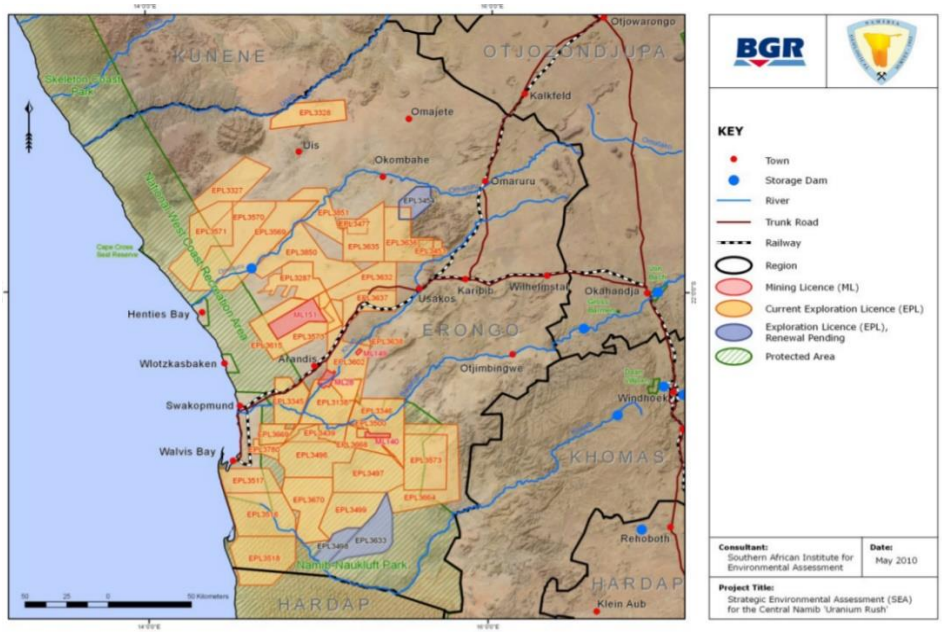
After three decades of uranium prices around $10 per pound, spot prices increased more than thirteen-fold from 2003 to May 2007, when they hit an all-time high of $137. Figure 4.6.1 shows the boom's magnitude. Rapid price increases catalyzed a veritable "uranium rush," particularly in Africa (see also Conde and Kallis 2012; Winde et al. 2017). The number of uranium exploration companies operating around the world increased 65 percent from 570 to 940 during 2007 alone (Shindondola-Mote 2009). Prices retreated to $65 by July 2008 before leveling out between $40 and $50 per pound in 2009 and 2010. In late 2010, renewed speculation related to China's increased nuclear energy targets once again sent prices upward. This trend held until the Fukushima disaster in 2011.

Figure 4.6.1. Monthly uranium spot price (Graph: EIA 2018c)

Namibia experienced one of the world's largest uranium booms, measured in terms of both production increases and applications for new projects, during this time. Investment in the sector quadrupled in only four years. In 2006, the Langer Heinrich mine owned by Australia-based Paladin Energy became the world's first conventional uranium mine to open in two decades. Namibia's Ministry of Mines and Energy (MME) granted nearly 60 new uranium prospecting and mining licenses between 2004 and 2007. Figure 4.6.2, which is from the *Strategic Environmental Assessment for the Central Namib Uranium Rush* (MME 2010), shows the extent of these licenses in Erongo. Seemingly each newly-announced project was proclaimed to be among the world's largest uranium deposits. The most-publicized new projects included Aussinanis (majority owner: Deep Yellow Ltd., Australia), Etango[115] (majority owner: Bannerman Resources Ltd., Australia), Marencia (majority owner: Marencia Energy, Australia), Norasa/Valencia (majority owner: Forsys Metals Corp., Canada), Omahola (majority owner: Deep Yellow Ltd.), Tumas (majority owner: Deep Yellow Ltd.), and Zhonghe (majority owner: China Uranium Corporation Ltd. (SinoU), a wholly-owned subsidiary of CNNC).

[115] China's Sichuan Hanlong Group made a $144 million takeover offer for the Etango mine site in July 2011, but the deal did not proceed.

Figure 4.6.2. Uranium licenses in the Central Namib (Map: MME 2011, ES-2)



Beyond China's influence on global uranium prices, private and state Chinese investments also contributed to Namibia's uranium rush more directly. Rössing became the first Western-owned mine to directly export uranium to China (via Shanghai Power Utility) in 2004. In 2008, China's state-owned Aluminum Corporation of China (Chinalco) deepened this relationship by purchasing a 12 percent stake in Rio Tinto itself. This investment was followed by the 2008 establishment of a Namibian uranium exploration subsidiary by the state-owned China Uranium Corporation Ltd (SinoU), itself a CNNC subsidiary. Chinese private companies followed the lead of Chinese SOEs. In 2010, for example, the Sichuan Hanlong Group conglomerate acquired an 18 percent stake in the Australian-owned Marencia Energy mine.

The intensity of Namibia's uranium rush was not due to a change in its geological conditions. Its geology remained as unappealing in the mid-2000s as it had been in the 1960s, despite technological advancements. Namibia's geopolitical conditions, however, had changed significantly since before independence. Far from its prior association with apartheid, Namibia's

sterling geopolitical reputation post-independence (see Chapter 1) had become a source of commercial advantage.

Industry stakeholders and observers in Namibia cited a variety of reasons for Namibia's rising appeal, most of which fell into three broad themes and one China-specific theme. First, Namibia had come to viewed since its independence as a particularly-welcoming destination for foreign investment. Its relatively low mining taxes and modest regulations had earned it praise from the World Bank and the mining industry's Fraser Report, among others, as one of the best places to do business in Africa.[116] Even better for would-be investors, uranium mining in Namibia was regulated by the standard policies applied to the entire mining industry when the rush took hold. There were no specific regulations for uranium mining. Given strict international regulations on uranium exports, this was a rarity globally, not just vis-à-vis global North producers. Second, despite its relatively lax regulations and problematic apartheid legacy, Namibia's post-independence uranium industry (which consisted only of Rössing prior to the rush) had developed a reputation for environmental stewardship and employee safety (see Chapter 5). This reputation was appealing to wildcat exploration companies and larger foreign investors (e.g., France's Areva) alike. Third, and perhaps most importantly, Namibia had a reputation for political and economic stability. Prior to its turn to resource nationalism in 2008 (Chapter 5), SWAPO was markedly pro-foreign investment. Furthermore, unlike many African resource producers, post-independence Namibia had experienced relatively little conflict — or even strikes — related to mining (see Chapter 1). Its workforce was relatively unskilled thanks to decades of the apartheid educational system, but it was subdued and manageable. In short, Namibia was a safe investment — "Africa lite," as it is often described in the diplomatic

[116] See, for example, World Bank (2008), which ranks Namibia third above its "good governance" rival Botswana.

community. Finally, for China in particular, Namibia's advantages were complemented by historical geopolitics. China had been a key supporter of SWAPO during Namibia's liberation struggle, and the two countries' leaders maintained close political relations (see Chapter 1) that could facilitate Chinese investments.

While appealing to international investors, Namibia's "uranium rush" was not without domestic controversy. By 2007, the GRN was under pressure from Namibia's small-but-vocal environmental groups to prevent intensified mining from becoming a free-for-all. Opposition was particularly heated among white middle and upper-class Swakopmund residents associated with the tourism industry and among rural Erongo's (largely white) commercial farmers, ranchers, and tourism industry operators. Water, environmental degradation, and infrastructural burdens were the primary issues for these groups (FG 7; see also MME 2011 and Gardiner 2016). While intimately affected by intensified uranium mining, local minority communities were rarely involved in these movements, which often framed the Namib as something of a "pristine wilderness" (discussed further in Chapter 6; see also Cronon 1996 and Neuman 1998).

The GRN addressed these environmental concerns by issuing a moratorium on new uranium mining licenses in February 2007. Officials said the moratorium would last long enough for the GRN to develop a combined uranium mining and nuclear energy development policy. The stated goal for the moratorium, which included the development of a strategic environmental assessment (SEA) and strategic environmental management plan (SEMP), was to make "the 'Namib Uranium Province'…a living example of how mining can contribute significantly to the achievement of sustainable development" (MME 2011, ES-2). It did not, however, prevent the

GRN from turning previously-existing prospecting licenses into mining licenses.[117] Such domestic environmental debates, however, were soon trumped by market forces.

4.7 Back from the Brink: Fukushima and the Persistence of Namibian Uranium

Increased uranium production in Namibia and elsewhere was not without market consequence. Global uranium reserves increased by more than 15 percent between 2005 and 2007. By February 2011, oversupply had reduced uranium prices to $72 per pound. The situation rapidly worsened following the March 2011 Fukushima nuclear disaster. Namibia, which had become the world's fifth-largest uranium producer by early 2011, was hit particularly hard. Japan's 50 nuclear power plants represented a quarter of Namibia's uranium export market when they went idle after Fukushima. Although this was down from a high of 41 percent in 2007,[118] it was a major blow for the industry. Namibia's entire mining sector contracted 10 percent in 2012. Even worse, the 2011 crash became price stagnation after several European countries decided to abandon nuclear power. By 2014, uranium prices had tumbled 60 percent to nearly $30 per pound. They have since worsened to around $15-25 per pound. Below $40 per pound, more than half of the world's uranium mines, including all Namibian mines, operate below the break-even point (WNA 2016). Exploration and development projects have been halted around the world, with few signs of an imminent recovery.

Namibia's situation would seem to be particularly dire in this context. Excluding the rush, its mines have operated at below-breakeven prices for most of the past twenty years thanks to their unusually-low grades, expensive environmental context, and lack of co-occurring

[117] This resulted in substantial confusion, with some sources reporting that the moratorium had been lifted near the end of 2007 (see USGS 2007).

[118] Japan's declining importance in Namibia's uranium sector was primarily due to Namibia's increasing exports to China, not a decline in the volume of uranium exported to Japan.

minerals to offset low uranium prices. Yet, Namibia's uranium industry has not dried up. In fact, after steep production declines in 2012 and 2013, the sector is growing. This paradox is explained by a strategic post-Fukushima influx of Chinese investments. From 2012 to 2013, Namibia's uranium exploration and mine development expenditures declined from $76.5 million to $19.1 million (NEA and IAEA 2016). In 2014, however, uranium exploration and mine development expenditures increased to $1 billion, the largest figure ever reported in Namibia.[119] Both the NEA and IAEA (2016) and Namibian uranium industry stakeholders with whom I spoke cited China as *the* catalyst in this growth. "There was — and is — a great suspicion[120] of the Chinese [in the uranium industry]," one industry representative told me. "But the fact remains that we would have collapsed without them." The persistence of Namibian uranium despite market conditions that are shuttering uranium mines around the world — including even Canada's McArthur River, the world's largest uranium mine — is inconceivable without these Chinese investments. The only operating Namibian mine without a current Chinese SOE stake, Areva's Trekkopje, never opened due to low prices.[121] CGN recently announced its intention to buy a 49 percent stake in the mine in light of its financial difficulties.[122]

While private Chinese companies have played a role in making uranium Namibia's primary export to China, it is direct investments by Chinese state-owned entities that have kept Namibian uranium afloat. In 2015, Namibia became the largest site of uranium reserves for both

[119] Things were a bit more subdued the following year, but total uranium mine development and exploration expenditures in Namibia still increased 24 percent between 2013 and 2015 despite worsening global prices.

[120] I discuss Namibians' reactions to Chinese investments in uranium in more detail in Chapters 5 and 6.

[121] It is currently under a $10 million/year care and maintenance program, which is funded in part through its sale of water from its desalination plant to other uranium mines as well as drought-stricken coastal municipalities.

[122] Areva announced that the mine was not for sale in February 2018, but this seems subject to change given Areva's recent financial difficulties.

China's CGN (71 percent) and CNNC (35 percent). This was accomplished through several purchases by both SOEs, but two have been the most influential. First, and most importantly, CGN purchased the Husab deposit from Australia's Extract Resources in 2012. CGN later sold a 10 percent stake in the mine to the GRN via a Chinese government loan (see Chapter 5). When it reaches full production in late 2018, Husab is expected to become the world's second-largest uranium mine. It will trail only Canada's McArthur River. This is a considerable feat given that McArthur has much higher uranium concentrations than Husab (20 percent versus 0.03-0.04 percent). Such high production levels can only be accomplished through open-pit and heap leaching extraction implemented on a massive scale. Second, in June 2014, CNNC purchased a 25 percent stake in Paladin Energy's Langer Heinrich mine for $190 million. The sale made it possible for the new mine to continue production despite below-break-even prices. According to two industry sources, Paladin is now evaluating proposals for the mine's full sale to CNNC. It is simply not commercially-feasible for a private company to operate a new uranium mine in Namibia at current prices.

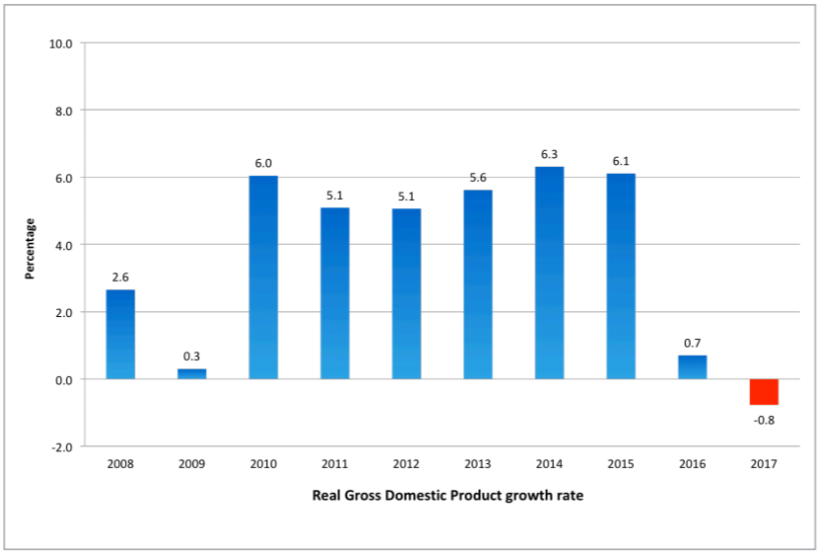
Why, unlike all other actors, have Chinese SOEs invested in new Namibian uranium mines when prices remain so low? Unlike private companies like Rio Tinto or even France's government-affiliated Areva,[123] Chinese SOEs do not currently aim to sell uranium from their mines to other countries. Instead, yellowcake from their mines is exported directly to China for conversion and enrichment, after which it is used in-house, typically by the very SOE that owns the mine from which it was extracted (e.g., CGN, CNNC). Given the Chinese government's ambitious nuclear plans and the ease of yellowcake storage, CGN and CNNC can confidently stockpile uranium for future use. While they may export yellowcake to other countries if

[123] France's Areva sells converted uranium that exceeds its domestic demand to other countries.

uranium prices rise dramatically in the future, the strength of current Chinese demand means that global spot prices are of relatively little importance in the uranium mining operations of Chinese SOEs. Despite the radical differences between contemporary Namibia and Namibia under apartheid, there is historical continuity in the state-led incentives that have driven both China and South Africa to invest in Namibian uranium.

China's consistent demand for Namibian uranium in the face of low prices has been critical from the GRN's revenue perspective. Uranium price declines have aggravated Namibia's increasingly perilous economic situation, as shown in Figure 4.7.1. In 2016, Namibia officially entered an economic depression after two consecutive quarters of negative GDP growth. Annual GDP growth was only 0.7 percent in 2016 (Namibia Statistics Agency (NSA) 2018). Economic difficulties worsened in 2017, when Namibia experienced its first annual GDP decline (-0.8 percent) since 1993. This decline occurred despite 12.8 percent growth in the mining sector (NSA 2018). A 14.6 percent increase in diamond revenues enhanced mining sector growth, but there was an even more critical factor: against all market odds, Namibia's uranium revenues increased 23.4 percent in 2017 in association with the initiation of production at the Husab mine.

Figure 4.7.1. GDP growth rate for Namibia, 2008-2017 (Chart: NSA 2018)



In conjunction with Namibia's economic crisis, the GRN has loosened the environmental policies it implemented at the height of the uranium rush to attract new Chinese exploration investments (Interview R, GRN official). In early 2016, Minister of Mines and Energy Obeth Kandjoze requested that the GRN lift its moratorium on new uranium exploration licenses. Although a court decision in response to a challenge by Australia's Black Range Mining had previously upheld the moratorium in 2011, the GRN agreed to end it in January 2017. This shift received substantial media coverage in China (e.g., *Xinhua* 2017) and was a topic of conversation in Chinese social circles in Namibia. Although the GRN's stated rationale for the moratorium was to allow time to develop a new uranium mining policy, economic pressure prevailed over environmental protection. As of May 2018, the GRN's new uranium policy remains in draft form.

There are several bullish forces in the uranium market. Primary uranium supplies (i.e., mined uranium) meet only 65 percent of current global demand for nuclear energy. The rest is met by secondary sources (e.g., decommissioned warheads, stockpiles). China's construction of nuclear power plants is behind schedule, as would be expected given its scale, but it remains ambitious. Several additional mines have also been mothballed in the past year. Kazatomprom, the only company that currently mines uranium in Kazakhstan, announced a 10 percent production cut in 2017.[124] Canada's Cameco suspended production at the McArthur River mine and the smaller Key Lake mine in 2017. Bullish observers argue that the supply reduction associated with these closures combined with rising demand means a uranium recovery is imminent, but that remains to be seen. Given the global availability of uranium, a more dramatic supply or demand shift may be needed to have a meaningful effect on uranium prices.

[124] This development bodes well for Namibia's attempt to move up the chart of the world's top uranium producers. Kazakhstan has supplied more uranium than any other country over the past five years.

Namibia has not been immune to these developments. In April 2018, Paladin Energy announced that it may mothball its Langer Heinrich mine, which began operations at the height of the uranium rush in 2007. While Rössing has not announced further retrenchments since 2014, it has cut back on production. During my 2014 visit, I noticed that only five haul trucks were operating in the pit despite recent blasting. During my first visit in 2011, by contrast, there had been at least 15 trucks in operation despite a lack of recent blasting. The Rio Tinto-provided guide indicated that low prices were the reason for the reduction. Several of my industry informants expect Rössing to announce further retrenchments by the end of 2018 or, alternatively, to solicit a greater Chinese ownership share. If prices continue to stall non-Chinese-owned projects, Chinese uranium investments may soon be all that remains in Namibia.

4.8 Conclusion

The securitization of uranium supplies is today being driven as much by climate change as by nuclear weapons. While far from the world's only uranium importer, China's nuclear ambitions have made it the world's largest investor in uranium frontiers like Namibia. Without rising Chinese demand and more recent direct investments, Namibia's geologically-inefficient and environmentally-precarious uranium industry would almost surely have met its end following the Fukushima market collapse. Its mines have been operating at below break-even prices for nearly a decade. The combination of low uranium grades, expensive environmental limitations (e.g., water scarcity), and low prices should have relegated Namibia, to re-quote an interviewee, to the "historical rubbish bin" (Interview K). Chinese investments have forestalled this demise. Today, Namibia is the largest uranium source for both of China's nuclear SOEs.[125]

[125] Namibia's three operating mines represent 71 percent of CGN's total foreign uranium reserves (Husab) and 26 percent (Rössing) and 8.5 percent (Langer Heinrich) of CNNC's total foreign uranium reserves (Zhang and Bai 2015).

China's government has portrayed nuclear energy as essential to addressing the country's domestic air pollution crisis and the global challenge of climate change. Portrayals of Namibia's uranium industry as well-governed in social, political, and environmental terms have been key to its persistence since the end of apartheid. This narrative of responsibility and stewardship aligns well with the geopolitical narrative of Ecological Civilization described in Chapter 3. Despite the public relations efforts of Namibia's government and uranium industry, however, uranium mining in Namibia is far from "green." The environmental context of Namibia's uranium mines — particularly their substantial water consumption and open-pit designs — casts doubt on rhetoric of sustainability. Namibia's low uranium grades also affect its mines' greenhouse gas emissions, which the Chinese government claims to be using nuclear energy to reduce. The less pure a uranium ore, the greater the volume of extraneous material that has to be processed to extract the same amount of yellowcake. Carbon dioxide emissions increase from 80 grams per kWh of electricity when uranium has a 0.15 percent grade to 131 grams per kWh when uranium has a 0.01 percent grade (Lenzen 2008). Namibia's uranium mines are not only environmentally-inefficient; they are inefficient in terms of carbon emissions. The relatively low grades of China's domestic uranium mines (0.1-0.3 percent) are often cited as the rationale for its pursuit of foreign uranium. Yet, China's largest source of foreign uranium, Namibia, has even lower grades (0.01-0.05 percent). The environmental implications of uranium mining in Namibia cast doubt on whether China's Ecological Civilization is indeed global in scope or whether its benefits are intended only for China.

The implications of Namibian uranium are not limited to climate change though. Uranium is not only a geopolitical matter. Its extraction has embodied implications for miners and local communities. Like other natural resources, the extraction of uranium is also intertwined

with the production of social meaning, including place-making, development, identity, and nation and state-making (e.g., “national” resources). What are the social, political, health, and economic implications of intensified uranium mining in Namibia, as facilitated by Chinese investment? The socio-spatial distribution of the benefits and costs of the uranium mining industry is not merely determined by the distribution of uranium itself. Instead, the costs of intensified uranium mining in Namibia and who bears them — as well as perceptions of both — reflect how geology intersects with social relations across multiple scales. These intersections are the focus of the remaining two chapters.

Chapter 5
South-South Solidarity as State-State Solidarity: Resource Ownership and the Husab Uranium Mine

> It is important that African countries carefully consider the terms of those agreements [with China] and not forfeit their sovereignty.
>
> -Rex Tillerson, Former U.S. Secretary of State
> March 8, 2018

> This mine [Husab] is the child of a Chinese mining company father and a Namibian government mother, delivered by the midwife Epangelo, and devoted to developing all Namibians.
>
> —Isak Katali, Former GRN Minister of Mines and Energy
> May 22, 2014

5.1 Introduction

Chinese investments in Namibian uranium have brought the industry back from the brink of collapse. The implications of these investments, however, are not limited to measures of annual uranium production. In Chapter 1, I introduced two prominent trends in resource politics in Africa: increasing Chinese investment and strengthening resource nationalism. While researchers have examined both trends in isolation, there has been little analysis of how they are reinforcing or undermining one another across the continent. In this chapter, I use Namibia's uranium industry — and the Husab uranium mine in particular — as a case study to evaluate how rising Chinese influence is intersecting with debates over natural resource ownership.

A $5 billion investment, Husab is the largest single investment by the Chinese government in Africa to date. Unlike Namibia's other mines, Husab's ownership is entirely state-based. China's CGN owns 90 percent of the mine, while the GRN's Epangelo owns 10 percent. In the pages that follow, I analyze Husab in the context of debates in and beyond Namibia over natural resource ownership and Africa-China relations. Contrary to portrayals of Africans as passive recipients of foreign investment, I find that Namibian officials are leveraging Chinese

investment to pursue an enhanced role for the state in resource extraction. This outcome suggests that, although the implications of Chinese investments will vary by country and situation, Africa-China relationships in resource extraction may be less one-sided than is often assumed. My analysis also indicates how African governments might leverage Chinese investment to pursue an agenda that initially seems contradictory to foreign investment: resource nationalism. These findings have broader implications for our understanding of how the politics of resource ownership in Africa are changing in a time of geopolitical transition.

5.2 Resource Sovereignty and Chinese Investment

There have been two major trends in resource extraction in Africa over the past decade: increasing Chinese investment and rising resource nationalism. Ten years after Ferguson (2008) argued that privatized extraction was likely to defeat the national development model, resource nationalism (see Johnson 2007) and state-based extraction are returning to the fore. This includes a noteworthy increase in mining state-owned enterprises (SOEs). Chinese investment would seem to be a potential factor in this trend given Xu's (2014) finding that 75 percent of Chinese foreign direct investment in Africa occurs through SOEs. Yet, there has been little attention to how these two trends might influence one another, including how rising Chinese investment may affect debates over who should own and benefit from natural resources. In this chapter, I analyze how domestic resource nationalism is converging with rising Chinese investment in Namibia. I turn to sub-national issues of distributive politics and development in Chapter 6.

Relationships between natural resources and states (e.g., resource ownership, resource sovereignty, resource governance) are a prominent topic in political geography (Bridge 2014; Harris 2017) and political ecology (Whitehead, Jones, and Jones 2007; Emel, Huber, and Makene 2011; Kohl and Farthing 2012) as well as in the Africa-China literature (Carmody

2009). Whether foreign investment enhances (Kempton and Preez 1997) or undermines (Peet and Hartwick 1999; Bush 2007; Thompson 2009; Carmody 2010; Fraser and Larmer 2010) the power of post-colonial states to control the resources in their territories is a running debate in these literatures. Reflecting how these debates intersect with questions of distributive justice,[126] resource sovereignty is also a topic of long-standing interest in philosophy and political theory (Schachter 1977; Sen 1984; Schrijver 1997; Pogge 2002; Schaber 2011; Moore 2012; Wisor 2012).

Debates over just resource ownership lie at the heart of contemporary extraction-oriented movements around the world, which often center on the rights of communities vis-à-vis states and foreign investors. The recent global trend toward resource nationalism reveals the persistence of these tensions. Research on these themes over the past five years has primarily centered on neo-extractivism in Latin America (e.g., Acosta 2013; Veltmeyer 2013; Burchardt and Dietz 2014; Veltmeyer and Petras 2014; Haslam and Heidrich 2016; Andreucci and Radhuber 2017; Revette 2017). Despite the relative lack of recent attention to resource nationalism in Africa though, debates over resource ownership have long been a prominent topic in African politics research (e.g., Karl 1997; Taylor and Mokhawa 2003; Watts 2004; Southall and Melber 2009; Soares de Oliveira 2015; Wegenast and Scheider 2017). Recent political developments in the DRC (Jamasine 2018), South Africa (Yeomans 2018), Tanzania (Weltman 2018), and Ghana (McKay 2018), among other countries, indicate that resource ownership rights are far from just an academic debate on the continent.

Much of the above scholarship focuses on national policies, but state-based resource sovereignty is also grounded in international law. In international human rights law, for example,

[126] My focus on distribution in this dissertation (particularly in Chapter 6) is on Namibians' perceptions of distribution and its empirics rather than the philosophical arguments cited here.

resource sovereignty immediately follows the principle of self-determination. Article 1 of both the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights guarantees that

> 1. All peoples have the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development. 2. All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic co-operation, based upon the principle of mutual benefit, and international law. In no case may a people be deprived of its own means of subsistence.

"A people" in international law refers to all the citizens of a country, leading Wenar (2008) to argue that foreign investors who import natural resources from countries plagued by corruption, poverty, and inequality are committing a human rights violation. The inclusion of resource sovereignty in the above UN covenants in the 1960s reflected both geopolitical debates over the relative importance of economic versus political rights (hence the two separate covenants) and the perceived antagonism between resource nationalism and foreign investment. Schrijver's (1997) historical analysis, for example, identifies resource nationalism within post-colonial states as a driving force behind the inclusion of resource sovereignty in both human rights covenants, at least one of which has been adopted by 151 of 192 states.

The geopolitics of foreign investment have changed significantly since the above covenants entered into force. China, long an advocate for the prioritization of sovereignty (Strauss 2009) and economic over political rights (Svensson 2002), is gaining influence. China's involvement in resource extraction, which is sometimes characterized as "resource-grabbing" by Western politicians and media outlets, is one of the most prominent topics in academic and policy-oriented discussions of Africa-China relations (e.g., Taylor 2006; Tull 2006; Carmody and Owusu 2007; Keet 2008; Alden, Large, and Soares de Oliveira 2008; Brautigam 2009; Power, Mohan, and Tan-Mullins 2012). Some Africa-China scholars have interpreted the

resource ownership implications of Chinese investment in Africa along the lines of Peet and Hartwick (1999, 107), who argued that foreign investment creates a situation in which "real power [is] exercised from external centers of command in dominant ('metropolitan') countries. Dependence continues...through international ownership of the region's most dynamic sectors, multinational corporate control over technology and payments of royalties, interests, and profit." Burgess and Beilstein (2013, 120), for example, argue that Africa's "relatively weak states" are emboldening Chinese mining firms to "monopolize" natural resources. Western politicians have made similar arguments, as Mawdsley (2008) highlights in her analysis of British broadsheet newspapers. More recently, former U.S. Secretary of State Rex Tillerson warned during his March 2018 diplomatic visit to sub-Saharan Africa that Africans must "carefully consider the terms of those agreements [with China] and not forfeit their sovereignty" (Reuters 2018). Tillerson's arguments echoed those of former U.S. Secretary of State Hillary Clinton, who warned of the dangers of "new colonialism" while on a trip to Zambia in 2011 (Kelemen 2011).

It is not obvious to all, however, that Chinese investments in extractive industries threaten resource sovereignty. Some Africa-China scholars, as well as many African political leaders, argue that China's geopolitical emphasis on mutual benefit will enhance Africans' leverage in negotiating contracts (Moyo 2009) or enable them to play investors off against one another (Brautigam 2009). China's self-interested emphasis on national sovereignty and non-interference (see Strauss 2009) may bode particularly well for African states looking to increase their resource sovereignty. Research on African politics has shown that African governments and politicians are often far from passive victims when it comes to engagements with foreign investment (Bayart and Ellis 2000; Cooper 2002; Peiffer and Englebert 2012). Instead, African leaders can leverage relations with foreign investors to enhance their centrality as a site of wealth

creation, accumulation, and distribution (Allen 1995). Ramutsindela (2013, A1) argues, for example, that South Africa's mines are "site[s] of intense investment and state-aided control…a linchpin of the economy that provides the state with the much-needed revenues that in turn affect the credibility and legitimacy of the state." African states are often portrayed as relatively weak for reasons related to territorial control or sovereignty (Reno 1997; Herbst 2000; see Sidaway 2003 for a critique), but resource governance is an area in which many African states enjoy significant authority (Emel, Huber, and Makene 2011). Could this also be the case with Chinese investment, or does China's rise uniquely endanger the resource sovereignty of African states?

Debates over resource-related rights and the proper scale for their resolution reflect broader tensions regarding China's rising influence, including the respective balance between the rights of states and individuals as well as between economic and political rights (see Chapter 6). I take inspiration in this chapter from the literature above, as well as previously-discussed work on China's geopolitical rhetoric (e.g., Strauss 2009) and African agency (e.g., Corkin 2013), to analyze the implications of rising Chinese investment for national sovereignty over uranium in Namibia. My goal is not to argue for or against the attribution of resource rights to the national scale; as I discuss in Chapter 6, there are many problems with state-based resource sovereignty when we turn our lens to sub-national scales. Instead, I seek to better understand how Namibian officials' abilities to claim and act on their national goals for resource sovereignty have changed in conjunction with China's rising influence in the country's uranium sector. I turn to the sub-national implications of Chinese investments, including for minority groups, in Chapter 6.

5.3 The Politics of Resource Nationalism in Namibia

Resource sovereignty played a critical role in Namibia's liberation struggle after Decree No. 1 banned natural resource exports from the country during South African occupation. While

Namibia has enjoyed resource sovereignty in legal terms since independence, its government has been beholden to the priorities of foreign investors due to its economic reliance on capital-intensive mining (see Chapter 4). Like many African states, however, the GRN has also been under domestic pressure in the past 10 years to address perceptions that foreign investors are the primary beneficiaries of resource extraction. In the words of two self-identified residents of Windhoek's Katatura neighborhood (a former township) in a 2012 SMS in *The Namibian*, there is a sense that Namibia is becoming "an investor over-friendly country" in which "mining monopolies have been looting the country" while "citizens live in poverty" (SMS by Itembu and Basson 2012).

Resource nationalism often spikes when commodity prices are high because the financial benefits of retaining a greater share of revenues become particularly clear (see also Emel, Huber, and Makene 2011). Tensions between foreign investment and resource nationalism in Namibia came to a head in tandem with the uranium rush described in Chapter 4. Initially, SWAPO politicians' rhetoric reflected historical antagonisms between resource nationalism and foreign investment. Since 2012, however, SWAPO leaders have pursued a different strategy that emphasizes Chinese investment as uniquely supportive of the resource nationalist sentiments of many Namibians.

In the sections that follow, I analyze the antagonism between foreign investment and resource nationalism that characterized Namibian politics over the past decade as well as its recent resolution. I focus on five transitional moments: the creation of Epangelo in 2008/2009, the announcement of the Strategic Minerals Policy (SMP) in 2011, the policy uncertainty following the 2011 SMP, the renewal of resource nationalism in 2014, and the development of the Husab uranium mine. I center the discussion around the May 22, 2014, Chamber of Mines of

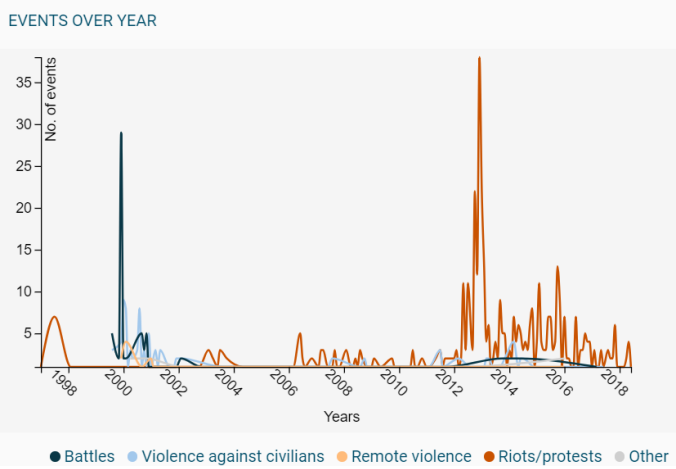
Namibia[127] (CoM) annual conference, an event at which the GRN's China-oriented strategy to resolve the tension between resource nationalism and foreign investment became clear to me.

The May 2014 CoM conference came at a moment of antagonism between supporters and detractors of foreign investment in mining. As elsewhere in Africa, the influence of "new players" in the mining industry had become impossible to ignore in Namibia. As investments from India, Russia, and, most notably, China grew, investors based in South Africa, the U.K., Australia, and Canada were increasingly on edge about how new investors might affect their long-standing dominance (discussed further in Section 5.10). Meanwhile, GRN officials were facing their own challenge in Namibians' rising frustrations with the lack of progress that had been made post-independence to reduce Namibia's near-world-leading levels of unemployment and income inequality. Led by a growing population of "born-frees,"[128] demonstrators had recently expressed these concerns in a series of prominent land occupations and protests organized by the Affirmative Repositioning (AR) youth movement (see Figure 5.3.1; I also discuss AR in Chapter 7). Rhetoric associated with these demonstrations had explicitly targeted foreign investment and perceptions of corruption associated with it. As part of its strategy to counter those concerns, the GRN had made increasing the government's role in mining a public priority. How this priority would be implemented, however, remained unclear as the conference approached.

[127] The CoM is a self-regulating organization with 111 members. Its governing statement describes it as an "advocacy body" with the "sole mandate to protect the interests of its members while promoting sustainable growth of mining and exploration so as to maximize economic gain for the Namibian nation" (CoM 2018).

[128] Most often used to refer to South Africans born after the end of apartheid, "born-frees" is also used in Namibia to refer to Namibians born after the country's 1990 independence.

Figure 5.3.1. Conflict events in Namibia (Graph: ACLED 2018)



Reflecting the mining industry's growing concerns with public perceptions, the 2014 conference was the fourth organized by the CoM since 2010. Since its 1969 establishment, the CoM, which includes investors from all foreign investment sources but has a Western and South African-dominated leadership, had limited its events to member meetings, public relations outreach at international mining conferences, and the occasional expo targeting foreign investors. Recent developments, however, had prompted the CoM to adopt a more extroverted public relations strategy (Interview S, CoM representative) that included populist messaging about mining's contribution to national prosperity (see Figure 5.3.2). Reflecting this strategy, the 2014 conference was designed to appeal to GRN bureaucrats and politicians (Interview S). Werner Duvenhage, then the CoM's Council President as well as the Managing Director of Rössing Uranium, opened the conference by noting that the Chamber had personally invited all middle and high-level GRN mining officials. It seemed that each of them was formerly introduced in the name of "protocol" during the conference's opening session.

Figure 5.3.2. Chamber of Mines Newsletter Covers (*Left to right:* CoM 2012; 2012; 2013)

On paper, the 2014 conference was similar to other CoM events I had attended. It had the requisite auspicious title to appeal to populist sentiments: "Mining Industry on the Growth Path to Support the Namibian Economy." The schedule centered around presentations by companies with long-standing reputations in Namibian mining and extensive public relations portfolios, such as Rio Tinto's Rössing Uranium, Australia-based Weatherly International, and Canada-based Dundee Precious Metals. These presentations highlighted the importance of foreign investors in promoting Namibia's "good governance" reputation (e.g., "Namibia Uranium Association – Safeguarding the Namibian Brand of Uranium"). They also reinforced recurring public relations themes in the industry, including safety standards ("Importance of Health and Safety in the Mining Industry" by MME's Chief Inspector of Mines — which I interpreted as meant to indicate that the industry welcomed government inspections) and value-added production ("Upstream Value Addition Opportunities Created by the Mining Industry – Case of Sulphuric Acid Production by Dundee Precious Metals Tsumeb"). Although the annual conference has since grown into a two-day event with 1,000+ attendees, the 2014 event was

smaller. It attracted around 500 participants and featured fifteen presentations at Windhoek's Safari Court conference venue — all centered around a free buffet lunch surely designed to (successfully) attract government officials.

Despite the festive atmosphere, tensions were high. Many long-standing investors in the mining industry felt under siege by the resource nationalist sentiments being expressed by many Namibians and their political leaders. CoM CEO Veston Malango began his presentation on "Mining Industry Performance in 2014" by sharing a front-page headline (Figure 5.3.3) from a tabloid-style Namibian newspaper. "Namibia Gets Crumbs from N$20 Billion Mining Windfall," it declared. Malango described the headline as "the reason why we must share our tremendous accomplishments broadly." His sentiments were echoed in other presentations, nearly all of which began with a detailed report on corporate social responsibility and tax payments and royalties accruing to the GRN.

Figure 5.3.3. Headline of the *Namibian Sun* on May 24, 2014 (*Namibian Sun* 2014)


NAMIBIA Sun tells it all

Michelle wants more support for Miss Namibia P15

AVID ACCUSED PLEAD INNOCENCE P2 | MALEMA'S ADVICE TO LOCAL YOUTH P3

Namibia gets crumbs from N$20bn mining windfall

Namibia continues to receive minimal returns from her mineral riches, with the lion's share of revenue being shipped abroad.

WINDHOEK DENVER ISAACS

Although the mining sector has reported combined revenues of N$21 billion in 2013, the Namibian government only received N$3 billion, or 15%, from this through royalties and taxes.

This was confirmed by the latest annual review of the Chamber of Mines in Namibia, underscoring the need for local value addition in the sector responsible for nearly 10% of GDP.

The mining sector is said to have generated N$11.3 billion of additional value in 2013, with diamonds responsible for around N$8.23 billion of this.

Namdeb's total turnover for 2013, according to the chamber statistics (including Namdeb and Debmarine Namibia) was approximately N$924 billion.

Paladin Energy's Langer Heinrich Uranium mine, said to have sustained consistent levels of production, recorded a turnover of N$2.254 billion.

The chamber review also lists the 2013 turnover for Areva Resources Namibia, builders of the Trekkopje uranium mine that has been put on hold.

The company reported turnover of N$52.5 million, thanks to a water supply agreement with NamWater

Only a few years earlier, there had been little need for such arguments. Instead, support for foreign investment had simply been political common sense. Despite SWAPO's antagonistic language toward foreign investors and calls for nationalization prior to independence (Chapter

4), the formerly-Marxist party transitioned into one of the most investor-friendly governments on the continent (World Bank 2008) after independence. Namibia became a "typical neoliberal state," which, as described by Harvey (2005, 70), "side[s] with a good business climate as opposed to collective rights." This strategy was welcomed by the Western actors that provided the GRN with aid and much-needed foreign investment during its early statehood (Egge 2014; Lindeke 2014). By the mid-2000s, Nicholas Kristof (2006) was even commending the GRN's efforts to attract garment manufacturing in the *New York Times*, describing Namibia as a "pioneer…stable, pleasant and safe, and its government has tried hard to entice foreign investors." Although "tenderpreneurs"[129] played an oft-criticized role in the newly-independent GRN's attempts to attract mining investment, there was no substantial government involvement in mining outside of the diamond sector during this time.

Although GRN representatives certainly advertised Namibia's "investor-friendliness" more widely to international audiences than to domestic ones after independence, there was little foreign investment "double speak" of significance prior to 2008. SWAPO leaders regularly praised foreign investment as key to economic growth in foreign as well as domestic settings (e.g., *The Namibian* 2007a and 2007b). Former President Pohamba (2005), for example, issued a SWAPO statement shortly after his election stating, "[w]ith increasing competition, we must work harder to make Namibia more attractive for investors. This is a [sic] imperative for our efforts to empower our people economically while fighting poverty and unemployment."

Each uranium industry stakeholder I interviewed cited Namibia's pro-foreign investment policies in mining as a primary determinant of the intensity of its uranium rush. While mining

[129] In Namibia, the term "tenderpreneur" typically refers to local actors who own a small stake or a license (e.g., a mining exploration license) in a project to help foreign investors meet local participation goals or requirements. It is also sometimes used to refer to individuals who consistently seek to profit from government contracts.

companies understood that SWAPO was under populist pressure, most, according to my interviews, trusted that SWAPO's post-independence support for foreign investment would defuse such tensions. As has been said about the administration of former South African President Thabo Mbeki (see Bond 2004 and Hart 2014), Namibia's investors were confident that the GRN would "talk left, walk right" in response to resource nationalist sentiments.

By the mid-2000s, however, the GRN's foreign investment-friendly strategy was under domestic fire. Public criticism of foreign investment rapidly escalated with increases in unemployment and inequality that defied booming commodity prices. By 2008, unemployment in Namibia had reached a post-independence high of 52 percent. Inequality remained roughly as high as it had been in 1993, just a few years after the end of apartheid. Opposition movements and protests, including several riots led by the high-profile Children of the Liberation Struggle (CLS) or "Struggle Kids,"[130] were gaining momentum.

5.4 Introducing Epangelo

On July 8, 2008, the GRN responded to resource nationalist pressures by establishing a state-owned mining company named Epangelo. Epangelo means "government" in Oshiwambo, Namibia's most commonly-spoken first language. Although its name lacked subtlety, Epangelo's implementation was politically-tentative. It was officially introduced, for example, as a "private company with the Government of the Republic of Namibia as the sole Shareholder" (Epangelo 2008). Despite high commodity prices and the headline-grabbing uranium rush, the GRN did little to publicize Epangelo or put it into action. Its introduction was not mentioned in either the private *The Namibian* or the state-owned *New Era*, Namibia's two most-prominent media outlets. One of my GRN informants "speculated" (in their words, but they spoke from a position

[130] "Struggle Kids" refers Namibian youth who were born in exile during the liberation struggle.

of knowledge) that the goal of the initial announcement was simply to assess industry resistance to the idea of a state-owned mining company (Interview G). Establishing such a company had been a SWAPO platform issue prior to independence (SWAPO 1981), and some SWAPO members thought the public might respond favorably to its delayed implementation. With little beyond GRN paperwork to signify its existence though, my interviews with mining industry stakeholders indicated that Epangelo received little attention, let alone resistance, in these early months.

In December 2009, the GRN gave Epangelo a bit more credibility by allocating N$1.5 million (roughly $160,000 at the time) for its operations and hosting a press conference to announce its existence. Minister of Mines and Energy Erikki Nghimtina explained the decision to establish Epangelo by noting that

> with changing dynamics in the global mining industry our thinking on the role Government plays with respect to the management and exploitation of resources have [sic] gone through an evolution…in dealing with other countries we learned how their state mining enterprises…play a significant role in the development of their mining industries and their ability to generate significant revenue for their fiscus. (Nghimtina 2009)

Despite the fact that mining accounted for 60 percent of Namibia's export earnings, Nghimtina continued, it represented only 7 percent of government revenues. Epangelo, he argued, would ensure "that Namibians, through their own company, acquire a meaningful stake in their mineral wealth." The GRN would serve as the trustee of that resource wealth on behalf of Namibians. During a later press conference, Nghimtina identified the state-owned mining entities of China, Angola, Brazil, and Russia as sources of inspiration for Epangelo.

Nghimtina's 2009 announcement was far more widely covered in the Namibian press than Epangelo's 2008 establishment (see, for example, Weidlich 2009). Still, it attracted only minor public attention, and mining companies voiced few public concerns about its

establishment. This was understandable. Epangelo's $160,000 budget as of early 2010 was unlikely to get it far in a mining industry where a single haul truck can cost upwards of $4 million. Uranium industry stakeholders told me that Epangelo's establishment was certainly noted in the industry, but it was not perceived as a threat. Most viewed it as either a mild nuisance or, in the words of one mid-level mining company manager, "just another way to milk a morsel more money from mining" (Interview T).

5.5 The Strategic Minerals Policy

Epangelo's backseat role in Namibian mining continued until early 2011. On April 20, 2011, Nghimtina's successor at the Ministry of Mines and Energy, Isak Katali, shocked mining industry stakeholders and international commentators by introducing what became known as the Strategic Minerals Policy (SMP). Announced rather inconspicuously as part of Katali's annual budget speech on the floor of the Namibian National Assembly, the SMP stated that Namibia's Cabinet had decided to "declare certain minerals as controlled and high value minerals or strategic minerals" (Katali 2011). Future exploration and mining licenses for these "strategic" minerals, which included coal[131], copper, diamonds, gold, uranium, and rare earth metals, would be allocated to Epangelo. The announcement of the SMP came only a few months after then-President Jacob Zuma launched South Africa's new state-owned mining company, a decision that had ignited regional concerns with resource nationalism among foreign investors[132] (see *The Namibian* 2011a and 2011d).

[131] Coal was dropped in the Cabinet decision later released by the GRN Ministry of Information and Broadcasting. Oil and natural gas were not included in the initial SMP, but the GRN included an option to add additional resources in the future.

[132] It was a rare case of South Africa following the lead of Namibia (which had established Epangelo in 2008) instead of vice versa.

Katali's justification for the policy further catalyzed foreign investors' concerns. He argued that he and others at the MME were driven to action by their rising awareness of "phenomenal amounts [of mining transactions] being concluded outside the borders of Namibia, without ministerial approval, which only benefits [sic] a few with no tangible benefits accruing to state revenue coffers." The foreign investors making these transactions, he continued, were guilty of "wild speculation" that effectively held the GRN "hostage" and without adequate revenue. Thanks to this "disturbing phenomenon," he continued, Namibia had become an "Eldorado of speculators and other quick-fix, would-be mineral explorers" whose operations were funded "on the back of the Namibian government." Katali later cited the uranium rush, which had been at its full strength until the Fukushima disaster just a few weeks earlier, as an example of this phenomenon. Echoing the arguments made for Epangelo's establishment a few years earlier, Katali and other SWAPO officials who reinforced his message in the following days (see, for example, Duddy 2011a) argued that the GRN's inadequate mining participation meant that the sector was not contributing its "fair share" to GRN revenues. Katali elaborated,

> [t]he [mining] sector accounts for 25 percent of national income and 15 percent of gross domestic product. However, the mining sector's contribution to government revenue is not commensurate with its share to the gross domestic product…This means that Namibia benefits from its natural endowment mainly through rent-seeking. This situation is untenable.

Instead of Epangelo being the actor required to seek out mining opportunities, the SMP would require foreign investors to negotiate with Epangelo for shares in mining projects. Katali called this change long overdue, claiming that Epangelo's participation would finally make, "the government and the people of Namibian [sic] meaningful participants in the mining business rather than rent-seekers; ensuring a sense of *ownership* of natural endowment by the people of

Namibia [emphasis added]." In other words, once the ownership issue was addressed, Namibia's natural resources would finally become *national* resources.

When approached for comment by *The Namibian* (Duddy 2011c), Katali dismissed industry concerns that had, unsurprisingly, immediately followed his speech. There should be no confusion in the industry, he said, because "Epangelo will have the exclusive exploration and mining rights, all 100 percent of it, of all these strategic minerals." As is often the case in debates over resource nationalism, Katali framed resource ownership in binary terms: resources can be owned by the government or by foreign investors. Other GRN officials attempted to re-frame the SMP as a "win-win" partnership for foreign investors, but Katali's resource nationalist language ("Eldorado of speculators," "rent-seekers," etc.) had already catalyzed industry panic.

Upon my arrival in Namibia in May 2011, the airwaves and newspapers were filled with debate on the implications of the SMP (e.g., Duddy 2011a, 2011b, and 2011c; Sasman 2011; *The Namibian* 2011b, 2011c, and 2011e). The biggest concern was that the SMP would ultimately entail the full nationalization of Namibian mines, including those in development in association with the uranium rush. Many media and industry figures, however, also questioned the GRN's ability to implement the SMP and its awareness of the policy's long-term implications. At the 2011 Chamber of Mines meeting, I recorded a speech by Roy Miller, a geological consultant and former Geological Survey of Namibia employee. He asked, with audible exasperation,

> Why does government's Epangelo want to get involved in the bottomless pit of high-risk and high-cost exploration lasting decades with taxpayers' money when the success rate [of exploration projects] may be only one in a thousand?... policy somersaults destroy a country's positive reputation, create unfathomable uncertainty and drive away investors who take huge risks and have to invest with the long term in mind.

"Taxpayers should be screaming blue [sic] murder," he concluded, noting that, if the SMP was implemented, Namibia would be unlikely to have any mining at all by 2040.

Unsurprisingly, the CoM responded to the SMP with equally dire warnings. Within two weeks of Katali's speech, Vincent Malango, the CoM's CEO, publicly cautioned that "[t]he Chamber of Mines is acutely aware of the impact that such uncertainty [regarding the SMP] has on the global investment community's excellent regard for Namibia as an investment destination" (reported in Duddy 2011a). The CoM released yet another tersely-worded statement a week later, this time personally directed to Katali. Reinforcing the antagonism between resource nationalism and foreign investment, the statement read,

> Government needs to be cautioned against policy measures which will deny explorers and developers the ability to raise funding on capital markets…Given how speculative early exploration activities prove to be, the further danger is that new deposits will not be found in the absence of foreign risk capital, hindering the development of Namibia's natural resources for decades. (CoM 2011)

The CoM went so far as to encourage the GRN to consider a capital gains tax in lieu of the SMP, arguing that "the concept of taxing capital gains is well understood internationally, and indeed expected by many investors" (see also Duddy 2011b).

International media outlets were quick to criticize the SMP. Reflecting Namibia's previous "investor-friendly" reputation, the editorial team of *The Australian*[133] (2011) admitted that it would have listed Namibia "well down the list of probably/possibles" for resource nationalism but "the Namibian development underlines that investors have always to keep that in mind." David Hargreaves (2011), a mining industry analyst who produces the industry-respected *The Week in Mining* newsletter, said "[j]ust as you give a nation a clean bill of health, it goes on a foot-shooting spree." Under headings like "Wish You Were Mine," publications like *The Economist* (2012a) that had previously sung its neoliberal praises now made Namibia an example of the perils of resource nationalism in Africa.

[133] *The Australian* is the top-selling Australian broadsheet newspaper.

As discontent spread, even opposition politicians who had previously criticized cozy relationships between SWAPO leaders and foreign investors decided to take advantage of a rare[134] opportunity to attack SWAPO. Martin Heita, Secretary of Energy and Mineral Resources for the opposition Rally for Democracy and Progress (RDP), characterized the SMP as the "first step to nationalization" and described SWAPO as akin to the Zanu-PF government in Zimbabwe (Sasman 2011). Echoing an argument often made by academics and policymakers regarding negotiations between foreign investors and governments (e.g., Hilson 2012), Heita noted that Epangelo "has no capacity, let alone financial resources, to negotiate with these multinational companies." He labeled the SMP a threat to the Namibian Constitution, explaining,

> Namibia is a free market economy and we have not heard yet whether Government is attempting to challenge that constitutional provision. Government should be honest enough to inform the nation that it has changed its economic policy position of no active participation[135] in the mainstream of the economy. (reported in Sasman 2011a)

Excluding Namibia's state-owned *New Era* newspaper, my comprehensive analysis indicated that domestic media coverage of the SMP was negative across all major news outlets (*Namibia Economist, Windhoek Observer, Namibian Sun, The Namibian*). The most influential coverage was likely a front-page editorial that ran in *The Namibian* one week after the SMP's announcement. Titled "A Recipe for Disaster," it began, "[r]eckless. Irresponsible, Irrational. Drastic. Draconian. Destabilizing…these words should not be used lightly but that is exactly the sum of Mines and Energy Minister Isak Katali's surreptitious announcement" (*The Namibian*

[134] SWAPO members often paint criticisms of SWAPO as attacks on the liberation struggle it lead, making such criticisms difficult for opposition parties to execute well. See also Weylandt (2016) and Melber (2015).

[135] Heita's statement conveniently ignored the fact that other GRN SOEs (e.g., Air Namibia) owned assets equivalent to 40 percent of Namibia's total GDP at the time, but it made for a compelling campaign speech in the lead-up to the 2012 party elections.

2011b). While the editorial characterized the SMP as "a sure way to chase away the same private investors who we claim to want to attract," it also acknowledged resource nationalism's appeal:

> No doubt many Namibians will commend Minister Katali for the intention to have Namibians own, run and benefit from the resources underground. But Katali's statement is at best populist. As a policy decision it is as suicidal as his suggestion when he was deputy minister of lands that Namibia take the Zimbabwean example in land reform.[136] It may sound great that Namibian nationals should take over and run their own affairs, but that is not the way the world operates…it is not mere coincidence that Namibian companies that are listed on the international stock exchanges have lost massive value following Katali's policy announcement…Surely there must be better ways, even through new laws, for Namibians to benefit from its resources than simply resorting to knee-jerk nationalization. Government cannot have its cake and eat it. (*The Namibian* 2011b)

When I asked GRN officials how they had interpreted reactions to the SMP like that of *The Namibian*, those in SWAPO leadership roles typically held the party line that the GRN is responsible to its citizens, not, in the words of one high-level SWAPO informant (Interview Q), "catering to the whims of *The Namibian*."[137] Several lower and mid-level bureaucrats, however, admitted that *The Namibian*'s editorial came as a shock and, in the words of one, led to "many meetings behind closed doors in the upper building [the top levels of the MME]" (Interview U). *The Namibian* is Namibia's most-read and most-respected newspaper. It is widely distributed throughout the country, with a circulation of 45,000 on Mondays-Thursdays and 71,000 on Fridays. Despite official rhetoric, it is unlikely that SWAPO leaders took its response lightly. In fact, as I discuss further below, SWAPO officials would soon investigate — or were perhaps already investigating — options to pursue the newspaper's recommendation that the GRN seek out "better ways…for Namibians to benefit from its resources" (*The Namibian* 2011b).

[136] Notably, this approach has gained ground within SWAPO again since 2017 in response to demands for land redistribution by youth movements like Affirmative Repositioning.

[137] *The* Namibian, which often publishes critical pieces on the GRN, has a contentious relationship with SWAPO. GRN offices were actually banned from purchasing the paper between 2000 and 2011.

5.6 Policy Uncertainty

In contrast to its declarative announcement, the SMP left uncertainty in its wake. Initially, many in the mining industry and civil society assumed it meant Epangelo would be allocated stakes in existing as well as new licenses, after which it would presumably form joint ventures with private companies (Hopwood 2013; Weylandt 2017). Responding to industry demands for clarification, Katali announced on May 12, 2011, that codifying the exact provisions of the SMP was his "highest legislative priority." His promise of certainty was followed, however, by months of silence, during which Epangelo remained as undefined and un-influential as it had been prior to the SMP. During my summer 2011 visit to Epangelo's headquarters, I was able to interview all of its full-time employees in a single afternoon. Even more tellingly, its $400,000 budget for 2011-2012 was only roughly double its initial budget in 2009.

I was not the only one who noticed the gap between rhetoric and reality in Epangelo's role. Struck by the global and domestic opposition to the SMP and relieved when international attention turned to resource nationalism in South Africa (Interview Q, SWAPO leader), SWAPO was not in a hurry to turn the SMP into law. In a 2012 interview, Minister of Finance Saara Kuugongelwa-Amadhila went so far as to question whether Epangelo was "practical" (*Windhoek Observer* 2012). She suggested that it should seek capital through global financial markets rather than from the GRN. By 2014, many of the ordinary Namibians with whom I spoke in Windhoek, Swakopmund, and Lüderitz — three sites that likely have among Namibia's highest levels of awareness of mining developments due to their political centrality and/or local mining industries — could not recall Epangelo's name. A front-page headline that summer in *The Villager*, a small news publication circulated in Windhoek and on the Erongo coast, asked, "Is Government Killing Epangelo?" (Halwoodi 2014).

In the mining industry, initial shock following the SMP's announcement had by 2014 turned into frustration, confusion, and a simple desire to just know where the GRN stood. The SMP's uncertain implementation had negatively affected Namibia's "good-for-business" reputation. In the Fraser Institute Index, a popular industry metric for evaluating the foreign investment-friendliness of mineral exporters, Namibia had slipped from 30th to 45th between 2010 and 2011. Fraser's report featured the headline "Namibia: From Hero to Zero in One Simple Step" (Fraser Institute 2012). It also included anonymous quotes from industry actors, one of whom, who was described as the president of an exploration company, noted,

> Take a country up there with Botswana in the 'let's encourage foreign investment' stakes, throw in some ill-considered state mining company, define many common minerals as 'strategic,' moot a change in the laws, and hey — presto! You end up on the same level as Zimbabwe! When will politicians ever learn? Win-win means just that. (Fraser Institute 2012)

With such messages proliferating in mining industry publications, representatives of organizations like the CoM were struggling to attract new investments. Their ongoing concern kept the SMP in the Namibian media (e.g., Duddy 2012c and 2012d; *The Namibian* 2012a), but media coverage did not bring about policy clarity. The CoM desperately concluded in its *2012 Annual Review* by admitting that, despite its best efforts to explain the value of foreign investment to the GRN, it was obviously "still not beating our drums loud enough" to get results (CoM 2012, 9). Speculating that perhaps the GRN just wanted to "save face" in front of its domestic audience, industry representatives told me that they resorted to tracking down GRN representatives at international events like Australia's "Africa Down Under" conference.

Despite the policy chaos it created, the SMP may have been a successful political strategy on SWAPO's part. In the lead-up to national elections in 2014, the SMP signaled to SWAPO's base that the party's leaders, who had espoused nationalization prior to Namibia's independence,

were willing to challenge the dominance of foreign investment. This was certainly the message of an opinion piece in *The Namibian* by Ben Uugwanga. Although the piece merely identified him as "a community activist with a keen interest in international relations," Uugwanga is a business consultant and SWAPO supporter. He argued that industry responses to the SMP represented "typical rhetoric from free-market evangelists who would like to maintain the current status quo for the benefit of the capitalists only" (Uugwanga 2012, 1). Instead, he argued, the SMP should be viewed as

> "a progressive direction towards a new paradigm…driven by the need to ensure that the Namibian state, on behalf of the Namibian people, control, own and manage strategic resources…This paradigm shift is crucial and all African governments should emulate it to get rid of, among others, the exploitation of African wealth without the actual benefits. Wealth during colonial times benefited the capitalists and their home economies…With independence *western jurisprudence* failed to pay reparation and secure the ownership of the plundered wealth to its rightful owners…The argument that holds water thus far is that the wealth of individual countries should benefit them and not be exploited to benefit metropolitan economies which control the marketing, pricing and ownership of resource [sic] for their own benefit [emphasis added]." (Uugwanga 2012, 1)

In other words, legally-enshrined national rights to natural resources, as in the UN Human Rights Covenants, were not enough to ensure true resource sovereignty. A direct state ownership role was needed. Uugwana's attentiveness to international human rights law is verified by his reference to political rights and their intersection with economic rights later in the piece. "Other lessons neo-liberal capitalism has provided are the respect for human rights," he noted. "But these rights have to be accompanied by the guaranteeing of economic rights for the poor." His language echoed post-colonial arguments for the inclusion of resource sovereignty and economic rights in the creation of the UN Human Rights Covenants, as discussed earlier in this chapter.

My interviews, focus groups, and other interactions with ordinary Namibians in 2014 and 2015 indicated that the GRN's resource nationalist shift at least temporarily[138] alleviated many Namibians' frustrations with the power of foreign investors in Namibian mining. Many respondents, as noted earlier, could not remember the name of Epangelo, but they remembered that the GRN had done *something* to increase the GRN's ownership role in mining. While some of my industry interviewees interpreted the GRN's failure to advance the SMP as a sign of political or financial weakness (the latter of which certainly has a great deal of truth given Epangelo's budget), the SMP debate both reinforced the state as the guardian of mining-led development (discussed further in Chapter 6) and signaled to SWAPO's base that its leaders had not lost touch with the everyday struggles of Namibians. One focus group (FG 15) participant who sold mobile airtime along the side of a Windhoek street described SWAPO's resource nationalist shift as "a sign that they heard us, saw our pain, knew it was time to fill our bellies too."

In addition to this populism-appeasement explanation, another more uranium-centric explanation for the SMP's uncertain implementation emerged in my 2015 research. Epangelo's creation in 2008 came only a few months after the peak of the uranium rush. The GRN was awash in foreign investment, and the MME was swamped by, in the words of one GRN informant, "more applications to mine uranium than we knew there was paper…The phones rang and rang and rang, long past knocking-off time [close of business]" (Interview V). Several SWAPO leaders indicated that the party saw the uranium rush as an opportunity to pursue the kind of state role in investment that they had envisioned during independence negotiations, before they realized how dependent the GRN would be on De Beers and Rössing. Creating

[138] As I discuss in Chapter 6, these supportive sentiments appear to be waning as the reality of mining-led development continues to fall short of SWAPO's promises.

Epangelo, in the views of these informants, was an attempt to take advantage of the opportunity presented by Namibia's "uranium moment." By 2011, however, SWAPO leaders had realized that having a state-owned mining company did not guarantee its influence; foreign investors, in the words of one SWAPO Youth League[139] leader "didn't take the carrot. They needed the stick" (Interview W). The SMP was that stick. It forced foreign investors to take Epangelo seriously. Its 2011 timing, however, could hardly have been unluckier. Fukushima, while initially thought to be merely a setback for the industry, proved devastating in the longer term. Having gone from boom to bust yet again, the GRN, in the views of these informants, had little choice but to backpedal on the SMP.

Regardless of which narrative is more accurate, the uranium crash and subsequent declines in other commodity prices did little to alleviate most Namibians' concerns with the influence of foreign investors in their government and country. For many of the Namibians with whom I spoke in day-to-day interactions, focus groups, or interviews, the industry's crash merely reinforced the argument that Namibia could no longer afford to be dependent on foreign investors whose loyalty to Namibia and Namibians extended only to boom times. Although resource nationalism may indeed be associated with commodity price increases (Emel, Huber, and Makene 2011), my research indicates that it was certainly not limited to them in Namibia.

5.7 Reignited Debate and the 2014 Chamber of Mines Conference

Anti-foreign investment arguments were commonplace in SWAPO "town halls," opposition rallies, and youth demonstrations as the November 2014 elections approached.[140] In

[139] The SWAPO Party Youth League's growing willingness to contradict SWAPO leadership has been a catalyst in the party's leftward shifts on resource nationalism and land reform.

[140] This statement is based on town halls, protests, and political rallies I attended in Windhoek, Swakopmund, Lüderitz, Otjiwarongo, Aus, Oshakati, Tsumeb, Keetmanshoop, and Walvis Bay during the summer of 2014.

June 2014, advocates for resource nationalism created a new political party, the Namibian Economic Freedom Fighters (NEFF),[141] with a platform including full resource nationalization. The GRN and its SWAPO leadership regained public enthusiasm for Epangelo and co-opted the opposition's rhetoric accordingly. Under the leadership of Managing Director Eliphas Hawala, Epangelo released new investment goals, including developing mining industry assets of N$5 billion (roughly $400 million at the time) by 2015. In response to these developments, Namibian private practice lawyer and mining industry advocate Peter Koep (2014) submitted an editorial to the *Windhoek Observer* declaring Epangelo's operations to be illegal because the 1992 mining law had not been changed to reflect its creation. The letter highlighted Epangelo's legal and financial weaknesses and framed it as a corrupt project. Two weeks later, Epangelo's Hawala responded with his own opinion piece. In it, he stated,

> it was claimed [in Koep's piece] that Cabinet gave Epangelo preferential rights over diamonds, uranium, copper, gold and coal, which is virtually everything worth anything. To my knowledge Epangelo never received any preferential rights as claimed. Epangelo applied for all its EPLs like any other entity…Nevertheless, it is my opinion that Epangelo should get preferential treatment. (Hawala 2014)

Hawala's renewal of SWAPO's previous calls for Epangelo's "preferential treatment" catalyzed renewed industry panic. With uranium prices near record lows, mining companies were even less eager than they had been in 2011 to discuss what some industry stakeholders described to me in interviews as "free meals" for Epangelo (Duddy 2011d identifies similar rhetoric). Social media associated with Namibian mining featured apocalyptic concerns that the GRN was on track to lose the limited investment that remained in the wake of the uranium crash.

The significance of Hawala's letter, however, extended beyond its call to resuscitate Epangelo. The phrase "to the best of my knowledge" epitomized the uncertain state of foreign

[141] South Africa's Economic Freedom Fighters (EFF) were the inspiration for the NEFF, down to their red overalls.

investment and resource nationalism in Namibia in 2014. The very official tasked with managing Epangelo was guilty of adding a caveat to his analysis. Hawala's language demonstrated the state of confusion not only within the mining industry, but also within the GRN itself. This confusion had been on full display in my countless trips around the halls of the MME since 2011, during which I was often given contradictory information in quick succession. I was not the only one. GRN officials' responses to the questions of reporters, industry representatives, and researchers since the SMP's announcement had varied, in the view of one Namibian researcher, "in accordance with where you asked. Were they on the SWAPO beat? Or the foreign investment one?" (Interview X). The same politician who endorsed nationalist fervor at a SWAPO rally would describe a mining executive as a "good friend to Namibia" at an industry event. This was not entirely surprising. Like perhaps all governments, the GRN was toeing the line between competing masters: an increasingly-young electorate that was becoming less satisfied with SWAPO's post-independence achievements on a seemingly-daily basis (and increasingly willing to take to the streets) and an economy and government that relied almost exclusively on foreign investment. Unlike South Africa, however, the GRN was not applying the "talk left, walk right" rule. Instead, it seemed to have given up walking entirely.

Given this uncertainty — and despite its unenviable time slot immediately prior to the lunch break — attendees at the 2014 CoM conference greeted the scheduled presentation of Epangelo Managing Director Eliphas Hawala with rapt attention. In the weeks immediately prior to the conference, representatives of the MME had begun to hint that a new or amended mining policy incorporating the SMP was "imminent," although the details were still being finalized. Several industry stakeholders with whom I spoke immediately prior to the conference expressed optimism that Hawala's presentation would finally bring certainty to the industry. To the visible

frustration of many attendees though, Hawala's presentation on "The Role of Epangelo in the Namibian Mining Industry" provided sparse insights into its title subject. Instead, Hawala's presentation reviewed the definition and role of public enterprises in Namibia and Epangelo's history, funding mechanisms, and mission. Based on the sighs and shifting postures of those around me, this was not exactly cutting-edge material. Unsurprisingly, the Q&A following Hawala's presentation focused almost exclusively on Epangelo and the SMP. Visibly frustrated with Hawala's bureaucratic and tentative answers ("I believe the Cabinet is currently reviewing", "after a full review, my understanding is that the Cabinet plans to finalize," etc.), one attendee asked, "Is the SMP not implemented by Epangelo? Are you not, then, the one with answers?" The question was greeted with applause.

Just as Hawala began to provide another vague comment on the SMP's status though, Minister of Mines and Energy Isak Katali surprised seemingly all in attendance (including, visibly, Hawala himself) by rising from his unannounced position near the middle of the room. He had apparently joined the conference late enough in the day that his attendance had gone unnoticed by the conference organizers, who would have otherwise surely introduced him as per protocol. The SMP, Katali declared, had indeed been approved by Cabinet, and an amendment to the Minerals (Prospecting and Mining) Act of 1992 was forthcoming.[142] More importantly, he continued, its principles were reflected in a new project: the Husab uranium mine. This mine, Katali explained, was the "realization" of the SMP and "a new chapter in Namibian mining." Not-so-hushed whispers erupted among audience members. Seemingly off-the-cuff, as was often

[142] It is still forthcoming in May 2018. A recent editorial in the state-owned *New Era* newspaper described the SMP as, unfortunately in the eyes of the writer, currently "gathering dust somewhere in the corridors of power." The editorial concluded that the GRN should implement a policy of "state capitalism under which government controls production and the use of capital" (*New Era* 2017a).

his style,[143] Katali confidently concluded: "[t]his mine [Husab] is the child of a Chinese mining company father and a Namibian government mother, delivered by the midwife Epangelo, and devoted to developing all Namibians." Visibly shocked and overwhelmed by the audience's loud reactions, CoM CEO Veston Malango called for a tea break, during which Katali left the event.

5.8 Hybrid Ownership: The Husab Uranium Mine

Katali's statement made it clear that Husab was not just another uranium mine. It was a new path forward. While the industry had been preoccupied with the SMP, the GRN had been pursuing its own solution to the tension between foreign investment and resource nationalism. Husab's ownership structure, detailed below, was a product of the convergence of historical geopolitics (Chapter 1), China's nuclear energy rise (Chapter 3), the uranium market crash (Chapter 4), and the GRN's shift toward resource nationalism. In the eyes of its SWAPO supporters, the mine's ownership structure (90 percent CGN, 10 percent Epangelo) signaled that, in China, SWAPO had finally secured a willing and loyal foreign partner with whom to pursue the goal of national rights over natural resources. SWAPO no longer had to decide between the foreign investment it needed to keep the GRN afloat and the resource nationalism its constituency was demanding. It could pursue both at once.

Why did SWAPO embrace the Husab project as an opportunity to pursue an increased role for the Namibian state in mining? What makes this mine different from others developed in Namibia and beyond? Husab is not the only Namibian uranium mine with either foreign or domestic state ownership. Prior to securing a stake in Husab, the GRN already had a 3 percent stake in Rössing inherited from the apartheid South African government. Chinese investments

[143] Some analysts in Namibian civil society speculated that his initial declaration of the SMP in 2011 was off-the-cuff as well.

are also not the only foreign investments in Namibian uranium to involve a foreign state partner. Trekkopje is owned by France's state-affiliated Areva. Husab's appeal was based in its precedent-setting ownership role for the GRN via Epangelo, which was in turn grounded in the strong historical relations between SWAPO and the Communist Party of China (CPC).

Exploration on Husab began in 2006 during Namibia's uranium rush. The project was still under development when the 2011 uranium crash occurred and the SMP was announced.[144] Its exploration license was held by Australia-based Extract Resources. At the time, the largest shareholder in Extract Resources was South Africa-based exploration firm Kalahari Resources Ltd. with 40 percent ownership. Minority stakes were held by Rio Tinto (15 percent) and Apac Resources (20 percent), a Hong Kong-based company associated with "corporate raider" Lee Ming Tee.[145] After the announcement of the SMP, Epangelo had begun negotiations with Extract Resources for a stake in Husab. Because the SMP had been announced while Extract Resource's application for Husab was still being evaluated, its classification as an existing license (which would be unaffected by the SMP) or a new license (which would be affected by the SMP) was unclear. The project was behind schedule and over budget, and there were rumors in the industry that Extract Resources was looking for other developers for the site, including Russia's Rosatom, Australia's Paladin Resources, and France's Areva. Rosatom had even submitted an application to the GRN to develop Husab, in which it had expressed its willingness to spend up to $1 billion on its development. According to my media analysis and interviews with industry stakeholders, Chinese SOEs were not yet considered to be parties of interest in industry or public discussions.

[144] Information in this paragraph was shared with me by a mining industry stakeholder acquainted with the mine's history. I do not share further information about the informant in Appendix 1 to protect their privacy. Chinese officials with whom I spoke were unwilling to comment on the mine's ownership, so my knowledge of how the mine's ownership structure transpired stems only from interviews with GRN officials and industry informants.

[145] I was not able to track down information on the owners of other minority stakes in Extract Resources.

Extract Resources was not keen to offer the GRN either a free ownership stake in Husab or a multi-million-dollar loan to finance the GRN's participation. In fact, Extract Resources behaved in a way that some of my GRN informants characterized as mildly disrespectful to Epangelo. In May 2011, shortly after the SMP was announced, Chairman of Extract Resources Steve Galloway was interviewed by *The Namibian*'s Jo-Maré Duddy (2011d). Galloway asserted that he had little doubt that Extract Resource's mining license would be approved because the company had "done a [sic] 100 percent of our work." Katali replied to Galloway's comments by telling Duddy (2012b) that

> [e]ach application will have to be considered on its own strength without prejudice…It should also be clear that an application remains an application, where there is no guarantee that it will be successful until it has been assessed and has been determined to have satisfied the Minister.

Regarding Epangelo, Katali noted that "many countries worldwide have state-owned mining companies who prefer to cooperate with a similar company [Epangelo] in Namibia" (Duddy 2012a). At the time, industry and civil society stakeholders interpreted Katali's comment to be a reference to Rosatom (most likely) or Areva. Again, Chinese SOEs were not yet considered to be parties of interest.

Within a few months, however, China's CGN was the actor expressing willingness to cooperate with Epangelo. In early 2012, China's CGN, through its Taurus Minerals subsidiary,[146] took advantage of falling uranium prices and the financial difficulties of Extract Resources to launch a successful $2.4 billion takeover of the company. The transfer of the exploration license to CGN presented the GRN with an opportunity for re-negotiation on Epangelo's role, particularly given the already-friendly relations between the CPC and SWAPO. The GRN

[146] Taurus Minerals is a Hong-Kong-registered entity jointly owned by CGN and the China Africa Development Fund.

granted Swakop Uranium (formerly Taurus Minerals, but re-branded) a mining license conditional upon successful negotiation with the GRN for equity participation by Epangelo. When negotiations ended in November 2012, the GRN had obtained a 10 percent stake for Epangelo in Swakop Uranium and its Husab mine, then considered to be the world's third-largest uranium-only deposit (since upgraded). The deal, then valued at roughly $200 million, made Husab effectively owned 90 percent by the Chinese government (through CGN) and 10 percent by the Namibian government (through Epangelo). The Namibian stake was funded through a Chinese government loan to be repaid with future dividends from the project. In a reflection of the skepticism with which many Namibians regard both foreign investment in general and China in particular,[147] this loan was a tightly-held secret until a GRN official confirmed its existence to the media following President Geingob's March-April 2018 trip to China.[148]

Construction on the mine began in April 2013. As shown in Figure 5.8.1, the mine's development has been difficult to miss in Erongo. Most equipment has been transported via the port at Walvis Bay. In 2015, equipment for Husab accounted for 11 percent of the total weight of goods transported through Walvis Bay (Interview Y, Port of Walvis Bay official). The port itself is undergoing a $330 million expansion project led by the China Harbour Engineering Company to accommodate future exports from Husab, among other purposes.[149] Initial mining operations began in 2014 with the removal of overburden. By 2016, more than 200 million metric tons of

[147] I describe anti-China sentiments in Namibia in more detail in Chapter 6. See also DeBoom (2013), which finds that Namibians have more pessimistic views of foreign investment from China than from the U.S. or South Africa.

[148] I speculate that this announcement was made, albeit perhaps not with the full consent of higher-ranking SWAPO officials, because it facilitated the GRN's argument that it was able to negotiate with the Chinese government. Geingob's trip to China was widely framed in Namibia as a "begging tour" (see, for example, *Windhoek Observer* 2018). Prior to this, it took me nearly two years of interviews with GRN officials to confirm the loan's origin.

[149] The expansion will also include a fuel oil terminal and expanded capacity for Namibia's fishing industry. GRN officials have admitted that a potential Chinese naval base has also been discussed.

overburden rock had been removed. Primary construction ended in mid-2016, after which the mine produced its first drum of yellowcake on December 30, 2016 (Figure 5.8.2). Upon reaching full production in late 2018, Husab will produce 1.5 times the volume of uranium produced in 2014 by Namibia's two other operating uranium mines, Rössing and Langer Heinrich. It is expected to have a production lifespan of 20 years at 15 million pounds of uranium per year, an amount roughly 40 percent of China's annual uranium imports. In addition to making Husab the world's second-largest uranium mine, this output is expected to make Namibia the world's second-largest uranium producer after Kazakhstan.

Figure 5.8.1. Husab materials in transport (Photo: Swakop Uranium 2018)

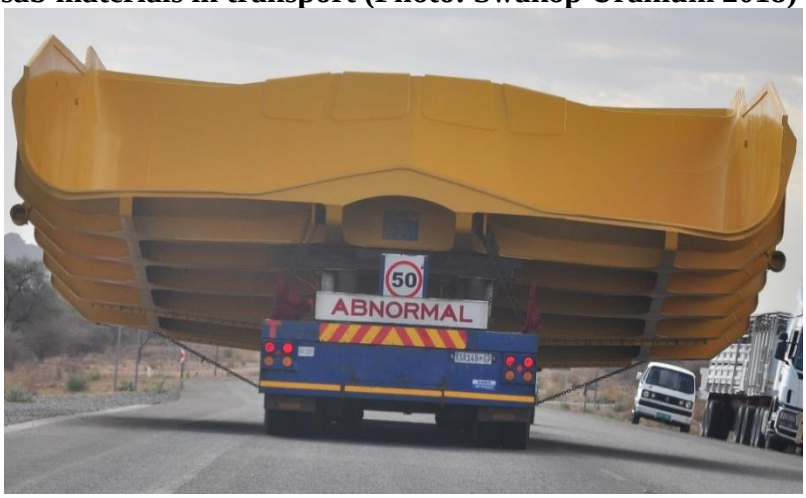


Figure 5.8.2. First yellowcake produced at Husab mine (Photo: Swakop Uranium 2018)

Husab is both the Chinese government's largest investment in Africa to date and the largest post-independence investment in Namibia. China's investment in the project is expected to reach $5 billion by the time the mine begins full-capacity operations in late 2018. This figure represents over 70 percent of the roughly $7 billion that mining industry analysts expect China to invest in Namibia's uranium industry by 2019 (Interview Z; confirmed in U.S. Department of State 2015). Its financial scale is not only significant in the context of Namibia. Of the $846 million in global reported spending on non-domestic uranium exploration and development expenditures in 2015, over $700 million was for Husab (NEA and IAEA 2016). Its construction has been featured in media outlets that typically pay little attention to Namibia's uranium industry, including, most recently, *The New York Times Magazine* (Larmer 2017) and the *Economist* (2018).

5.9 State-State Solidarity: Husab's Hybrid Benefits

Postcolonial scholars of development and the global South have challenged dualisms like colonizer/colonized (Bhabha 1994), West/Rest (Hall 1992), and ruler/ruled or dominator/dominated (Bayart 1989). Husab's dual state-state ownership structure complicates simple narratives of the mine as merely another example of the exploitation of resources in relatively-poor countries by companies based in relatively-rich ones (see Chapter 4). As I detail in this section, the mine's composite ownership structure offers mutual benefits to both the Namibian and Chinese governments. In a material reflection of the geopolitical rhetoric of "mutual benefit," it is designed to provide a consistent revenue stream for the GRN *and* a consistent uranium source to fuel the Chinese government's nuclear power ambitions.

Both its Namibian and Chinese owners have framed Husab as a materialization of "south-south solidarity" and "mutual benefit" that signals a new ownership model for the mining

industry. President Geingob emphasized this point in his 2015 Forum on China-Africa Cooperation (FOCAC) address in Johannesburg. “In Namibia,” he noted, “we can attest to a number of key investments by China which have made a significant impact on our economy.” Geingob went on to describe the Husab “megaproject.” He concluded, “[n]ow that we have attained independence and put in place a conducive investment climate, we are keen to join our longstanding friends [China] as we engage in the second phase of our struggle, which is the struggle for economic emancipation” (Geingob 2005). Swakop Uranium’s CEO, Zheng Keping, made a similar argument at the event celebrating Husab’s first yellowcake in December 2016. Emphasizing the mine’s ownership by the Chinese and Namibian governments on behalf of their respective populations rather than by a private company on behalf of its shareholders, he announced, “[t]his mine, Husab, is the historic moment that we have been striving for. It will be engraved into our own memories and the annals of the company and the nation.” This rhetoric makes it clear that Husab is not just another source of foreign investment. For both its Namibian and Chinese owners, it marks a departure from historical ownership patterns in extractive industries. Even the very leadership of Swakop Uranium is perhaps symbolic, with a Chinese Chief Executive Officer and a Namibian Senior Vice President.

While the governments of both countries are set to benefit substantially from the mine, the distribution of its political benefits appears to be more skewed toward the GRN than the mine’s 90/10 ownership structure would suggest. First, in practical terms for the GRN, Husab is a revenue lifeline. As described in Chapter 4, Namibia’s uranium industry would likely be near collapse were it not for Husab. Were Namibia’s existing uranium infrastructure to begin to disappear, re-attracting investment into a country with very-low-grade deposits in a water-scarce environment (see Chapter 4) would be a difficult task, even if uranium prices were to increase.

Husab offers more short-term financial benefits for the GRN as well. According to calculations shared with me by a Swakop Uranium representative, the mine is expected to contribute nearly $700 million in yearly export revenue (Interview AA). This amount is equivalent to roughly 7 percent of Namibia's current annual GDP of $10.2 billion. Husab will also increase the value of Namibia's exports by roughly 20 percent. Annual contributions to the GRN through Epangelo's ownership share and royalties/taxes are estimated at roughly $170-200 million, which is about 5 percent of the GRN's current annual revenues of roughly $4.2 billion.[150] Importantly, these revenues suggest that the GRN may be able to pay off the roughly $200 million Chinese government loan that facilitated its ownership stake in Husab relatively quickly.[151]

These revenues are essential in light of the uranium crash and Namibia's current economic crisis (see Chapter 4). Excluding *The Namibian*, which typically takes a pragmatic tone,[152] Namibia's domestic press has described Husab as something of an economic savior. Recent articles have been titled "Husab Mine Could Save Decaying Economy" (*Namibia Economist* 2016a) and "Namibia Hopes to Double Mining Windfalls by 2022" (focused on Husab; *New Era* 2017a). China's state-owned *Xinhua* media outlet has discussed the mine in similar terms but with a strategic emphasis on its local employment implications. Recent articles included "Chinese-Operated Mine Becomes Big Employer in Namibia" (*Xinhua* 2018a) and "Husab Uranium Mine Tops Job Creation List in Namibia's Mining Industry" (*Xinhua* 2018b).

[150] There will of course be a delay in the accumulation of these revenues due to the need to repay Epangelo's loan through mine proceeds.

[151] Namibia's current economic recession is a significant hurdle to this repayment and is likely behind the GRN's recent renegotiation of the loan's terms in April 2018.

[152] The closest *The Namibian* came to expressing these sentiments was likely a 2014 article titled "Start-Up at Husab Mine Creates Big Expectations" (*The Namibian* 2014a).

Emphasizing the mine's employment implications is strategic given sentiments in Namibia that Chinese companies employ their own workers (discussed further in Chapter 6).

Husab's state-based ownership also benefits the Chinese government. As detailed in Chapter 4, Namibia has become China's largest foreign source of uranium. This situation has far more to do with Namibia's political stability and historical relations with China than its geology. Namibian uranium is valuable to China because it is reliable, not because it is the world's best. China's government thus has a vested interest in the continued stability of the GRN. Contrary to arguments by some Western officials and foreign investors that China is actively undermining democratic regimes like Namibia's (see Section 5.10), China's top investment priority, in my evaluation, appears to be stability. In Namibia, China has found a stable partner; my research leads me to suspect that regime type (e.g., democratic, autocratic) matters far less to the Chinese government than such stability.

By directly involving the GRN in the Husab project, China has also all-but-guaranteed future GRN support for the mine. This ensnares the GRN in what public choice theorists term "regulatory capture," or a situation in which an organization has competing mandates to both promote and regulate an industry (see Stigler 1971 on regulatory capture and Hamby 2016 on regulatory capture in Namibia; I discuss this further with regard to corruption in Chapter 6). For CGN, however, this situation means that it may enjoy more regulatory flexibility than might otherwise have been the case. By ensuring that the GRN remains financially-afloat, China's government is also making an investment in Namibia's future political stability. In the grand scheme of a $5 billion investment capable of producing at least 15 million pounds of yellowcake per year — a figure that represents roughly 40 percent of China's total yellowcake imports for

2014 — over at least a 20-year lifespan, a 10 percent share for Epangelo is a relatively small price to pay for stability and reliability.

Second, Husab has almost singlehandedly made Epangelo a serious player in Namibia's mining industry. China's own SOEs were a model for Epangelo's creation in 2008 according to MME Minister Katali, and it is Chinese investment that is facilitating Epangelo's growth. Prior to its negotiations with CGN in 2012, Epangelo had an operating budget of $400,000. It had a mere 12 exploration licenses, none of which were in uranium. Today, few acquainted with Namibian mining question Epangelo's importance. According to the most recent budget speech of the Minister of Mines and Energy, Epangelo now has more than 60 exploration and mining licenses and a GRN-provided budget of N$10 million (roughly $820,000), which is supplemented by earnings from its projects (Kandjoze 2017).[153] Even more impressively, Epangelo has successfully negotiated for ownership stakes in all new mining projects in Namibia since 2016. Husab was a turning point for Epangelo and the GRN's pursuit of resource sovereignty.

Epangelo's involvement in Husab also has geopolitical public relations benefits for the Chinese government beyond the stability benefits discussed above. Namibian officials cite Epangelo's involvement in Husab as proof of the Chinese government's "mutual benefit" approach and its respect for the GRN as an equal partner. At Husab's May 2014 commissioning ceremony, for example, then-President Pohamba (2014) announced that "[t]he participation of Epangelo Mining Company in this major project reflects the majority investor's [the Chinese state] commitment to creating win-win partnerships with a local company [Epangelo, oddly characterized as a "local" rather than "government" company in this case]." This rhetoric frames

[153] I have not yet been able to determine this amount.

Husab's state-state ownership structure as in the best interest of Namibians not only because of the GRN's stake in the project, but also because of the Chinese government's involvement.

Finally, GRN officials and Swakop Uranium representatives have promoted the mine's state-state ownership as a mechanism to improve both revenue certainty for the GRN and uranium supply certainty for the Chinese government. Husab's uranium, unlike that of Namibia's other uranium mines, will be directly exported to China for use by the same company (CGN) that is mining it. A Swakop Uranium representative emphasized the importance of this fact, noting that Husab will "improve revenue certainty for government" and provide "real stability to local communities" while also providing the Chinese government with uranium supply certainty (Interview BB). For the Chinese government, Husab functions almost as an in-house mine. It facilitates transfer pricing for the state-owned CGN (i.e., CGN can sell the uranium from the mine to itself). It employs Chinese managers. It creates both up-stream and down-stream economic benefits for China through its use of Chinese equipment and creation of economic opportunities for Chinese companies (e.g., the Walvis Bay port expansion, Chinese construction and mining equipment for Husab). Yet, the Chinese government does not have to worry about labor (Chapter 6) or environmental (Chapter 4) problems that would likely be associated with a similar project in China. The mine represents the best of both in-house and foreign extraction.

Given the dramatic fluctuations in uranium prices over the past decade, the prospect of consistent government revenue from Husab is understandably appealing to the GRN. If such certainty is achieved, Husab could, in the words of one Epangelo official, provide a "new way to manage the boom and bust of our commodity economy" (Interview CC). The long-term benefits of the mine's export arrangement will depend on uranium prices. The best information I have from industry sources indicates that the price for the initial Husab uranium contract is likely

around $34 per pound, which is roughly $10-15 per pound above May 2018 uranium spot prices. This may be a source of frustration for the GRN if uranium prices increase, but, in the interim, it is certainly not shortchanging the GRN vis-à-vis the world market.

Importantly, consistent revenues from Husab may also provide the GRN with a possible solution to one of the most oft-cited challenges facing resource-rich governments: boom-and-bust commodity cycles (Auty 2001 and 2002; Ross 2012). Research on the resource curse indicates that governments with significant resource revenues often become overly reliant on those revenues. When commodity prices decline, associated declines in revenue can lead to increases in inequality (e.g. through government's inability to consistently fund redistributive social services; see Auty 2001). Revenue uncertainty can also lead to poor planning and budget instability, both of which can limit a resource-rich country's prospects for long-term growth and development. Flush with revenues during commodity booms, countries dependent on resource exports may, for example, build new schools only to be unable to pay for teachers when commodity prices crash (Karl 1997; Ross 2001). This can lead to a cycle in which the governments of poor, resource-rich countries become increasingly dependent on resource revenues, as income level is one of the best predictors of whether a country will be able to diversify its economy (Collier and Hoeffler 2002). Such effects on government budgets have political implications; revenue shortages associated with commodity dependence have led to political crises in countries as diverse as Gabon, Mexico, and Venezuela (Ross 2012). Uranium price unpredictability threatens Namibia's post-independence political stability, but the consistent revenues provided by Husab could make such global market uncertainty far less costly in domestic terms.

Husab's entirely state-based ownership structure also signals a new geopolitical and policy course for foreign investment in Namibian mining. The implications of this shift extend well beyond the benefits to the Chinese and Namibian governments discussed above. As I describe further in the next chapter, the mine marks the intensification of SWAPO's mining-based development strategy for ensuring political stability. It also enhances the GRN's legitimacy as a provider of development to the Namibian people, with implications for the abilities of minority groups to express opposition to mining-based development. In pursuing this state-led path, SWAPO has found both a friend and a model in China. It is still unclear whether the mine will live up to its development promises, and many Namibians are skeptical of its transformative potential (see Chapter 6). Already, however, Husab has created mutual benefits for both its Chinese and Namibian government owners, suggesting that perhaps Chinese investments in resource extraction in Africa are not always as one-sided as they may appear.

5.10 Interpretations of Husab's Ownership by Other Foreign Investors

Western companies and uranium industry stakeholders initially responded to Husab — and Chinese investment in the industry more broadly — with substantial skepticism. Prior to Husab, concerns with rising Chinese influence centered on environmental management. Since Husab, concerns with Chinese investment have shifted toward issues of governance, corruption, and labor practices. While I found these concerns to be on the decline in my more recent fieldwork —perhaps because every industry actor now has a relationship with Chinese investment — they provide insights into how Chinese investments are interpreted in light of the antagonism between foreign investors and the GRN described earlier in this chapter.

The proliferation of mining applications associated with Namibia's uranium rush overwhelmed the MME's capacity. This presented an industry that had long centered on just one

mine — Rössing — with what many considered to be a "brand" protection problem (Gardiner 2016, 119).[154] The MME's 2007 moratorium on new uranium mining licenses in 2007 catalyzed a public relations and environmental consulting bonanza among Western investors. Public relations efforts included the 2009 establishment of the Namibian Uranium Association (NUA), which, although created as an advocacy body for Namibia's entire uranium industry, was financed primarily by Rössing. The NUA was headquartered in Swakopmund, where environmental opposition to the industry is strongest (see also Gardiner 2016). It promoted the environmental best practices of Namibia's uranium industry through domestic and international presentations at mining conferences and environmental events. Figure 5.10.1 shows two examples from NUA presentations I attended in 2011 and 2015. These presentations described Namibia's uranium industry as uniquely dedicated to environmental sustainability. Individual companies reinforced this message in their own outreach activities. During my first visit to Rössing as part of a public tour in 2011, for example, the statistic that one barrel of yellowcake is the energy equivalent of 40,000 oil barrels was burned into my memory through at least ten repetitions in conversations with eight employees.

Figure 5.10.1. Slides from NUA presentations (Images: *left,* NUA 2011; *right,* NUA 2015)

[154] See Gardiner (2016) for far more detail on governance practices and rhetoric during Namibia's uranium rush.

As Chinese investments in Namibian uranium grew, Western investors raised concerns that Chinese mines were not adequately committed to environmental best practices (see also Gardiner 2016). Western uranium industry representatives rarely directed such concerns specifically at China in public though, relying instead on vague language. At a 2014 presentation, for example, a Western industry stakeholder identified "guarding" the reputation of the industry as its greatest challenge. Rather than specifying who the industry needed to be guarded from, the speaker stated that "new investors may have different priorities than current industry standards." This guarded diplomacy was often abandoned in more informal settings. My interviews in 2014 indicated that China's environmental public relations problem in Africa (see Chapter 3) extended beyond African governments to include Western uranium companies. In 2014, for example, I re-interviewed a higher-level uranium industry stakeholder. We had last spoken in the summer of 2011, when there was still hope that uranium prices would recover from Fukushima. When I asked them to update me on industry developments in the interim, I expected them to focus on the impact of low uranium prices. Instead, they focused on China. "You would not believe how it [the uranium industry] has changed since 2011," they told me, continuing,

> The Chinese have come in and they have taken over. They see opportunity to cut corners, and not only with the environmental regulations. [He went on to share his concerns with corruption later in the interview.] You should see about this new Husab mine they are building. It is just visible from Rössing, right there, but it is a world away in terms of management. Many of us are very worried. They don't like visitors, so it is hard to know, but it's changing rapidly, and not for the good. The environmentalists don't always like us, but we [uranium industry employees] live here [referring to Swakopmund] too…We also like to take our 4x4s to the desert on the weekend and want to continue doing so.[155] The Chinese, they have no ties. They will pack up as soon as the uranium is gone or things go bad. We are very worried that they will destroy Namibia when they do. (Interview DD)

[155] This statement associates environmental opposition with recreation, a prevalent theme in environmental opposition to the uranium industry in Swakopmund's white communities. See also Gardiner (2016).

By my next visit in 2015, Western uranium investors' concerns with Chinese investments had transitioned from environmental stewardship to "good governance"[156] and corruption. In lieu of high-grade deposits, Namibian uranium has offered geopolitical and public relations advantages since independence (see Chapter 4). Positive perceptions of Namibia as an African democratic success story extend to its mining industry. As a result, mining companies can announce new projects in Namibia with far less speculation about corruption and mismanagement than is the case in countries like Niger. Rössing in particular has devoted significant public relations efforts (e.g., presentations at international conferences, self-imposed transparency initiatives that facilitated my many visits) to ensuring this outcome. Several representatives of Western mining companies described the importance of "good governance" to me with an attitude I would describe as patronizing — experienced corporate citizens extending a helping hand to a government (the GRN) still "learning the ropes," as one interviewee described it (Interview EE). For many Western actors, China's rising influence in the industry threatened this "good governance" status quo.[157]

While often couched in the language of "corruption" used to characterize a wide variety of Chinese investments in Africa (and African governments more generally; see Szeftel 2007), my interviews led me to suspect that the "good governance" arguments used by Western investors in Namibian uranium also reflect deeper geopolitical uncertainties. Namibia's uranium

[156] See Gardiner (2016) for another account of the discourse of "good governance" in Namibia.

[157] Historically, of course, this argument is questionable, particularly given Rössing's historical relationship with the South African apartheid regime (see Chapter 4 and Hecht 2012). Even post-independence, Western investors in Namibian uranium have been associated with scandal and corruption. Namibian President Hage Geingob, for example, is involved in an ongoing corruption investigation related to his "private consulting" in the approval process for Areva's Trekkopje mine. The sterling global reputation of Namibia's uranium industry despite these scandals demonstrates the success of Rössing's post-independence public relations efforts. No fewer than eight Western industry stakeholders told me, in no uncertain terms, that Husab and other Chinese investments would undermine the reputation of Namibia's uranium industry, with no acknowledgement of any historical hypocrisy.

industry no longer relies on Western multinationals like Rio Tinto or wildcat exploration firms based in Australia. Chinese investments are leading the industry in both exploration and production. As a result, Western investors are losing influence with the GRN — the very influence that Namibians supportive of resource nationalism criticize. As my fieldwork progressed, I found that reactions to this situation increasingly involved perceptions that SWAPO leaders were insufficiently grateful for the efforts of Western investors. During a 2016 interview on the side of a mining event, for example, one Western uranium company representative told me, without hesitation, that

> we [Western mining companies] have moved mountains to prove our loyalty to them [SWAPO]. Also to the Namibian people…And yet they [SWAPO] is [sic] repaying us by turning the industry to those who would destroy it. The Chinese don't care about good government, nature, responsibility. They care about cheap. Twenty years from now, government [GRN] will surely regret sacrificing our loyalty for a quick rand [South African currency]. (Interview FF)

This argument reflects the sentiments that originally led SWAPO to seek out new investment sources to diversify its uranium industry and reduce its dependence on Rössing (Chapter 4).

These concerns seemed to have declined by the time of my most recent fieldwork. Industry public relations efforts now typically also frame Chinese investors as good corporate citizens. Given the stagnation in the rest of Namibia's uranium mining industry, some Western-affiliated uranium stakeholders are also beginning, albeit begrudgingly in my perception, to see Husab as an opportunity to shift the power dynamics of Namibian mining. If uranium prices recover and diamond revenues continue to decline, Husab may someday enable the uranium industry to challenge diamonds as Namibia's largest export commodity. A Western company-affiliated uranium employee, for example, shared with me their hope that Husab would enable the uranium industry to finally experience the "political might" long enjoyed by Namibia's diamond industry (Interview GG). Such frustrations with the prominence of the diamond sector

are common in the industry. Diamonds are inescapable in Namibia, from airport billboards to "Miss Namibia" pageant imagery. They are frequently credited with Namibia's post-independence economic growth and are treated as representative of the Namibian nation, which GRN-sponsored advertisements characterize as "the diamond of Africa." Many in the uranium industry would like to see uranium enjoy such strong domestic appreciation. The Husab-associated rhetoric analyzed in this chapter indicates that the GRN is certainly beginning to express such appreciation.

5.11 Interpretations of Husab's Ownership[158] by Opposition Groups and Namibians

Opposition political leaders and their followers have used Husab's ownership structure to criticize the government for implementing a resource ownership strategy they argue is in the best interests of China rather than Namibia. Among other themes (see Chapter 7), opposition movement Affirmative Repositioning (AR) has criticized the mine's uneven ownership. A March 21, 2016, post on the AR Facebook page, for example, asked, "Chinese [sic] owns 90% shares in Husab Uranium and 10% by the Namibian government, is this the independence we are celebrating today?" The post received more than 50 comments, including "our government is a pure joke" and "politicians are busy selling this country under our noises [sic], while we're celebrating elusive independence." Another commenter responded, "an elusive independence indeed, it's just a matter of time before Namibia officially becomes the People Republic of China in South West Africa." AR leader Job Amupanda regularly makes similar arguments. At a 2015 AR rally in Windhoek, for example, he asked the audience, "And what should we think of projects like Husab? Win-win partnership? False! Our minerals are being exported for cheap

[158] I focus only on ownership in this section. I analyze other themes in Namibians' perceptions of Husab (e.g., development, environment, etc.) in Chapter 6.

change. We are getting zero from these transactions. Government is lying to you." The crowd of roughly 200 young Namibians roared with applause.

I heard similar critical remarks regarding Husab's ownership structure during my fieldwork. For roughly 60 percent of the Namibians I spoke with (roughly 75 percent in low-income communities in urban Erongo), the GRN's strengthened mining role in Husab was of little consolation. The most pervasive reason for skepticism was the GRN's limited ownership stake. When I asked what they thought of Husab's joint ownership with China, some Namibians saw it as the opposite of increased resource sovereignty. "Husab is 90 percent Chinese!" a young man said with exasperation. He continued,

> So you are telling me we should be grateful that the Chinese are giving us 10 percent? It is ours to begin! It should be Namibia 100 percent, China zero! Worst case, maybe 90 percent Namibian, 10 percent China. If it is our resource, why are we not the big [majority] owner! Saying otherwise is just [government's] lies, lies, lies for the Chinese masters.

"Tell me," said a young woman, "what is the win-win in a situation when it is our own resources given away?" These criticisms were most common among non-mining employees in communities located near the mines, particularly among young Namibians in Swakopmund and Walvis Bay's informal settlements and former townships. For these Namibians, the difference between 10 percent ownership and zero ownership was relatively meaningless. They typically supported full nationalization and nothing short.

Other Namibians wondered what the GRN had conceded to gain its 10 percent stake in Husab. The details of the Chinese government's loan to the GRN were not public at the time, but few Namibians with whom I spoke thought it was likely that the GRN had paid for its stake in Husab outright. Most assumed the GRN's stake was funded by a loan or another type of arrangement that would hurt Namibians in the long run. "Thanks to government, I believe we

now will owe debt to China for as long as we live," a young man in a focus group (FG 15) in Windhoek's Katatura (former township) community said. "I am only 22! I will pay forever." These comments were more prevalent in Windhoek than in Erongo. I am not confident about why this was the case, but I suspect it may reflect the greater non-mining attention to Chinese influence in Windhoek, where anti-China sentiments are often associated with themes like "fake" commercial goods rather than mining in particular.

Not all Namibians thought the Husab project was a bad deal for the GRN though. Some thought the GRN's 10 percent stake was a strategic move by the GRN and/or felt a stronger sense of ownership in the mine relative to Namibia's other uranium mines because of the GRN's ownership role. These sentiments were most common among mining industry-affiliated participants, perhaps because they were well aware of the industry's high capital and infrastructural requirements (i.e., 100 percent ownership may not be all resource nationalists make it out to be). During a focus group (FG 2) of diamond mining employees in Lüderitz, one participant said, "I have always felt that Namibia's diamonds belong to me because of Namdeb [a co-owned De Beers-GRN diamond mining company]. I never felt that about the uranium. Maybe now with Husab [gesture implying "I will"]." In a focus group of uranium employees in Arandis, for example, several participants expressed appreciation for China's role in the Husab project, portraying its 90/10 ownership as the best of both worlds. "The Chinese did all of the technical things, feasibility study, materials sourcing, that type of thing," said one young Namibian man. "They invested billions. We in Namibia just don't have that kind of money, but government saw an opportunity to learn from the Chinese. And this country being a democracy, if I pay for it I own it!" "Namibians should stop complaining [about China's ownership in the mine]!" said another after I asked for their opinions on sentiments like those discussed in the

prior paragraphs. “The Chinese have given us an opportunity to develop skills. Someday perhaps we can own our own mine in full. But for today, we can learn.” GRN officials often shared similar arguments with me in interviews, framing Husab in “capacity building” terms.

5.12 Conclusion

Husab’s 90/10 ownership structure is far from an equal partnership. My interviews with SWAPO members indicated that they are well aware that the GRN is tremendously out-matched (financially and geopolitically) in its relationships with the Chinese government. Husab is, however, a far more equal partnership than the GRN has achieved in any other mine outside of the diamond industry. It signals the GRN’s ability to leverage Chinese investment to pursue its own domestic political aims, despite its weakened bargaining position following the uranium market crash. This is a significant turn of events in a uranium industry that has long been dominated by Western companies and a neoliberal approach to resource governance. It is a particularly noteworthy achievement for an African state with a population smaller than that of the Denver metropolitan area. As Mohan and Lampert (2012, 109) note, “[w]hile we must be wary of reversing the analytical lens too far, reinserting African agency into the dominant discourse of China-in-Africa reveals Sino-African relationships that are more locally driven and mediated than is generally recognized.” My findings support Mohan and Lampert’s assessment. Husab is certainly an example of how Chinese investment is affecting natural resource governance in Africa, but, more meaningfully in my view, it is also an example of how African political leaders can leverage relations with China in support of their domestic political aims. The GRN’s achievement is all the more compelling for having occurred in the realm of resource nationalism, which has long had an antagonistic relationship with foreign investment in Namibia as well as elsewhere in Africa.

Although the status of the Husab loan repayment is a concern, particularly given Namibia's current economic situation, the GRN's leveraging of Chinese investment to pursue resource nationalism via Husab casts some doubt on arguments that rising Chinese investment will necessarily undermine national resource sovereignty in Africa.[159] Reflecting the "south-south solidarity" rhetoric often used by Chinese and Namibian officials, Husab's hybrid ownership structure challenges simplistic narratives of China "grabbing" African resources. To build on the analysis of Bayart and Ellis (2000) regarding Africans' engagements with foreign investment more broadly, Chinese investments, like other types of foreign investment, are perhaps best characterized as opportunities for elite mutual benefit that transcend national boundaries.

In the case of Husab, those benefits extend beyond those of a mere tax-collecting "gatekeeper" (Cooper 2002) for the GRN and those of a profiteer for the Chinese government. For the Chinese government, Husab is a consistent and politically-stable uranium source to fuel its nuclear power ambitions and relieve domestic political pressure. The mine will facilitate the CPC's pursuit of industrial growth and increased living standards while simultaneously improving air quality and reducing carbon emissions. In addition to fueling Ecological Civilization, it marks China as a nuclear energy leader befitting its rising global status. The mine also offers benefits to the GRN that are far greater than might be expected given its mere 10 percent ownership stake. Despite skepticism among non-Chinese industry actors, Husab is a financial lifeline to Namibia's government. Its ownership structure may also have stability benefits. Because its uranium will be exported directly to the Chinese government at a set price rather than sold on the world market, for example, Husab will provide a consistent revenue

[159] National-level resource sovereignty is, however, of course only one element of resource-related rights, as I discuss in Chapter 6.

source for the GRN in a volatile industry. The GRN is far from the only African government struggling to manage the turbulence of a commodity-dependent economy. Boom-and-bust commodity cycles are one of the most significant economic challenges associated with the resource curse. If successful, the Husab model may be of significant practical benefit to other resource-dependent African states, although, as discussed further in Chapter 6, it may also reinforce some of the political (e.g., authoritarianism) and developmental (e.g., inequality) elements of the resource curse. This finding supports the arguments of geographers that there is no singular "resource curse." Instead, its manifestations can consist of many elements, the interactions among and implications of which are influenced by how the characteristics of extractive projects intersect with broader political economic and historical dynamics as well as the particularities of place.

Perhaps most importantly, Husab has made it possible for SWAPO to chart a path that appeals to the resource nationalist sentiments of its political base without risking the foreign investment needed for a capital-intensive industry like uranium mining. Husab has singlehandedly made the Epangelo SOE an influential actor in Namibian mining, setting a precedent that has strengthened its position in subsequent negotiations for ownership stakes in other mining projects. Namibian officials' leveraging of the Chinese government's investment in Husab to strengthen Epangelo shares similarities with resources-for-infrastructure projects elsewhere on the continent. Instead of reconstruction projects as in Angola (Corkin 2013), however, the GRN's infrastructure priority lies in strengthening the Namibian state's resource ownership role and making natural resource-related rights a matter of *national* rights. How those rights are distributed *within* Namibia is the focus of Chapter 6.

Chapter 6
Fallout: Chinese Investment, Political Legitimacy, and the Distributive Politics of Mining-Led Development in Namibia

> Africa's concerns are China's concerns. Africa's priorities are China's priorities.
> -Chinese Foreign Minister Wang Yi, responding to Former U.S. Secretary of State Rex Tillerson's warning that Chinese investments threaten African states' sovereignty
> March 8, 2018

> China and Namibia partners? Tell me, where are the real benefits of this so-called partnership to be found? It's certainly not here.
> -Resident of a Damara (minority) community
> Focus group 14, rural Erongo

6.1 Introduction

While limited to 10 percent, Epangelo's ownership stake in Husab enables the GRN to gain more revenue from uranium mining than has been the case with previous mines. Translating mining revenues into broad developmental gains, however, has historically proven to be a challenging task for the leaders of reasonably well-governed extraction-dependent states (e.g., Ghana, Botswana), let alone those less well-governed. More than twenty-five years after the end of apartheid in Namibia, it remains one of the world's three most-unequal countries in terms of income distribution. Sixty-seven percent of Namibians live on less than the equivalent of $2 per day (NSA 2017). This poverty is concentrated in rural minority areas, including rural Erongo, that are home to many of Namibia's mines (see Chapter 1). Many Namibians are frustrated with the persistence of unemployment, inequality, and poverty despite the country's vast resource wealth. The GRN has introduced Epangelo and Husab as solutions to these problems (Chapter 5), but how are these state-based benefits distributed? Are Namibians convinced that projects like Husab will finally bring about mining-led development, or do they see Husab as merely the intensification of a failed development approach?

In this final empirical chapter, I evaluate Namibians' perceptions of the GRN's intensification of state-based, mining-led development in partnership with China (particularly via Husab) and consider its implications for power relations and distributive politics within Namibia. I focus my analysis on the Erongo region. While Namibians' perceptions of China-Namibia relations and mining-led development vary widely, my analysis suggests there are reasons to be skeptical that Husab will live up to its developmental promises. Furthermore, by reinforcing the SWAPO-led state as the trustee of development for Namibians, projects like Husab may also further marginalize already-marginalized minority communities living near uranium mines. Chinese investments have been essential in *facilitating* this shift, but SWAPO, not the Chinese government, appears to be the driving force behind these changes. While I cover similar topical ground in this chapter as in Chapter 5 (e.g., Epangelo, Husab), my focus here is on the distributive politics of resource-based development rather than on resource ownership.

I begin by briefly reviewing the two bodies of literature — one on African states, resources, and development and the other on the implications of China's rise for political rights — that my analysis in this chapter bridges. Next, I describe how SWAPO has used mining-led development as a political legitimacy strategy, including in recent portrayals of China as a development model for Namibia. I then turn to Namibians' perceptions of state-based mining-led development in partnership with China in the uranium sector. I identify and discuss three themes in Namibians' perceptions: Husab as an employment generator, Husab as indicative of rising GRN corruption, and Husab as a threat to local quality of life and livelihoods. My analysis challenges interpretations that Husab's break with historical ownership patterns in mining (see Chapter 5) will bring about similar break with historical patterns in the within-country (sub-national) distributive politics of mining-led development. Instead, I find that Chinese

investments in Namibia are facilitating the liberation of a formerly-marginalized state while simultaneously deepening the exploitation of some its most-marginalized citizens.

6.2 Resource-Based Development, Legitimacy, and China's Rising Influence

Development scholars have shown how governments can use development as a "moral purpose" (Gupta and Ferguson 2002) that enhances the political legitimacy and consolidation of power in the state (Glassman and Samatar 1997; Scott 1998; Mitchell 2002; Li 2007). Development's connection to state-based political legitimacy is often reinforced by outside actors, who, for example, allocate aid to national governments or, in the case of the UN's decision to recognize SWAPO as Namibians' "sole legitimate representative," even elevate some political actors over others on the basis of development. Similarly, national governments can use their status as the trustees of development (Cowen and Shenton 1997) to enhance the authority of the state over natural resource governance (Li 1997). China's CPC, for example, is extending its developmental legitimacy farther into the realm of resource governance through its pursuit of Ecological Civilization (see Chapter 3).

Political leaders can in turn use their control over natural resources to shape socio-spatial patterns of development within countries (German 1998; Hart 2002; Boone 2003; Grant and Nijman 2004), including, as in Namibia, targeting development to communities in which the government fears a loss of legitimacy (discussed below). Drawing political legitimacy from resource-based development can have downsides for governments though. Combined with citizens' lofty expectations for new resource discoveries (see, for example, Kopiński, Polus, and Tycholiz 2013 on Ghana), the difficulties of managing resource dependency can create expectations gaps that undermine governments' development-based legitimacy. This loss of

legitimacy can in turn encourage governments to resort to repressive tactics (e.g., Soares de Oliveira 2015 on Angola; Adunbi 2015 on Nigeria) to protect their weakened position.

Researchers have begun to evaluate how China's rising influence might further encourage such repression, particularly of minority groups, in resource-rich states. Many scholars have argued that China's commitment to non-interference (Strauss 2009) may be of particular interest to African dictators (Tull 2006; Anshan 2007; Rogers 2007; Rotberg 2008). Melber (2009, 75), for example, argues that "the Chinese gospel of non-interventionism is warmly welcomed by the autocratic leaders and oligarchies that continue to rule the roost in the majority of African countries, especially those in possession of vast natural resources." Others argue that China rising influence will facilitate violence against opposition and minority groups (Brookes and Shin 2006). Taylor (2007, 1) concludes his analysis of the literature on China's role in violence in Africa by saying, "case studies demonstrate that very often, where a despotic regime stands on one side, facing down its own people, China will invariably be found standing shoulder-to-shoulder with the autocrats." In one of the most-cited articles on China in Africa, Tull (2006, 476) similarly argues that "there is virtually no way around the conclusion that China's return to Africa[160] is a negative political development that almost certainly undermines the promotion of peace, prosperity, and democracy on the continent."

There are two oversights, however, in the literature described above. First, researchers have primarily focused on already authoritarian, autocratic, and/or illiberal contexts (e.g., Angola, Sudan, South Sudan; see Chapter 1), with little work on democratic contexts. How might China's rising influence affect politics in resource-rich democracies that are often considered to be "success stories" in terms of democratic governance and/or development,

[160] See Strauss (2007) for an analysis of China's foreign policy that explains why its current involvement in Africa can be interpreted as a "return."

including Botswana, South Africa, and Ghana? Might Chinese influence catalyze new authoritarian or autocratic regimes rather than just reinforcing existing ones? Second, there has also been a tendency to focus on the actions of the Chinese government in driving such trends (e.g., Brookes and Shinn 2006). My research in Namibia, however, suggests that the Chinese government seems to prioritize stability over any particular regime type (see Chapter 5). How might the current trend in Africa toward more authoritarian[161] forms of politics reflect African leaders' strategic engagements with China and/or uses of its development model to pursue their own political agendas? This chapter offers some tentative answers to the above questions in the context of Namibia.

6.3 Mining, Development, and Political Legitimacy in Namibia

SWAPO's use of mining and development to enhance its political legitimacy dates to the liberation struggle. Prior to independence, SWAPO leaders characterized mining as antagonistic to development by equating mining with exploitation at the hands of South Africa's apartheid regime and complicit foreign investors. The 1976 SWAPO Constitution, for example, promised to work for the "oppressed and exploited people of Namibia," including those employed in mines in South Africa and Namibia. "In fulfilling its vanguard role," the document stated, "SWAPO organizes, unites, inspires, orientates and leads the broad masses of the working Namibian people in the struggle for national and social liberation" (SWAPO 1981, 257). SWAPO's efforts to end Namibian resource exports in the name of development were rewarded with UN-granted legitimacy as the sole legitimate representative of Namibians (see Chapter 4).

[161] For analysis and coverage of this trend, see Diamond (2015) and *Economist* (2016c).

As negotiations progressed and the economic realities[162] of independence became clearer, SWAPO leaders began to portray the relationship between mining and development in less antagonistic terms. Reflecting the broader neoliberal context of the time, SWAPO abandoned its pre-independence goal of nationalization (SWAPO 1981) for a growth-based strategy. Leaders like Economics Secretary Ben Amathila (1989) proposed using mining to "catalyze economic growth" and "diversify production in other sectors, to decrease the economic imbalance, break dependence on South Africa and give Namibia a better chance for development." Whereas SWAPO leaders had previously expressed willingness to sacrifice mining-based economic growth in the name of Namibia's development, post-independence SWAPO leaders framed economic growth *as* development.

Accomplishing this shift without losing legitimacy, however, required that SWAPO create new knowledge among Namibians about the definition of development and its relationship to mining. Political actors not only express power over how forms of knowledge, such what constitutes "development," are circulated and applied; they are also entangled in the political production of that knowledge (Nadasdy 2011). To translate international legitimacy as a liberation movement into domestic legitimacy as a ruling party, SWAPO had to convince Namibians that mining could indeed facilitate development. Independence, however, did not immediately erase a history of mining-based exploitation from Namibians' memories. This was particularly true among residents of mining communities that had borne the brunt of labor exploitation during apartheid. The minority ethnic composition of many of these communities (see Chapter 1) presented SWAPO with a further challenge in its pursuit of legitimacy as national party rather than an ethnic (Owambo) party. SWAPO had won the 1989 elections with

[162] Mining accounted for 70 percent of exports and over 50 percent of GRN revenue at independence (Tapscott 1995).

57 percent of the vote. It was a clear victory, but it also reflected Namibia's roughly 50 percent Owambo population[163] (Forrest 1992; Leys and Saul 1995). By contrast, the Herero-based Democratic Turnhalle Alliance (DTA) had received 29 percent of the vote — nearly four times the Herero population share of 7.5 percent. My interviews with SWAPO leaders suggested that the party's leaders at the time were concerned that this situation, if left unaddressed, could undermine SWAPO's national legitimacy as representative of *all* Namibians rather than just Owambo Namibians.

SWAPO's mining-led development strategy was successful in producing economic growth — its declared measure of success — as well as initial political legitimacy. Between 1990 and 2008, Namibia's GDP grew by a yearly average of 4.2 percent (NSA 2017). SWAPO also received 75 percent of the vote in the 1994 and 1999 elections. The latter victory, however, was facilitated by changing the Namibian constitution to allow the popular founding President, Sam Nujoma, a third term. As in other African states, economic liberalization in Namibia also facilitated the transfer of mining profits to investors (Mbuende 1993) and, through empowerment initiatives that encouraged "tenderpreneurship," SWAPO-connected Namibians (Melber 2014). SWAPO leaders at the time were concerned that rising inequality, combined with the transition to a post-Nujoma leader, could make the party vulnerable in the next election (Interview M, SWAPO activist).

To improve its position prior to the 2004 election, SWAPO introduced a new development plan called *Vision 2030*. Like the SWAPO rhetoric that preceded it, *Vision 2030* emphasized mining-based economic growth as central to development. The plan also, however, evoked "beneficiation" to a greater degree than in the 1990s, stating that development would be

[163] Appendix 3 includes a breakdown of Namibia's ethnic composition.

achieved by ensuring that "Namibia's mineral resources are strategically exploited and optimally beneficiated" based on the best judgement of the GRN (NPC 2004, 43). Beneficiation, in turn, would facilitate the development of "other sustainable industries and human capital for long-term national development" (NPC 2004: 43). *Vision 2030* reflected extractivist themes common to resource-rich states (see Soares de Oliveira 2015 on Angola; Velez-Torres on Columbia; Revette 2017 on Bolivia), including the use of mining (and beneficiation) to generate employment, growth, and industrialization. It did not, however, envision a role for the GRN beyond regulation. Instead, it framed challenges like inequality, poverty, and unemployment as solvable through mining-based economic growth and re-distributed GRN royalties and tax payments.

To complement national strategies like *Vision 2030* and encourage political stability, SWAPO also promoted (and continues to promote) mining's association with development in mining locales. According to representatives of local government (Interviews JJ-QQ) and ordinary Namibians in the Erongo and !Karas regions, these initiatives have included mining-related scholarships for ethnic minorities, high-profile development projects jointly implemented by the GRN and mining companies (e.g., the Rössing Foundation), and perhaps even intentional socio-spatial hiring practices.[164] SWAPO has also promoted political unity through rhetoric that intertwines imaginaries of the nation, natural resources, and development. Images like those in Figure 6.3.1, for example, are impossible to miss in !Karas and Erongo. Communities like Arandis and Lüderitz have even adopted mining-centric slogans —"The Diamond of Namibia" and "Uranium Capital of the World," respectively.

[164] This may seem bizarre, but several informants told me that SWAPO hires minority groups in mining positions to appease local populations. My visits to mining offices in Erongo and !Karas indicated that this *could* be true. I did not, however, collect data on employee ethnicity to verify these impressions. Even if SWAPO is not intentionally pursuing socio-spatial hiring practices in mining though — none of my SWAPO informants mentioned it, although I did not ask them explicitly because doing so would have been politically risky — it is notable that some Namibians in the mining communities where I conducted fieldwork were under this impression. I cannot confirm whether this is the case elsewhere in Namibia.

Figure 6.3.1. Images from mining localities[165] in Namibia[166] (Photos: 2014; 2015)

Epangelo as Technical Fix

Namibia's mining-led growth after independence disguised substantial challenges, including increases in unemployment and inequality that led to concerns in the mid-2000s that mining was not as conducive to development as SWAPO had argued. These sentiments threatened to undermine SWAPO's legitimacy as a ruling party. In Chapter 5, I analyzed how SWAPO responded to this challenge through resource nationalism. In this section, I evaluate how SWAPO used Epangelo as a technical fix that depoliticized its mining-led development strategy and re-centered the SWAPO-led state as the trustee of national development.

Namibia was not the only African state that responded to mining-related development challenges in the mid-2000s with a new mining SOE; Ghana, Senegal, and South Africa, among

[165] The signs in Figure 6.3.1 come from !Karas (diamonds) and Erongo (uranium). "Omake" in the second image is an Ojiherero (Herero) term meaning "praise is due."

[166] Note the message "DIAMOND THEFT HURTS US ALL-DON'T DO IT" in the bottom right sign. Namdeb implements tight security around its alluvial diamond mines, but smuggling remains a major concern. See Chapter 1 for more on alluvial diamonds and conflict.

others, also created their own new mining SOEs. The prevalence of this strategy reflects the history of mining across the continent. Nadasdy (2011, 130) argues that "ideas about proper resource use (or, indeed, about what constitutes a resource in the first place) are themselves the products of particular sociocultural histories." In creating SOEs, African leaders can frame neoliberal policies as the root cause of mining-related problems and the state as their solution. In Namibia, for example, Minister of Mines and Energy Katali framed "rent-seeking" foreign investors as responsible for Namibia's high inequality and unemployment (Chapter 5). This political maneuver acknowledged the problem of inequality without admitting to SWAPO's complicity in it (e.g., via its awarding of valuable contracts to "tenderpreneurs"). It also leveraged Namibia's history of foreign exploitation by casting a familiar foreign enemy as the party to blame for unrealized development, a common strategy in post-colonial extractivist states. Casting foreign investors as the problem enabled SWAPO to avoid a debate about mining's actual potential to facilitate broad-based development. Instead, SWAPO could frame the challenges of mining-based development as technical problems with a technical solution (Li 2007): Epangelo. This strategy is reminiscent of Hajer's (1995, 22) "problem closure," in which a particular understanding of a problem is used to preclude both alternative understandings of the problem and potential solutions to it (e.g., economic diversification away from mining; see Forsyth 2007 and Guthman 2011 for non-mining examples).

SWAPO's Epangelo strategy had the added benefit of turning a moment of political turmoil into an opportunity to reinforce SWAPO's developmental legitimacy. Like China's CPC (Chapter 3), Namibia's SWAPO derives political legitimacy in large part from its development initiatives. The rhetoric accompanying the SMP and Epangelo's establishment framed the developmental possibilities of mining as beyond question while placing agency for development

with the SWAPO-led state. This has subsequently enabled SWAPO to more easily render opposition to mining-led development as "putting politics before development." Increasingly, GRN officials are turning to China as a successful model of this development strategy.

6.4 China as a Development (and Political) Model

In pursuing an enhanced role for Epangelo in Namibian mining, SWAPO leaders are following a strategy that the CPC demonstrated in its own use of mining SOEs for industrialization and political legitimacy. SWAPO's use of China as a development model extends beyond Epangelo though. As described in Chapter 5, Husab's hybrid ownership challenges historical patterns in uranium mining ownership while providing mutual benefits to both the Namibian and Chinese states. Husab's greatest benefit to SWAPO, however, may lie in its reinforcement of SWAPO's developmental authority.

I have analyzed how GRN officials portray China since 2011. With the election of Namibian President Hage Geingob in 2014, I noticed a subtle shift in these portrayals. SWAPO leaders have consistently characterized China as a friend and an exceptional world power since 2007 (see Chapter 1). Over the past three years though, the number of portrayals citing China not just as a "loyal friend" but also as a *model* for Namibia's own development has increased. Namibia's democratic status has been a key component of its reputation as an "African success story," which has in turn helped it attract investment it otherwise might not have (Chapter 4). Increasingly, however, Namibia is no longer dependent on Western investment or aid. In conjunction with this shift in aid and investment patterns, Namibia's SWAPO leaders appear to increasingly be arguing for a new path that follows China's own. While it is still too early to describe this trend as a fundamental shift, I have identified two themes in this rhetoric to date: state-based unity and the prioritization of economic over political rights. These trends, described

below, bode poorly for those who would oppose state-based, mining-led development, including many of the minority Namibians whose perspectives on Husab I discuss in Section 6.7.

The first rhetorical trend is the prioritization of economic growth over political concerns (e.g., freedom of speech and the press). At a 2016 SWAPO Party Youth League (SPYL) event in Windhoek for example, an SPYL leader responded to a question about how Chinese investment benefits Namibians by saying, "[t]he Chinese looked forward to overcome colonization, focusing on economic growth. Political development, they decided, could come once bellies were full. If we are to become a high-income country as declared in *Vision 2030* and the *Harambee Prosperity Plan* [a development plan introduced in 2015], we must follow this lead. Economics first, politics second." This rhetoric contrasts sharply with the pre-independence period, when SWAPO's liberation leaders argued that defeating apartheid required undermining its economic foundations, even if that meant poverty for Namibians (see Leys and Saul 1995).

Rhetoric prioritizing economic development over political rights is, however, familiar to scholars of China (Svensson 2002; Goldman 2005). Chinese officials frequently counter Western arguments for democracy by emphasizing that human rights must first be thought of in material or economic terms (e.g., housing, food, employment). Corkin (2013, 49), for example, quotes a Chinese representative in Angola as arguing that "to talk about democracy is not wrong, but this is for advanced countries; it is not appropriate for less advanced countries. If you just give them the vote, but not a better life, will this change anything?" Similarly, SWAPO leaders are now citing China as a country that has achieved "miraculous" development by wisely putting economic reform before political reform. "China's economic growth has lifted millions from poverty" is a common refrain in this rhetoric. The recent slowdown in China's economic growth

has captured significant attention in Namibia,[167] but most of my informants continued to associate China with strong economic growth. While emphasizing economic growth is far from a new strategy for SWAPO (see Section 6.3), arguments that such growth should be prioritized over political rights is a new tactic.

SWAPO leaders have also begun to leverage their interpretations of the Chinese development model to intensify their calls for a politics of unity, which is typically referred to as "peace and stability" in Namibia. Even more than the prioritization of economic growth described above, SWAPO leaders characterize this centralization of power in the SWAPO-led state as the "Chinese development model." This "model" was the primary theme of an October 2015 event I attended in Windhoek prior to the Forum on China-Africa Cooperation (FOCAC) in Johannesburg in December. The day-long event, titled "The Development Path: China-Africa Development Models Seminar" (see Figure 6.4.1) was co-sponsored by the Chinese Embassy and the University of Namibia. It attracted roughly 250 attendees, most of whom were youth. During his opening address, Chinese Ambassador Xin Shunkang declared that

> in the 66 years, under the leadership of the Communist Party of China, the Chinese people have been striving with bold innovation and practice and have found the best development path for our own…While we remain a developing country, China is now the second-biggest economy, the first-trading [sic] country with largest foreign reserve, and the third-biggest investing country in the world. China's overall national strength and state leadership realized this historic leap forward. China is proud to support Namibia on its own development path.

This message of state leadership under one party informed discussions and panels throughout the day. My conversations suggested that Ambassador Xin's description of the importance of state leadership in achieving development was well-received by many attendees.

[167] I made a point of rarely missing the nightly 10pm newscast on the state-owned Namibian Broadcasting Corporation (NBC) during my fieldwork. My fieldnotes from the weeks leading up to the 2015 China-Africa Development Models Seminar, which coincided with media attention to China's slowing growth, indicate that China's economic slowdown and/or its implications were discussed in twenty-eight of thirty-six newscasts.

Figure 6.4.1. ***Right,*** **Banner at the China-Africa Seminar;** ***left,*** **Ambassador Xin delivering his opening address (Photos: Author 2015)**

The 2015 China-Africa seminar in Windhoek was not the first time I heard praise for China's centralized state leadership in Namibia. After SWAPO's electoral victory in 2014, in which it received more than 80 percent of the Presidential vote, incoming President Geingob announced that his top priority would be to promote the development of "one Namibian house." Geingob first introduced this language during his March 2015 inaugural address. After noting that the "overwhelming mandate given to the SWAPO Party and its presidential candidate is a clear indication of the confidence my fellow citizens have in SWAPO and in me," he continued,

> We are however aware that people don't eat constitutions, peace or democracy. People eat decent food, live under decent shelter and enjoy decent employment…We in independent Namibia have been very fortunate to have had steady hands at the helm for 25 years…all of us must play our part in the success of this beautiful house we call Namibia. We need to renew it from time to time by undergoing renovations and extensions.

Geingob provided more insights into those extensions and renovations — and his inspiration for them — in a series of "town hall" events held across the country in 2015. He was joined by a series of other high-level GRN representatives. At a 2015 town hall in Keetmanshoop, Geingob declared that the "Chinese took responsibility for the economic development of its people from 1949. We too must look forward, move past petty politics, tribalism, and infighting by those who

wish to disrupt our peace and stability…we must pull together as one Namibian house to become a high-income country. This is what China has done." Geingob's comment followed a question about an opposition politician's argument that SWAPO leaders were allowing Chinese businesspeople to exploit Namibians. In characterizing such opposition as "petty politics" and "tribalism," Geingob trivialized it. He also cast the opposition as anti-peace and anti-stability — a potent insult in a post-conflict society where peace is prized.

Geingob's rhetoric reflects the increasingly close association in Namibia between even minor criticisms of SWAPO and accusations of disloyalty. The message of "one Namibian house" is a call for national unity, but it also discourages dissent. "One Namibian house," after all, implies one house under SWAPO. Namibia has effectively been a one-party state since independence, but its leaders have at least occasionally conceded the importance of opposition groups in the past. Recent events, however, suggest an intensification of one-party rule and a return to SWAPO's authoritarian roots in Namibia's liberation struggle (Chapter 1). SWAPO leaders, for example, increasingly characterize Namibia's journalists, researchers, and civil society leaders as "sowing seeds of disunity" (Interviews SS, UU, and FFF). SWAPO's growing authoritarianism also applies to its internal politics. Affirmative Repositioning (AR) was created by three SPYL leaders after SWAPO banned them for challenging its leadership. How Namibians will respond to SWAPO's unity politics remains unclear. In the most recent Afrobarometer survey, 82 percent of respondents either disapproved or strongly disapproved of one-party rule, but 37 percent of respondents indicated that they trust SWAPO "a lot."

In addition to unity, SWAPO's new message also emphasizes patience. Perhaps fearing the spread of youth protests over service delivery, education, and inequality from neighboring South Africa, SWAPO leaders are using the example of China to argue that development

requires time, unity, and trust in the state as the agent of development. At a town hall meeting I attended in an area of townships and informal settlements that is home to roughly half of Windhoek's population, President Geingob argued,

> [d]estructive criticism of your leaders will undermine our fight against poverty…If we lose focus, we do not pull together in one Namibian house…we risk running around like so many headless chickens!...China put economics first, politics second. Their growth pulled millions out from poverty… Economy must be first priority! If these critics were to visit our neighbor [Angola],[168] they would not complain!

Geingob was responding to a question about how he would counter criticisms by AR leaders that corruption is rampant in SWAPO and the GRN. His message was simple: the youth must be patient. Namibians should be grateful for the peace and stability that they enjoy but many of their neighbors do not. More specifically, they should be grateful to SWAPO for pursuing development in the face of ungrateful critics.[169] Economic growth, facilitated by political unity and sacrifice in the name of supposedly-greater development goals, must be Namibians' priority. Only when Namibia reaches the SWAPO-defined required level of development, the argument goes, will criticisms of the government and discussions of political reform be appropriate

It is too early to tell whether SWAPO's recent rhetorical turn will radically alter Namibian politics. As I discuss in Chapter 7 regarding future research, even opposition politicians are beginning to use their interpretations of the "Chinese development model" to pursue their own political aims. Afrobarometer survey data does indicate that Namibians may feel unable to speak out against the actions of their government, particularly regarding corruption (discussed further in Section 6.6). In 2014, Afrobarometer asked, "Some people say that many

[168] Geingob is not alone among SWAPO leaders or Namibians in using Angola to present Namibia in a more favorable light. Angola is regularly referenced by Namibians as an example of how things could be much worse in terms of conflict, political freedom, and poverty, among other problems.

[169] The importance of being grateful is also a theme CPC rhetoric. See, for example, Sorace (2017).

incidents of corruption are never reported. Based on your experience, what do you think is the main reason why many people do not report corruption when it occurs?" The most common response, selected by 28 percent of respondents, was "people are afraid of the consequences." The next most common response, "people don't know where to report it," was selected by only 13 percent of respondents. The 2017 survey asked a different question, "In this country, can ordinary people report incidents of corruption without fear, or do they risk retaliation or other negative consequences if they speak out?" Sixty-two percent of respondents indicated that they "risk retaliation;" only 34 percent indicated that they could report corruption without fear.

Rising Chinese investment in Namibia and strengthening ties between SWAPO and CPC leaders have played a role in facilitating Namibia's recent rhetorical shift toward developmental authoritarianism. I think it would be a mistake, however, to interpret these events as *caused* by China. While I was unable to interview high-level Chinese government representatives in Namibia during this research (see Chapter 2), their public rhetoric, as exemplified in Ambassador Xin's statement at the Development Models Seminar, emphasized the Chinese government's support for Namibia's government in charting its own development path. I would estimate that at least half of the speeches I heard by Chinese officials in Namibia referenced the proverb about "crossing the river by feeling the stones." While much of which I am not aware may be going on behind the scenes, it is my impression that SWAPO, not China, is leading Namibia's recent shift toward a more authoritarian politics. Chinese investment has simply provided an opportunity for SWAPO to pursue this shift. By interpreting "China's development model" in the way that best suits their interests, SWAPO leaders are using China to add credibility to the centralization of power within the SWAPO-led state. As the following sections indicate, they have chosen a development partner that many Namibians regard with skepticism.

6.5 Perceptions of China in Namibia

Namibians' concerns with China reflect similar concerns elsewhere in Africa, including Chinese labor practices, competition from Chinese traders and companies, and fears of rising numbers of Chinese migrants (Brautigam 2009; Carmody 2011; Corkin 2013). SWAPO politicians' pro-China rhetoric, as detailed in Chapter 1, attempts to counter such concerns by framing China as a "loyal friend" to Namibians and an exceptional world power. The overwhelming positivity of SWAPO rhetoric on China is strongly contradicted, however, by portrayals of China in the Namibian media. My comprehensive media analysis included 319 non-neutral portrayals of China in Namibia's print and television media (including articles, news reports, letters to the editor, and opinion pieces) between January 2008 and July 2017.[170] Of these, 216 (67.7 percent) were broadly negative and 103 (32.3 percent) were broadly positive. This finding was despite my inclusion of the state-owned *New Era* newspaper, in which roughly 70 percent of portrayals of China were positive.

Public opinion data also modestly contradicts SWAPO's pro-China rhetoric. Nationally-representative Afrobarometer survey data indicates that Namibians are more supportive of China than Namibia's media but less supportive than SWAPO politicians. The most recent Afrobarometer survey in Namibia (conducted in 2017; forthcoming) did not ask Namibians' opinions of China, but the 2008 and 2014 surveys did, each using different questions. Table 6.5.1 presents data on how Namibians responded to the 2008 question, which asked, "In your opinion, how much does each of the following do to help your country? [ACTOR (e.g., China)]" I have included Namibians' opinions of South Africa and the U.S for comparison. Combining the two

[170] This number does not include over 500 portrayals that I deemed to be neither negative nor positive.

most-positive "help" categories[171] indicates that 50 percent of respondents said China helps Namibia at least "somewhat." By comparison, only 32.3 percent of Namibian media portrayals framed China positively.

Table 6.5.1. How much does each of the following do to help your country? Results for China, South Africa, and the U.S. (Data: Afrobarometer 2008)

	Do Nothing/ No Help (%)	Help a Little (%)	Help Somewhat (%)	Help a Lot (%)	Don't Know (%)
China	13	33	25	25	4
South Africa	10	21	30	34	5
U.S.	11	18	30	36	5

The 2014 Afrobarometer survey asked Namibians a more specific question that revealed a split in Namibians' opinions of China's development assistance (Table 6.5.2). In response to the question, "In your opinion, does China's economic development assistance to Namibia do a good job or a bad job of meeting the country's needs, or haven't you heard enough to say?" 13 percent of respondents indicated that China's assistance does a "very good job" and 39 percent indicated that China's assistance does a "somewhat good job." More respondents viewed China's assistance positively (42 percent, combined) than negatively (32 percent, combined), but respondents' support for China was again more modest than that offered by SWAPO politicians. As this question was only asked regarding China, comparison with other countries is not possible.

[171] I did not include "help a little," as I suspect it is roughly equivalent to the "banal" category I used portrayals of China in the media and by Namibian politicians.

Table 6.5.2. Results: Does China's economic development assistance to Namibia do a good job or a bad job of meeting the country's needs? (Data: Afrobarometer 2014)

Response	**%**
Very Bad Job	10
Somewhat Bad Job	22
Neither Good nor Bad Job	14
Somewhat Good Job	39
Very Good Job	13
China Doesn't Give Development Assistance to Namibia	1
Don't Know/Haven't Heard Enough to Say	1

In my fieldwork, I found Namibians' opinions of China to be more negative than Afrobarometer data suggest. While I did not use a standardized questionnaire in my day-to-day conversations or interviews, I did use a questionnaire for focus groups. I included the following question on China: "Do you think China's influence in Namibia has been good or bad for you personally?" Because most Afrobarometer questions ask Namibians to evaluate Chinese involvement in abstract terms, I wanted to ask participants about their personal experience. Table 6.5.3 shows the results. A majority (54 percent) of my focus group participants indicated that China's influence in Namibia has been either "very bad" (19.8 percent) or "bad" (34.2 percent) for them personally. By comparison, 13 percent of respondents in the 2008 Afrobarometer survey indicated that China does nothing/offers no help to Namibia, while 32 percent of respondents in the 2014 survey indicated that China's development assistance does a "very bad" or "somewhat bad" job of meeting Namibia's needs.

Table 6.5.3. Focus group questionnaire results: Has China's influence in Namibia been good or bad for you personally? (n=111 of 118 participants)[172]

Response	%
Very Bad	19.8
Somewhat Bad	34.2
Neither Good nor Bad	18.9
Somewhat Good	16.9
Very Good	6.3
Don't Know	4.4

There are several possible reasons for this discrepancy. First, my focus groups were not designed to be representative. Afrobarometer, by contrast, is a nationally-representative survey with a sample size of roughly 1,200. Second, the time periods varied. The Afrobarometer data were collected in 2008 and 2014, while my primary fieldwork was in 2015-2016. Third, the focus group discussion could have shaped participants' views (i.e., a pre-focus group questionnaire might have revealed different results). Finally, the participants in my focus groups differed from the Afrobarometer sample in significant ways, two of which I want to highlight. First, I only conducted focus groups in Erongo, Windhoek (Khomas region), and !Karas. Erongo and !Karas are mining-intensive areas, while Windhoek serves as Namibia's political and commercial hub. By contrast, Afrobarometer's sample reflected Namibia's national population distribution, with 19 percent of the sample from Khomas, 8 percent from Erongo, and 4 percent from !Karas. Second, and compounding my mining-centric research locations, my focus group participants were further skewed toward the mining sector and industries for which mining has implications (e.g., tourism) to facilitate my research focus on mining. Neither the 2008 nor the 2014 Afrobarometer surveys indicate the percentage of respondents employed by mining, but 18 percent of respondents in the 2014 sample self-classified as unskilled manual workers, 7 percent

[172] Seven participants did not answer this question (three incomplete questionnaires plus four questionnaire refusals).

as artisans or skilled manual workers, and 3 percent as supervisors/foremen/senior managers. By contrast, out of my 118 focus group participants,[173] 36 (30.5 percent) were employed in mining-related positions or had previously been so employed. Furthermore, because all non-Windhoek participants (86; 72.8 percent) lived in mining-proximate communities, they were likely to have relationships with mining (e.g., family, friends) even if they were not directly employed in the sector. Based on the results described in the rest of this chapter, I suspect that proximity to mining interacted with employment and minority status to influence Namibians' opinions of the developmental potential of Chinese investments in uranium. I discuss this potential interaction further in Section 6.8.

To better understand how the data I collected differ from SWAPO rhetoric, I briefly discuss how SWAPO officials have described Husab's developmental benefits in the next section. I compare these arguments with Namibians' perceptions and experiences in Section 6.7.

6.6 This Time It Will Be Different: The Developmental Promise of Husab

At a seemingly-endless stream of ribbon-cutting events celebrating everything from the first kilometer of pavement poured on the road to Husab to its first drum of yellowcake, I heard SWAPO leaders describe Husab's developmental benefits as nothing short of transformative. The most notable example was President Geingob's praise for Husab during his 2015 Forum on China Africa Cooperation (FOCAC) address, which was broadcast across Namibian radio and television channels. Geingob concluded an extended description of Husab by stating, "[t]his mine has brought meaning and purpose to the life of previously unemployed Namibians." Chinese representatives have made similarly-optimistic declarations. "This project will make the entire area better!" one Chinese embassy representative told me on the sidelines of the 2015

[173] For the four questionnaire refusals, I gleaned the participants' employment from the focus group conversation.

China-Africa Seminar in Windhoek. “And Namibians are involved at all levels. The Vice President [of Swakop Uranium] is himself a Namibian, so he understands what is desired by the Namibian people.” SWAPO officials’ framings of China (see Chapter 1) play an important role in this rhetoric, helping Namibian officials characterize the Chinese government, like SWAPO itself, as a trustee of Namibians’ development. These arguments bear some resemblance to those made by Western powers in support of developmental colonialism in Africa (Comaroff and Comaroff 1997; Cooper 1997) and beyond (Wainwright 2008), but this time Chinese leaders are joined by SWAPO officials in arguing for China’s developmental trusteeship.

Namibians have noted the messaging surrounding Husab. Only five of my 118 focus group participants had not heard of the mine. All of these unaware participants lived in or near Lüderitz, which is a 10+ hour drive from Husab. By contrast, 23 participants indicated that they had not heard of the Namdeb diamond mining partnership, despite its 1994 founding (compared to Husab’s 2014 commissioning) and its status as the single largest contributor to Namibia’s economy. Namibians living far away from the Husab mine were much more likely to be aware of Husab than those living far away from diamond mines were likely to be aware of Namdeb. The awareness of the Namibians with whom I spoke of Husab does not, however, mean that they were convinced that it or Chinese investments more broadly would improve their standard of living. In the following section, I analyze whether local Namibians think Husab and intensified uranium mining have indeed, to use the words of President Geingob, brought “meaning and purpose” to their lives.

6.7 Experiences of Chinese Investments in Uranium Mining in Namibia

This section focuses on Namibians’ perceptions of the implications of Chinese investments in Namibian uranium in general and the Husab mine in particular. Because uranium

mining occurs in Erongo, I highlight my findings there to a greater degree than my research elsewhere. My analysis centers on the three most prominent themes that emerged in my fieldwork: 1) inequality and corruption, 2) employment, and 3) environment, health, and sense of place. The first two themes extended beyond the Erongo region, while the latter theme was much more prominent in Erongo than elsewhere. In each case, I begin by providing general information on the problem (statistics, survey data, etc.) before turning to my findings regarding Namibians' perceptions of that problem and its relationship to mining-led development and Chinese investment.

The prominence of the first two issues listed above reflects the salience of inequality, corruption, and unemployment across Namibia. My textual analysis indicates that the Namibian media identify inequality and unemployment more frequently than any other issues as the most two most significant problems facing Namibia (e.g., Iikela 2018). Public opinion data supports this identification. The most-recent Afrobarometer survey (forthcoming) in Namibia did not include an "inequality" response option for the question "In your opinion, what are the most important problems facing this country that government should address?" but it did include "unemployment." The results indicate that 39 percent of respondents identified unemployment as the most important (top-ranked) problem facing Namibia. The next highest-ranked problems were "poverty/ destitution" and management of the economy" with 10 percent each. Although there was not an "inequality" response option, these two responses seem to come closest to capturing inequality. The next highest-ranked problems were "corruption" (5 percent) and "education" and "water supply" (4 percent each). Unemployment and inequality/corruption[174]

[174] These two issues were strongly associated with one another in my data collection, so I have grouped them here.

were also the top two issues associated with the Husab mine in my interviews and focus groups. I begin with inequality/corruption before turning to unemployment.

Inequality and Corruption

The prevalence of concerns with inequality in my focus groups and interviews differs from my more informal day-to-day interactions, in which I found that Namibians were most likely to cite unemployment as Namibia's most-pressing problem. This finding may be related to the more in-depth format of focus groups and interviews, which provided participants with time to discuss concerns they might have thought required explanation (i.e., unemployment is intuitive, whereas inequality can take many forms). Even more likely, the prominence of inequality may reflect the high proportion of mining-connected participants in my focus groups, whether employed in the industry or just living near mines. Geography appears to affect perceptions of resource ownership in Namibia. Participants living in Erongo, for example, were more likely to describe uranium in possessive terms (e.g., "our uranium") than those in Windhoek. These sentiments were most acute in mine-proximate communities, where residents' expectations about how mining should personally benefit them were the highest. The sense that those living elsewhere were benefitting from mining while locals bore the costs often provoked feelings of injustice related to inequality. Although strongest in mining communities, these sentiments were not limited to them: members of civil society and ordinary Namibians in Windhoek also expressed concerns that mining-based development has not improved quality of life for more than just a small elite.

Who do Namibians blame for Namibia's high inequality despite its resource wealth? Anti-foreign investment rhetoric, as described in Chapter 5, was certainly not unusual in focus groups. More problematic for SWAPO's mining-based development strategy, however, is what I

interpreted to be a growing sense among the Namibians I spoke with that the GRN has failed to serve as a responsible trustee of Namibia's mining-led development. Since 2011, I have increasingly found ordinary Namibians to be as likely or more likely to blame inequality on GRN corruption as they are to blame it on foreign investment. It seems that SWAPO's strategy of associating mining, development, and the nation with one another has perhaps been too successful; rather than diffusing anti-SWAPO sentiments, such rhetoric may be encouraging Namibians to seek greater accountability from SWAPO.

Despite the GRN's claims that ordinary Namibians will benefit from projects like Husab, my interviews and focus groups revealed deep skepticism. One political analyst noted that calling the listed numbers of the 60+ Namibian companies that SWAPO says are "partnering" with Chinese investors leads to roughly ten well-connected elites (Interview X). A kombi driver reinforced this point more bluntly, telling me, after hearing I going to a Chinese investment event, "soon we will talk Mandarin, and we will still have no money. Fat cats and the Chinese will have eaten it all. That is what they call 'Chinese take-away' [take-out]!" (Interview EEE). Opposition leaders have noticed these sentiments. An RDP opposition leader said that "Husab is a song sung by those who are blind with regard to China. They claim it is the demand of the masses, when we know what is at play is self-enrichment, not the plight of the poor." Namibians, he argued, would soon tire of SWAPO's unfulfilled development promises.

Even among SWAPO supporters, it was not clear that Namibian officials' endowment of China with developmental "struggle credentials" (see Chapter 1) has proven convincing. SWAPO's support for Chinese investment relies on perceptions of China as a friend to the Namibian people, not just SWAPO. Yet, tensions over foreign investment in Namibia are particularly acute in the case of Chinese investment. My previous research using 2008

Afrobarometer data indicated that Namibians' perceptions of the GRN as corrupt were a highly-significant predictor of negative opinions of Chinese investment (DeBoom 2013). This relationship did not hold for the U.S. or South Africa. My qualitative research in Erongo confirm this quantitative finding.

The representativeness of the corruption concerns that were so prevalent in my interviews and focus groups can be broadly assessed by comparing Afrobarometer survey results for the past several years. Table 6.7.1 shows Namibians' responses to the question, "In your opinion, over the past year, has the level of corruption in this country increased, decreased, or stayed the same?" since it was introduced in 2014. The percentage of respondents who indicated that corruption in Namibia "increased a lot" rose from 38 percent to 57 percent from 2014 to 2017, while the percentage of respondents who indicated corruption decreased either "somewhat" or "a lot" declined from 18 percent to 10 percent over the same period.

Table 6.7.1. Results: Has the level of corruption in this country increased, decreased, or stayed the same? (Data: Afrobarometer 2014; forthcoming)

	2014 (%)	**2017 (%)**
Increased a Lot	38	57
Increased Somewhat	25	20
Stayed the Same	18	11
Decreased Somewhat	14	7
Decreased a Lot	4	3
Don't Know	1	2

How Namibians rank corruption vis-à-vis other problems has also risen over time. Table 6.7.2 presents data on the following question from the four most-recent Afrobarometer iterations: "In your opinion, what are the most important problems facing this country that government should address?" The table shows how respondents ranked corruption relative to 32 other response options. It also shows the percentage of respondents who identified corruption as the

most, second-most, and third-most important issue facing Namibia. Corruption's relative ranking has increased since 2008. In 2008, corruption was tied with farming/agriculture, electricity, and crime and security for eighth place. It was fourth in 2017, trailing only unemployment (39 percent) and poverty/destitution and management of the economy (tied with 10 percent each).

Table 6.7.2. Perceptions of corruption as one of Namibia's most-important problems (Data: Afrobarometer 2008; 2012/2013; 2014; forthcoming)

	2008	2012/2013	2014	2017
Rank as Most Important in Problem List (out of 33)[175]	8 (four-way tie)	6 (five-way tie)	6 (five-way tie)	4
Most Important (%)	3	4	3	5
Second Most Important (%)	3	5	5	6
Third Most Important (%)	6	6	8	7
Total Ranking in Top Three (%)	12	15	16	18

Three examples from my research provide qualitative insights into these patterns. The first occurred in 2015, when I took a kombi (shared taxi) to the Ministry of Mines and Energy in Windhoek. Upon hearing my destination, the driver and my fellow passengers did not hesitate to share their opinions about the MME and the GRN. Rather than seizing the opportunity presented by my foreigner status to bemoan foreign exploration, they focused on the GRN and SWAPO. "You are going to see the fattest of the fat cats!" exclaimed the driver. "They will serve you wine and seat you in leather, I think," said another passenger. "SWAPO must spend the money they are everyday making from our diamonds somehow." "Mr. President [referring to Geingob] likes to tell us 'we cannot eat uranium,' we use it for development" said another passenger. "That does not stop them [government] from eating!" he declared with a laugh. The second passenger's use of "our" to describe diamonds is common across Namibia's natural resources (e.g., copper), but I

[175] This refers to the ranking of corruption vis-à-vis other problems selected as "most important" by respondents.

found it to be most prevalent with regard to diamonds and uranium. This is likely related to the national and global prominence of both resources.

The importance of resource governance and revenue distribution for legitimacy was also reinforced in a second example: a March 2014 SMS (text message) published in *The Namibian*. The author wrote, "The biggest challenge for the Namibian government is the equal distribution of resources. For years now, government has failed to implement this exercise and this is the sole mandate for anyone in power." This sentiment reflects the centrality of distribution to debates over mining-led development in Namibia (for more on distributive politics in the context of South Africa, see Ferguson 2015).

SWAPO's success in framing mining as essential to development but failure in delivering that development was echoed in a third example: a cartoon (Figure 6.7.1) in *The Namibian* that caused a stir in Swakopmund and Walvis Bay during the summer of 2014. At first glance, the cartoon appeared to be a provocative critique of "Chinese colonialism" on the occasion of Africa Day, a national holiday celebrating the African Union. Upon closer look, however, the cartoon was far more a critique of SWAPO than of China. It identified "Li Han Gula" as Namibia's first Chinese President. This appears to be a play on "Angula," the surname of a prominent SWAPO family often accused of running the GRN for its own gain. Former Prime Minister Nahas Angula was a supporter of Epangelo, while former Deputy Minister of Mines and Energy Helmut Angula is considered by some Namibians to be a "tenderpreneur." Hosea Angula, Judge of Appeals for the Supreme Court of Namibia, was previously Chairman for AngloGold Ashanti and Rössing Uranium. I saw copies of the cartoon throughout Swakopmund and Walvis Bay in the weeks after it ran, plastered on light poles in informal settlements and on billboards in several businesses. While I cannot verify whether the Angulas are indeed corrupt, many local Namibians

with whom I discussed the cartoon agreed with its message. “SWAPO,” said one young man I spoke with while waiting for a kombi, “would sell us and all our resources to China for a scrap of kapana (grilled meat).”

Figure 6.7.1. Cartoon in *The Namibian* on June 5, 2014 (Dudley for *The Namibian*, 2014)

GRN officials have attempted to stem perceptions of resources only benefitting Namibia’s elites through the establishment of Epangelo. In the opinions of GRN officials with whom I spoke, this should appease Namibians because, in the words of one official after I asked how increased GRN revenues would benefit Namibians, “government *is* the people. As government benefits, the people are beneficiaries” (Interview R). The examples above were not outliers though. Resource-based development may facilitate initial political legitimacy, but such rhetoric carries political risks when promises fall short of expectations. If Namibians view the GRN as corrupt, a change in ownership is of little comfort. “I’d prefer having Namibians owning it [Husab] as opposed to the Namibian government,” one employee of a civil society group in Swakopmund told me during an interview (Interview XX). “There’s a big difference.” “What has Epangelo Mining achieved for the past 10 years?” a Swakopmund kombi driver asked me. “Dololo [nothing]. It is just get-rich-quick for government,” he responded to his own question.

These sentiments were particularly common in Erongo, where the implications of corruption concerns for SWAPO's political legitimacy — especially among already-jaded youth — became particularly clear to me in a focus group (FG 8) in the Mondessa former township. Like many of their neighbors, the young men in this group had either been employed in or had sought employment in mining during the uranium boom. All were disheartened by its aftermath. They identified as SWAPO supporters, although their support clearly had limits.[176] Below is an excerpt:

> **MDB:** [After a discussion of their experience in the boom] What did you think when the boom ended, when the uranium mines started retrenching?
> **FG8-2:** One morning, there were jobs, we had hope. The next morning – it was gone! [Nods all around]
> **FG8-8:** That is right. Gone away over the night like it was never here [claps].
> **FG8-2:** It was quick, quick.
> **MDB:** Why do you think it happened?
> **FG8-3:** Foreigners come when there is money, leave when there is not. They come for the resources. The Chinese are the worst, but others have guilt too. But I do not blame them. They are doing what they must for their own people, looking for their interests. It was our government who sold us to them.
> **FG8-8:** That is right. They [government] did not wait to eat [to make money]. They do not care whether boerewors [an Afrikaaner-associated sausage] or rice [a common reference to China].
> **FG8-5:** Before, when it was all uranium growing, SWAPO promise ervens [plots of land for houses], schooling, development for us all. When there was then no work in the mines, the sun rose on them. Do you understand? We knew their lies. I began to tell…
> **FG8-6:** [interrupting] Asseblief [Afrikaans for "please," often said in exasperation]. We had always know [sic] that. I tell you, government thinks us stupid!
> **FG8-5:** They could not sing and clap hands loudly enough when there were jobs. Each time we must vote, they say to us how lucky we are, how grateful, thanks for SWAPO who gave us freedom. Bad times, like now, it is [they say] what promises? You must find work for yourself. You are lazy. How can government help a people that is so lazy?
> **FG8-2:** I think what we have to say is government is open for business for those who come with money. Those with money say do this, that is what government will do, whether it is a foreigner or a Namibian. [NAME of local SWAPO party leader] tell us they [SWAPO or government, unclear] are smarter [than the investors], they will get a good price for our resources — what we are owed. But they do not. We see nothing from those big deals. It doesn't matter which one. Husab, Rössing, all the same. But I thought the agreement was the mine would bring development to us? Shame.

[176] This is precisely the demographic from which new opposition movements in Namibia, particularly AR, draw support.

> **FG8-1:** As long as they can eat, government can be happy to take orders from outsiders. It does not matter who is in charge and what they promise. But we keep voting for them. We do not learn.

The sudden end of the uranium rush did not only hurt the GRN's revenues. It undermined some Namibians' perceptions that the GRN was working on behalf of its citizens and that its top priority was ensuring that Namibians benefit from Namibian resources. Because the GRN is typically equated with SWAPO in Namibia, these sentiments hold for SWAPO as well.

Chinese investments were identified as particularly risky by the members of another focus group (FG 10), this one with unemployed youth in the DRC informal settlement near Swakopmund. After the group collectively decided, after some debate, that inequality was Namibia's biggest problem, I asked why it is so bad in Namibia. "Inequality in our country is government created," said one young man. "If you do not believe that, why do you think they support Chinese [sic]? We all know Chinese are here to take our resources, but government will not admit it." "Inequality must be ended," emphasized a young woman, "but I think there is no motivation to do so when those in government, they benefit."

Opposition movements have begun to promote similar sentiments in their own local messaging (e.g., posters, graffiti). Youth are likely the most receptive audience for these sentiments. "Born frees" frequently lack the reverence for SWAPO and the liberation struggle held by many older Namibians. Job Amupanda, the leader of AR, has used Chinese investments as an entry point for criticizing SWAPO to youthful audiences, sometimes with xenophobic and crude language. In response to an investigative journalism piece in *The Namibian* on China's loans to Namibia, for example, Amupanda commented, "Hage [President Geingob] has sold out this country over a bowl of egg fried rice. If you think English is a difficult language, prepare your anus for Mandarin. #Neocolonisation."

Employment

Namibia's official unemployment rate for the most-recently available year (2016) was 37.3 percent of its working-age and work-seeking population (NSA 2017).[177] This is only slightly better than its high of 37.6 percent in 2008, the turning point in SWAPO's approach to mining (see Chapter 5). Even more concerning for SWAPO in terms of political stability, the official youth unemployment rate (ages 15-35) in 2016 was 43.4 percent. AR has fertile recruiting ground in Namibia's young population. The 2012 Labor Force Survey indicated that 83.6 percent of Namibians between ages 15 and 19 were unemployed, and 66 percent of those under 25 had never held a paid job.

As is often true elsewhere (e.g., Acosta 2013), SWAPO's mining-led development strategy does not seem to have improved Namibians' employment prospects. Namibian mining fits Ferguson's (2006) definition of an enclave industry. Despite SWAPO's beneficiation plans, there are few linkages between mining and other sectors. There has been significant production growth in Namibia's mining sector, but the number of permanent mining employees in 2013 (~7,500) was nearly half that in 1990 (~14,000) (Sherbourne 2014; Amukwaya 2015). These jobs are increasingly contract labor (CoM 2017), for which Namibians rarely receive the benefits provided to permanent mining company employees (Interview YY, mining labor organizer). Husab has improved Namibia's mining employment situation (see below), but it is primarily offsetting labor losses at other mines (e.g., the likely-to-be-mothballed Langer Heinrich). Only 1.5 percent of Namibians were employed in mining in 2012, versus 5 percent at independence.

[177] Several Namibian researchers and civil society leaders with whom I spoke think the official rate significantly underestimates unemployment in Namibia due to the definition used. Only 27 percent of respondents in the most-recent Afrobarometer (forthcoming) survey, for example, indicated that they had a full-time job. Another 10 percent indicated that they had a part-time position. This finding, however, could be modestly influenced by response bias.

By comparison, 6.6 percent of Namibians were employed in manufacturing, 7.1 percent in accommodation and services, and 20.1 percent in agriculture and fishing (NSA 2012).

Unemployment in Namibia is spatially-uneven, with the highest levels concentrated in minority regions like the Kunene (62.8 percent) and the Zambezi (58.3 percent) (NSA 2017; see Appendix 3 for a map of Namibia's regions). Namibia's two most mining-dependent regions — !Karas and Erongo — have official unemployment rates below the national average at 30.5 percent and 29.2 percent, respectively (NSA 2017). According to Namibian researchers and local officials, however, these unemployment rates are likely based not in the strength of mining but rather in the strength of fishing (Interviews LL, UU, OO with local government officials and researchers). Erongo and !Karas are home to Namibia's only two ports, Walvis Bay and Lüderitz. Fishing employs roughly 15,000 Namibians (NSA 2017). In Erongo, unemployment is concentrated in rural communities, small towns, and informal settlements and former townships. A regional government representative estimated that unemployment in the DRC informal settlement near Swakopmund, for example, is roughly 60 percent (Interview PP).

SWAPO and Chinese officials' portrayals of Husab often identify employment and training as among the mine's most important contributions to local communities as well as to Namibia's economy more broadly. At the October 14, 2015, China-Africa Seminar in Windhoek, the Chinese Ambassador to Namibia boasted that Swakop Uranium was paying for Husab's Namibian managers to be trained in China. Several Namibian university students attending the event described this to me as an exciting opportunity. Beyond training, Husab is projected to become a major source of employment in the region and industry. A Swakop Uranium representative indicated that over 6,000 Namibians have already been employed in the mine's construction (Interview AA). Upon reaching full production in 2018, the mine is expected to

provide 1,600 permanent jobs. While this may not seem like much, it would single-handedly increase employment in Namibia's mining sector by roughly 17 percent (estimate based on NSA 2017 data). Swakop Uranium forecasts that a further 16,000 jobs will be created through the multiplier effect, which it estimates at 8-10 jobs per permanent employee (Interview AA).

Unlike employees at other mines, who primarily live in Swakopmund or Arandis, many of Husab's employees will be provided with housing. Housing provision is viewed positively in Namibia. Most Namibian mines, including Rössing, historically provided their employees with housing, and Namdeb still does. Husab plans to house up to 4,000 employees on-site in what a Swakop Uranium representative described as a "luxury village" (Interview AA). Former President Pohamba, upon inspecting the housing site in 2014, declared it to be "better than some Windhoek hotels" (Pohamba 2014). As of November 2015, 1,000 employees were housed on-site. While "luxury village" is perhaps an exaggeration — visitors are barred, so it is difficult to assess the conditions — it would take relatively little for the development to be an improvement over housing in Erongo's informal settlements and rural communities.

While there are many problems associated with uranium mine employment (see below), low wages are not one of them. I heard relatively few complaints in Erongo about wages for permanent mining employees. According to an NGO representative familiar with Namibia's labor practices, uranium mining pays well-above-average wages, particularly given Namibia's lack of a national minimum wage (Interview TT). As discussed in Chapter 4, Rössing advertised its relatively high wages for public relations purposes prior to independence. Husab seems to be following suit: a Rössing employee complained to me in 2015 that Husab was poaching Rössing employees by offering them higher wages.

Some local Namibians were optimistic about employment opportunities associated with Husab. Although few residents of a small Damara village near Husab could identify community members currently employed in the uranium mines, several were optimistic about Husab. “Many of our young men go to look for work in the mines,” a woman with a leadership role in the community told me. “It is good work, especially for young people. I think it will be good for us now that a new mine [Husab] is here.” “There are not enough tourists,” said a man employed at a tourist camp near the mines. “The new mine will provide jobs. They are building a new village for the workers. They [mine representatives] will provide water.” One Arandis resident who operated a roadside food stand even indicated that the mine had changed her opinion of China. “If it wasn’t for the Chinese, there wouldn’t be Husab,” she said. “It is work for many Namibians. They [Chinese citizens] do not stop at my stand, but [Namibian] workers do. It is time for us to look for the bigger picture rather than always viewing Chineses [sic] with hatred (Interview CCC)”

Labor migration associated with Husab was viewed less positively in Swakopmund. Local government officials (Interviews MM, NN, PP, QQ) indicated that they have been overwhelmed by uranium job-seekers. Many of these migrants live in conditions like those in Figure 6.7.2. “We hoped the situation would improve when the uranium crash happened,” the local DRC representative told me (Interview PP). “We thought the influx would stop. But it has not. Instead, we just have more people coming here with less [sic] jobs to offer. Husab may help, but it will not be enough to meet the expectations.” Most low-income labor migrants lack access to electricity, sanitation, water, and social services. Local officials were particularly concerned with women’s safety, the growing prevalence of HIV/AIDS, and the sex trade (these problems are common to resource booms; see Obeng-Odoom 2014 on Ghana). While some jobseekers

hope the mines will train them, many lack the training necessary to work in the mines. Taking a more pessimistic view, one Damara man working at a tourist rest camp told me he "might like to work in the mine. They pay well, full-time. Some from the village go to look for jobs there, but they want education." Namibians in DRC and Mondessa (FG 8 and 10) expressed similar sentiments. "Many of the people who come here for work become stranded," one young woman said. "They feel shame at not finding work. It is difficult to return home with an empty pocketbook," she concluded with a sigh. Others nodded in agreement.

Figure 6.7.2. Housing in DRC settlement at Swakopmund, with water storage tanks for uranium mining in background

The GRN's ownership stake in Husab has contributed to an additional employment concern: labor law adherence. Some Namibians viewed the GRN's participation in Husab as likely to undermine the rights of employees. As in many other African countries, Namibians often associate Chinese companies with poor compliance with labor laws. A notable number of complaints about Chinese employment practices in the past five years — many of which were published in *The Namibian* as SMSes — led the GRN to make Namibia's labor laws available in Mandarin. Some of my Namibian informants doubted, however, that the GRN would punish CGN for labor violations in a mine in which the GRN is a co-owner. "It is jackals watching after

the chickens," explained one focus group (FG 12) participant who had previously worked in another uranium mine. "And this is particularly bad in uranium because of the radioactivity. I need new work, but I am not sure Husab will follow regulations."

This former uranium miner was correct about the dangers of uranium mining. In the scientific literature, nuclear industry dangers are typically associated with radiation exposure from nuclear power plants (Cardis et al. 2007; Taebi, Roeser, and van de Poel 2012), nuclear waste (Jenkins, Heffron, and McCauley 2016; Kyne and Bolin 2016), and nuclear weapons testing (Fradkin 2004; Bauer et al. 2005). Entire academic journals are devoted to these topics (e.g., the *Journal of Radiological Protection* (1988-Present), *Radiation Research* (1954-Present)). There has been less scientific attention to the risks of uranium mining (particularly in the global South), despite its association with negative health impacts and human rights violations in contexts ranging from apartheid South Africa to the southwestern U.S. (Albright 1994; Kuletz 1998; Kirsch 2005; Brugge, Benally, and Yazzie-Lewis 2007; Johnston, Dawson, and Madsen 2007; Graetz 2014). My search of the *Journal of Radiological Protection,* for example, revealed only 11 articles on uranium mining in its thirty-year history.[178] All but three focused on mining sites in Europe. In the 60-plus year history of *Radiation Research,* only 13 articles discussed uranium mining, all of which focused on North America or Europe. This situation reflects the power relations of nuclearity (see Chapter 4), which distinguishes uranium mining (particularly in Africa) from "nuclear" employment (Hecht 2009; 2012).

The characteristics of Namibian uranium discussed in Chapter 4 (low-grades, open-pit mining) combine with the Namib Desert to produce risks that are embodied by Namibian miners. At high-grade uranium mines in the West (e.g., Canada's McArthur River), remote-controlled

[178] I excluded articles that mentioned uranium mining but were not focused on it in this count. The total number of articles mentioning uranium mining, however, was only 53. No articles mentioned Namibia.

machines typically do most of the digging. Uranium miners in Namibia, by contrast, typically work directly in the open pit. While their equipment has enclosed cabs, workers are obviously only protected by these enclosures while they are in them. During my visits to Rössing, the Namibian mine most associated with strong safety protocols, I regularly saw employees spending significant amounts of time in the open air. Dust exposure at mines contributes to respiratory conditions like tuberculous, of which Namibia has the world's fifth-highest incidence, and asthma. I could not help but to let out a disbelieving laugh when I saw the sign in Figure 6.7.3 during one of my visits to Rössing. Given the mine's location in the arid Namib desert (see Chapter 4), I doubt that employees can ever go a day without their dust masks.

Figure 6.7.3. Dust suppression sign at Rössing uranium mine (Photo: Author 2015)

Beyond dust, employment in uranium mines presents three additional dangers to workers: chemical toxicity, radon gas, and radiation exposure. Chemical toxicity is associated with all hard rock mines, but these risks are compounded in Namibia by the use of heap-leaching and windy environment. Heap-leaching (see Chapter 4) is the cost-saving measure that makes Namibia's low-grade deposits viable. The process exposes inadequately-protected employees to carbon dioxide (Brugge, de Lemos, and Oldmixon 2005) and heavy metals (Mudd and Disendorf 2008). Radon gas and ionizing radiation present more uranium-specific risks. Odorless and

colorless, radon gas can cause lung cancer and leukemia (Rericha et al. 2006). In addition to open-pit exposure, employees can inhale radon gas through proximity to the uncovered tailing ponds used in Namibia (Wippel and Suchanek 2009). Exposure to ionizing radiation, meanwhile, increases the risk of cancer, Parkinson's disease, Alzheimer's, growth deficiencies, and neurotoxic syndromes (Shindondola-Mote 2009). Approximately 85 percent of uranium's original radioactivity remains in tailings (Wippel and Suchanek 2013). While radiation can travel through the skin, exposure via ingestion or inhalation is the greatest risk for miners. Such risks are compounded in the dry, windy Namib.

Despite these dangers, uranium mines are not subject to the strict employee safety regulations applied to nuclear power plants because mine employment is classified at radiation exposure levels below 100 mSv (millisieverts)[179] per year (Shindondola-Mote 2009). This level has been identified as a meaningful cutoff in scientific research, although the International Commission for Radiological Protection (2008) notes that it is scientifically reasonable to assume that the incidence of cancer and/or hereditary disorders rises in proportion to increasing exposure, even at levels below 100 mSv. A cumulative exposure of 1,000 mSv (roughly 10-15 years of employment in a Namibian uranium mine), for example, has been shown to result in approximately five people with fatal cancers for every 100 people so exposed (EPA 2016). The risks of long-term, low-level radiation exposure, as occurs long-term mine employees (many of whom work in the industry far longer than 10 years), are particularly understudied though (EPA 2016). Testing for long-term radiation exposure, however, requires expensive bone sampling that is rarely available in Namibia. Even when testing is available, it is difficult to directly link

[179] For comparison, 2-3 mSv per year is considered average for those with only "natural" exposure. A CT scan is associated with 15 mSv of radiation exposure, while chest and dental x-rays produce 0.02 and 0.01 mSv of radiation exposure, respectively.

Namibians' cancers, liver damage, chemical toxicity, and respiratory disorders to uranium mining due to contributing health factors (e.g., poverty, poor nutrition) (Interview TT, labor activist; Shindondola-Mote 2009). Reflecting the focus on uranium's users rather than its producers though, technologies to monitor miners' safety are also less advanced than those at nuclear plants (Hecht 2009). Geiger counters, for example, are not well-suited for the unequal spatial distribution of risks in mines (Hecht 2012). Although open-pit mines have lower radon levels than underground mines because radon disperses in open air, their radon is also more difficult to monitor. Former uranium mining employees (FG 12) had no doubt that it would be Namibians, not Chinese employees, assigned to perceived "hot spots" at Husab.

The situation is likely worse for those who are contract laborers. These laborers work in areas ranging from construction (typically short-term) to security (often long-term). Their employers are typically held to lower safety standards than mining companies (Interview ZZ with Namibian labor rights lawyer). Those working in security are particularly at risk for exposure to radiation and other contaminants due to their physical activity. Contract employees are also poorly paid relative to miners. Labor strikes are common. Recent complaints by contract employees published in the SMS page of *The Namibian* (see Chapter 1) accused a Husab security service of "applying its own rules which are violating the Labor Act" (March 1, 2016) and a construction company of "becoming a concentration camp" (October 19, 2017). During breakfast at a roadside stand in Arandis, a man told me that one of his friends worked in security at Husab. His friend had told him that the contracting company was refusing to pay the required rate of N$10/hour (roughly 75 cents), but he could not quit because there was no other work.

Even among mine employees, awareness of the risks associated with uranium mining is sometimes limited. Many of the 50 uranium mine employees interviewed by Shindondola-Mote

(2009) of Namibia's Labor Resource and Research Institute (LaRRI), for example, said they only became aware of uranium mining's risks after they or someone they knew was diagnosed with cancer or another chronic condition. My fieldwork suggests that this is likely true of uranium job-seekers as well. Less than half of the informants who expressed interest in working in the mines — but had not yet done so —were aware of uranium mining's health risks.

Other Namibians chose to work in uranium mining despite its risks. Their rationale was often simple: they needed work, and there were few alternatives. Uranium mining pays well. It entails risks, but, as one focus group (FG 12) participant employed in the industry argued,

> tell me about work in Namibia, for which I am qualified without postsecondary education, that is not dangerous to my health. I have known eight friends who worked as security guards. Five of them were killed by house-breakers [those who rob houses]. Two, dead. Cancer may kill me, but I have a good wage. I do not worry about someone killing me when I go to work in the mine.

Namibians' arguments about uranium mining's appeal did not always cite the risk of death in other industries. I did not, however, speak to anyone employed in non-managerial positions whose employment in uranium mining was not based, in my view, in necessity (see also Conde 2015). While the actual number of permanent jobs for Namibians at the Husab mine remains to be seen, it will surely be a major local source of employment. For Namibians retrenched from other mines in the aftermath of the uranium price crash, Husab offers an opportunity to regain a high wage. These employment gains, however, come at an embodied cost for those who work in the mines. As the following section describes, similar costs are also borne by local communities.

Environment, Health, and Local Livelihoods

China's pursuit of Ecological Civilization characterizes nuclear energy as a "green" source of electricity. Husab has followed suit. Swakop Uranium describes Husab's uranium as "clean energy from Namibia" (Figure 6.7.4), casting the "green" halo of China's nuclear energy

ambitions onto Namibian uranium. As discussed in Chapter 4 though, uranium mining is far from environmentally-friendly. Most of the opposition to Namibia's uranium industry that has received GRN attention has come from environmental and tourism stakeholders in Swakopmund. These movements have primarily involved white and/or upper-class Namibians who are often concerned with how intensified uranium mining will affect a "pristine" and "untouched" Namib desert (FG 7). Some Namibians not affiliated with these groups also described the Namib in similar terms. During a focus group (FG 10) in Swakopmund's DRC informal settlement, for example, a man said,

> First, the Chinese come for the uranium. The mess [damage from uranium mining] they let us keep in the Namib. You wait, in three, maybe five years, I bet they send their [nuclear] waste too. The pristine Namib will become China's dump site!

Figure 6.7.4. Supply trucks bound for the Husab mine (Photo: Swakop Uranium 2018)

Rural Erongo is not, however, devoid of people. Among others, it is home to members of two of Namibia's 12 minority groups: the Nama (~5 percent of Namibia's population) and Damara (~7 percent). Nama and Damara sub-groups in rural Erongo tend to be further marginalized within their ethnic groups due to their subsistence lifestyles. While average poverty rates in Erongo are low relative to the rest of Namibia, poverty in Erongo has a more unequal spatial distribution than elsewhere. It is concentrated in the in-land, rural communities in which the Nama and Damara live (Ministry of Finance 2008).

According to Namibian and Chinese officials, Husab's benefits for these communities extend far beyond employment. At the 2014 Chamber of Mines Conference, for example, Swakop Uranium's Vice President announced that its foundation would spend $500,000 per year on local development. The Foundation's four goals — education and skills development, employment creation and poverty alleviation, sound environmental management, and community support — reflect the GRN's own development priorities for rural Erongo as well as the growing emphasis many Chinese SOEs place on corporate social responsibility (CSR) (for more on the CSR practices of Chinese companies, see Tan-Mullins and Mohan 2013). Namibian and Chinese officials cite local produce procurement, community gardens, and opportunities for small and medium-sized enterprises (SMEs) as examples of benefits that will transform the region. These programs are highlighted at sponsored events that attract a national audience, including the perhaps ill-advised but popular annual Husab Marathon (Figure 6.7.5).

Figure 6.7.5. 2014 Husab Marathon (Images: Swakop Uranium 2016)

Officials' portrayals of rural Erongo often characterize its communities as in need of "revitalization." During his 2015 Forum on China-Africa Cooperation (FOCAC) address, President Geingob described the mine, its connection to China, and its local impact as follows:

> The mine [Husab] was opened in a desolate area characterized by barren hills and mountains amongst which a modern highway has been built, leading to life. This mine has brought meaning and purpose to the life of previously unemployed Namibians. We welcome such projects and that's why we have come to participate in FOCAC with the

> intention to continue building on our relationship with China in pursuit of more win-win opportunities. (Geingob 2015)

Geingob is certainly correct that rural Erongo is desolate, with a harsh climate. The road signs in Figure 6.7.6 are fine examples of truth in advertising. GRN officials have argued that Husab is particularly important to local development in light of these conditions and their perceptions of the "poverty" of local livelihoods. These livelihoods consist primarily of artisanal mining, subsistence agriculture, and livestock herding. A Windhoek-based GRN representative described the mine to me as a lifeline for an area he characterized as "jobless. There is nothing to do. The people ride in donkey carts. They must surely want better." Chinese representatives have used similar language. At the 2016 event commemorating Husab's first yellowcake, Swakop Uranium CEO Zheng Keping said, "[w]e can now proudly declare that the Husab mine is in production, bringing new vigor and vitality to the ancient Namib desert."

Figure 6.7.6. Scenes from rural Erongo (Photos: *left and right,* author; *center,* shared by an informant)

Many local Namibians, however, feel marginalized from and even harmed by the national and international project of wealth creation underway at Husab. While cities like Swakopmund are affected by intensified uranium mining through water shortages, migration, and other issues (FG 7), the implications of Namibia's uranium rush are most acutely experienced in rural desert communities. The potential health and livelihood risks of intensified uranium mining are many. Tailings, for example, are the most significant source of radiological exposure in the entire

nuclear fuel chain (UNSCEAR 2016, 30). Off-site tailings residues containing carcinogens have been identified near all of Namibian uranium mines (Wippel and Suchanek 2013). While Erongo has a much lower population density than, for example, South Africa's uranium-rich Witwatersrand, its mines also produce a greater-than-average volume of tailings to which local Namibians can be exposed.[180] For local populations, exposure to tailings-based pollution typically occurs via water or air transport associated with leaching, run-off, high winds, or structural failures. Run-off risk is particularly high during the rainy season, when the Namib can experience flash flooding. An environmental scientist indicated that groundwater remediation after such events takes upwards of 40 years (Interview AAA). Several tailings dams in Namibia have leaked due to structural failures in recent years, including Rössing in 2014 and Husab in 2017. Rössing's facilities are aging, but the Husab incident indicates that such accidents can happen even at new mines. High winds can also disperse tailing residues and radon gas (Brugge, de Lemos, and Oldmixon 2005). Exposure is greatest for residents who are unable to seal their homes from windstorms, including those living in informal or indigenous shelters. This is the case for nearly all Namibians living in minority communities near uranium mines.

Radiation presents an additional threat. Radiation risks for local communities are similar to those for miners, but they have attracted even less scientific attention (Conde 2015). This situation is related to the distinction between "natural," pervasive uranium and "nuclear" risk (Hecht 2012; see Chapter 4). All soil, for example, contains trace amounts of uranium. Advocates of Namibia's uranium industry often argue that those working in or living near

[180] The lower a mine's grade, the greater the volume of tailings relative to the volume of yellowcake. At Canada's McArthur River, which has a uranium concentration of roughly 20 percent, approximately one ton of waste rock is produced for every metric ton of uranium ore (Biello 2009). That one metric ton of uranium ore can in turn produce roughly 440 pounds of yellowcake. Namibia's mines, by contrast, can produce approximately one-fifth to one-fourth of a pound of yellowcake for each metric ton of mined uranium (assuming a concentration of 0.05 percent), with roughly 400 times the amount of waste rock.

uranium mines are exposed to no more radiation than many people are exposed to in their homes. Communities near mines, however, have significantly higher levels of carcinogenic radon gas exposure than is typical even in areas with relatively high uranium concentrations (EPA 2016).

Furthermore, as political ecology and environmental justice scholarship (e.g., Bryant and Bailey 1997) has long indicated, the populations exposed to the highest radiation risks in Namibia are far from random. Higher-level mine employees, for example, often live in Swakopmund, where they can access independent, high-quality healthcare. Lower-level workers, by contrast, live in mine-proximate towns like Arandis. Their healthcare is provided by company-affiliated doctors, and their housing is of a relatively low standard, which increases their exposure. Rural minority groups like the Damara and Nama have even more limited options. Excluding the occasional "cultural tourism" visit, these communities lie out of view for most Namibians — hence why even Erongo residents sometimes think the Namib is unoccupied. Due to these communities' social (e.g., poverty) and environmental (e.g., desert environment, unsealed shelters) risk factors beyond uranium mining, it is difficult to assess how much of the higher-than-normal local incidence of respiratory ailments and cancers (Conde 2015) is due to uranium mining and seek compensation accordingly.

Namibians who rely on farming and livestock herding face the greatest radiation exposure risks (Conde 2015). The Nama, for example, have lived in rural Erongo since at least the 1600s. In rural Erongo, they rely on aquifers and ephemeral rivers to provide water for their crops, livestock, and communities. Several Nama informants indicated that Husab has decreased local water availability. A young Nama man living in Swakopmund, where he had relocated to look for work, said he "could not see a future there…We wonder where the water disappears? Husab takes from the Swakop River. It never reaches my community" (Interview BBB). A

herder described the threat that water scarcity presents to his community in pained language during a focus group (FG 13) in a Nama community. “Water belongs to our culture. Is it ours to decide what happens.” The mines are able to build desalination plants when the water runs out, he noted, but local communities have no such option. “What happens to us when the water here is no more?” he asked with pain in his voice. “Government can make money,” he concluded, but “they must not make it by taking from us.” Inadequate water supplies subsequently led the man’s village to turn to water piped in by NamWater. The village was not alone in resorting to municipal water supplies. I learned in May 2018 that another community in rural Erongo now owes NamWater over N$60,000 (roughly $5,000) for water used in the past three years. NamWater has closed several taps in the community until an agreement is reached to repay the debt. According to one of my research assistants, the situation has led to significant local tensions between those who consume more water (e.g., herders) and those who consume less.

As suggested by the above quote, many of my Nama informants were aware of the GRN’s role in uranium mining intensification through projects like Husab. Despite the convictions of GRN officials, however, most of my informants had little interest in working in local mines. As I left a village in 2015, I stopped to speak with a Nama man harvesting Nara seeds by the roadside (Interview DDD). When I asked him what he thought about the potential of Husab to create development in his community, he expressed contentment with his current livelihood (farming). “I do not want to work for that mine, Husab,” he told me. “The mines, the government, they are the ones destroying this [he gestured to a nearby Nara plant].” After several minutes of conversation, he concluded with exasperation, “[t]hey [referring to the government] do not know what is good for me.” This man was not alone in expressing frustration with the GRN’s mining-based plans for local development. Most of my local informants characterized

projects like Husab as far more likely to undermine the quality of life for local communities than to enhance it. Many were concerned about whether their communities could even survive another uranium rush. “Life here has always been hard,” one woman said during an informal conversation outside her home. “Now [with the new mine], I think it will be more hard [sic].”

Several Nama informants indicated that they had contacted the GRN about their concerns, including water scarcity. The advocacy of Swakopmund’s environmental community led the GRN to issue a moratorium on new uranium licenses during the uranium rush. Most of Namibia’s Nama communities, however, have had less success. As a minority group with subsistence livelihoods in rural Namibia, they have little political or financial capital with which to challenge the GRN. One woman in a focus group (FG 13) said the GRN officials she spoke with treated her concerns as “backwards” and “foolish.” Another participant agreed. “They tell us we don’t know development,” she said. “We don’t know what is good for us.” When I asked GRN officials about these concerns in later interviews, most expressed empathy and affirmed their willingness to speak with these communities about their concerns. They also, however, reinforced the message that uranium mining is essential to improving the quality of life in such communities, which they characterized as desperately in need of development.

In addition to farming and herding, other livelihoods are also threatened by uranium mining. Among my Damara informants, negative perceptions of Husab centered on local sense of place and uranium mining’s implications for tourism. Many Damara communities rely on artisanal mining and community-based conservation for income. Both activities require a steady stream of tourists. The largest source of revenue for one village I visited, for example, was tourists coming to hike the Spitzkoppe outcropping. Another village relied primarily on roadside gem sales to tourists (see Figure 6.7.7).

Figure 6.7.7. *Left and right,* Roadside gem stands in rural Erongo; *center,* artisanal mining (Photos: shared by informants)

As noted earlier, some Damara Namibians were enthusiastic about the possibility of mining-related employment. Far more, however, were concerned with how intensified uranium mining would affect their livelihoods. A woman working at a roadside gem stand like that pictured in Figure 6.7.7 described the impact of the mines on her livelihood. “There are now few animals for the tourists to see,” she said with a sigh. Increased traffic, namely mining equipment and lorries [trucks] hauling supplies to the mines, had frightened local wildlife, leading many animals (e.g., ostriches) to leave the area entirely. The economic impacts of this change were significant. “No wildlife means no tourists,” she explained, and, furthermore, “no money.”

A community-based conservation project employee expressed similar concerns related about the new power lines and water pipelines for Husab (Figure 6.7.8). “These,” she gestured overhead, “were not here even three years past.” She continued, “[t]he desert is a spiritual place for us. The tourists that comes [sic] with their bakkies [pickups] and tents also desire peace, the quiet, to be with nature.” Such peace and quiet was “no longer here,” she concluded. Mining construction projects are typically active at night, when equipment can be transported without disrupting local traffic and the temperatures are more conducive to labor. The nighttime lights of under-construction uranium mines are visible up to 20 miles away. A young man who leads “star hikes” — the Namib is renowned for its lack of light pollution — told me that he had recently

offered partial refunds to several tourists after they complained that the experience was not what they had envisioned.

Figure 6.7.8. Power lines for uranium mining in rural Erongo (Photos: Author 2014)

6.8 Patterns in Focus Group and Interview Participants' Perceptions

China's involvement in Husab is an important factor in Namibians' perceptions of the mine and its implications. Almost all of my research participants who had heard of Husab knew that China was involved, a higher level of awareness than existed even for the GRN's involvement in the mine. If Canada, Australia, or France was the foreign investment partner in the project instead of China, Namibians' perceptions might have differed significantly. Asking Namibians' what they think about Canada is one of my favorite fieldwork questions; despite the major investments by Canadian companies in (non-uranium) mining in Namibia, I rarely encounter a Namibian with a strong opinion on Canada. The opposite is true of China. I heard sentiments along the lines of "all Namibians will speak Mandarin soon" and "Chinese take-away"[181] on an almost daily basis. Before closing this chapter, I want to discuss a few more of my impressions regarding the relationships between Namibians' perceptions of China and their perceptions of mining-led development. In addition to informing future research, these

[181] The latter phrase seems to be particularly popular among young Namibian males.

impressions are relevant to analyses of how local factors shape perceptions of China (e.g., Carmody 2011; Power and Mohan 2013) and mining.

Among Namibians with negative opinions of Chinese-supported mining intensification, I suspect that the "China factor" of Husab had an intensifying effect on opinions they already held. Namibians who seemed to have long-distrusted the GRN's mining-led development strategy in uranium or had been negatively impacted by it (e.g., tourism operators, farmers), for example, seemed to be more distrustful of this strategy in light of Chinese involvement in it. Those who seemed to have long-suspected corruption in the GRN seemed particularly likely to interpret Husab as further evidence of that corruption. Finally, those who had seemingly long been disappointed by the GRN's development efforts seemed more likely than others to see Husab as a sign of the GRN's continued failure to understand what is necessary for development. This intensification did not, however, seem to hold for those with already-positive views. Instead, these Namibians' support for mining as a development strategy seemed to transfer to China (e.g., the focus group participant who said the mine made them more supportive of China because it would generate employment).

Testing these impressions in relation to the Husab mine would seemingly require either pre-Husab perception data that I lack or a group of Namibians unaware that China was involved in the mine (so I could observe their perception of the mine before and after sharing this information). The latter is doubtful given the widespread awareness in Namibia of the mine's ownership. My suspicion *could* be tested, however, using a survey experiment in which some respondents were told a that (fake) proposed mine would be owned by China and others were not told who would own the mine. Another question could perhaps be designed to test the relationship between positive views of mining and perceptions of China in general (i.e., to

identify whether knowledge of Chinese involvement in Husab or other similar projects seems to improve respondents' perceptions of China). I plan to use the impressions described above to inform follow-up survey research in Namibia and beyond.

Finally, employment, minority status, and age seemed to play particularly strong roles in shaping my research participants' perceptions of the developmental implications of intensified uranium mining through Chinese investment. These factors also likely influenced the underlying perceptions (e.g., regarding GRN corruption) described above. The influence of employment in Namibians' opinions of China, however, seemed to be uniquely strong in rural Erongo. Combined with indications that geographic location (e.g., proximity to a Chinese investment) appears to influence some Namibians' perceptions of China (Section 6.7), this outcome suggests that there is likely an interaction between contextual and individual characteristics in shaping perceptions of China. This outcome could be related to the relative lack of exposure to Chinese influence outside of mining in many rural Erongo communities. For example, these communities rarely have the "China shops" and Chinese immigrant populations found in Namibia's cities. The also often lack regular access to the Namibian media (social or traditional). As a result, rural Erongo participants' opinions of China seem to be more closely-related to mining than in Windhoek or Swakopmund, where Namibians' opinions seemed to be more strongly-driven by broader topics of concern (e.g., corruption in the GRN). This finding suggests that research in mining communities may offer a particularly clear view of Africans' perceptions of Chinese involvements in mining alone. Such local perceptions would also, however, likely be driven by local variables not affecting those living farther away from Chinese mines (e.g., personal experience of water scarcity). The best analysis would likely combine a representative sample of those both directly and indirectly affected by Chinese investments like Husab.

These insights are far from conclusive given the unrepresentativeness of the data described in this chapter. More research is needed to verify these interpretations and their broader applicability or lack thereof. My findings do suggest, however, that both contextual (e.g., location, nature of local Chinese investment, national context) and individual factors (e.g., employment), as well as interactions between them, influence Namibians' perceptions of China.

6.9 Conclusion

Mbembe (2001) uses hybridity to highlight the complexity of exploitation in African societies during both formal colonialization and the postcolonial experiences that follow. Reflecting on colonialism, for example, Mbembe (2001) challenges assumptions that colonial relationships were created purely through coercive violence. Instead, he argues that colonialism was transnationally implemented, with some among the colonized exercising degrees of agency in its implementation and/or using colonialism to pursue their own aims. The Namibian and Chinese governments, despite rhetoric on both sides, are not equal partners in projects like Husab. As I have shown in this chapter and Chapter 5, however, GRN officials are still managing to leverage relationships with China — whether as the necessary finances to pursue an increased state role in mining or as a model around which to base an increasingly authoritarian politics — to pursue their own political ambitions. While the GRN's use of Chinese investment in projects like Husab has increased its resource sovereignty (see Chapter 5) though, it also seems, with some exceptions, to have undermined the developmental legitimacy of both SWAPO and the GRN, particularly in minority communities near uranium mines. Furthermore, far from challenging all forms of mining-related exploitation, the GRN's increased agency in the realm of natural resource ownership via Husab appears to be facilitating intensified exploitation of some of its most marginalized citizens.

With Husab's full production still months away, the mine's long-term implications for Namibians remain unclear. It will likely take several years for the GRN to repay the Husab loan given Namibia's current economic situation. Only then will the GRN be able to use revenues from the mine to fulfill (or not fulfill) its stated development goals. Despite the confidence of the GRN official quoted earlier in this chapter though (page 246), the increased government revenues that should follow the Husab loan's repayment may not translate into improved quality of life for all Namibians. The thousands of promised jobs may or may not come to fruition, and they may or may not employ Namibians. Incidents like the leak at the Husab tailings facility may be rare events, or they may signal the beginning of a pattern that will further threaten the environment and the health and livelihoods of local communities.

Husab's development in a minority area with little political representation leads me to be skeptical of its transformative potential. As described in Chapter 5, Husab has made it possible for the GRN to challenge historical mine ownership patterns by playing a more direct ownership role in the industry. It seems, however, that the GRN is increasingly using its strengthened role in extraction to promote a politics of unity centered around SWAPO. As Melber (2011) argues,

> The colonial economy has not been fundamentally transformed [since independence]. The self-enrichment strategy of the new elite sacrificed any redistribution of wealth on a national scale in favor of the majority for their own luxury and privileges. We have a pact among elites, old and new, but no true emancipation from colonial rule. The real scandal is that we once again sold out the ordinary people for the benefit of a few.

My research suggests that Namibians' perceptions of Husab's developmental potential align well with the situation described by Melber (2011) above. While Husab's ownership structure may be transformative in the realm of mine ownership in Africa, its potential to meaningfully improve the lives of ordinary Namibians seems far more limited. Furthermore, by reinforcing the Namibian state, under SWAPO, as the provider of development for the Namibian people,

projects like Husab may perversely make it more difficult for minority communities like those described in this chapter to challenge mining-as-development or to pursue alternative forms of development for themselves. Developmental authoritarianism is certainly not rare in Africa (or in China), but the prevalence and intensity of this approach appears to be increasing in conjunction with China's rising influence on the continent. Such changes are not, however, necessarily being driven by China. Combined, the evidence presented in this chapter and Chapter 5 suggests that Africa's political leaders are playing a driving role in recent authoritarian shifts on the continent that may significantly undermine the rights of minority communities in particular.

In sum, Namibians' experiences, as described in this chapter, appear to support the concerns of scholars like Taylor (2007), Melber (2011), and Tull (2006) that China's rising influence may facilitate a more authoritarian form of politics across sub-Saharan Africa. In this regard, Namibia presents a particularly compelling case study. In contrast to the authoritarian, autocratic, and illiberal countries that dominate the literature on China's political influence in Africa, Namibia is a respected democracy (albeit, like most if not all democracies, a problematic one). If an authoritarian backslide justified in the name of following in China's developmental footsteps can happen in Namibia, the implications of China's rising influence for African politics — and minority groups in particular — may be rather dire indeed.

Chapter 7
Conclusion

> What if we posit that, in the present moment, it is the global south that affords privileged insight into the workings of the world at large?
>
> -Comaroff and Comaroff (2012, 1)

7.1 Overview

The primary goals of this dissertation were to understand 1) how Namibians are engaging with China's rising influence in mining, particularly in the context of a domestic resurgence in resource nationalism, and 2) what implications China's rising influence in Namibia has for the distributive politics of mining. I focused on uranium mining because of its geopolitical significance, its importance to China's pursuit of a more "green" development model, and its economic significance in the context of Namibia. I analyzed China's technopolitical rationales for pursuing nuclear energy in Chapter 3 and the broader geopolitics of Namibian uranium in Chapter 4. In Chapters 5 and 6, I evaluated the politics and distributive implications of one Chinese investment in particular: the Husab uranium mine, which is the Chinese government's largest-ever investment in sub-Saharan Africa. I discuss the broader significance of my research in this conclusion. Before discussing the implications of my findings for specific areas of scholarship in Section 7.2, I want to begin by reviewing my key empirical findings.

With full production still months away, the long-term implications of Namibia's Husab mine remain to be seen. Much will depend on the GRN's management of the project. Husab may mark a watershed moment in a trend toward worsening problems associated with Namibia's natural resource wealth by, for example, facilitating increased corruption among GRN officials or by emboldening SWAPO in the pursuit of a more authoritarian form of politics. Alternatively, Husab may signal a shift toward a more egalitarian distribution of the benefits and costs of

natural resource extraction by making Namibians, through their government, stakeholders in their own natural resource wealth. In this latter case, the mine may still be viewed in unfavorable terms by local populations for whom it constitutes a livelihood, environmental, or health threat. Through the strengthening and/or expansion of Namibia's developmental policies, however (e.g., the basic income grant), the mine could also bring about meaningful improvements in quality of life for many Namibians if it is managed well. Namibia's resource-based development trajectory is not yet set in stone, but Husab is likely to play a significant role in solidifying that trajectory.

While we are still in early days, however, the development of the Husab mine is already affecting resource politics in Namibia and beyond. Notably, it signals several shifts in the power relations of the nuclear industry, including uranium mining. Reflecting the rhetoric of win-win development favored by Chinese and Namibian officials, Husab is a materialization of south-south solidarity and mutual benefit for the Namibian and Chinese governments (Chapter 5). For the Chinese government, it is a means to solidify both its domestic and geopolitical power by using nuclear energy to address the environmental problems associated with its rapid growth — without sacrificing the pursuit of increased living standards and industrialization (Chapter 3). The GRN, meanwhile, has leveraged Husab to increase its ownership stake in an industry historically dominated by Western companies (Chapter 4) and to consolidate the political authority of the SWAPO-led state (Chapter 6). This is a noteworthy achievement for a small African state in the realm of resource sovereignty. It suggests that, far from foreign investment and resource nationalism being at odds, African leaders may be leveraging increased Chinese investment to pursue resource nationalism and improve their bargaining position in the global economy (Chapter 5) or vis-à-vis their populations (Chapter 6). Practically, Husab may be a

particularly compelling model for resource-rich African governments seeking to increase revenue stability in the face of turbulent commodity prices (Chapter 5).

China-Africa partnerships may facilitate further challenges to nuclear geopolitics. Many of the reasons why nuclear energy appeals to the Chinese government also apply to African governments (Chapter 3). Nuclear energy is an efficient energy source capable of meeting the needs of a rapidly-growing population and an industrializing economy without sacrificing air quality. It also signals geopolitical prestige and technological mastery. The GRN, for example, has begun negotiations with China to build a nuclear power plant in Namibia. If nuclear energy is appealing to Namibia, where it makes relatively little sense given Namibia's low population density and electricity usage and current economic recession, it is likely to be appealing to the governments of sub-Saharan Africa's many countries with larger populations, higher electricity demand, and faster rates of growth. In addition to benefiting the Chinese government, which is positioning itself as a leading exporter of nuclear technology, such Africa-China partnerships would challenge the long-standing geopolitical separation between uranium-producing African states and nuclear world powers (Chapter 4).

Within Namibia, however, the distribution of the benefits and costs associated with Husab is likely to further marginalize already-marginalized local populations. While Husab may offer some local employment benefits, local communities will also overwhelmingly bear the environmental and social costs of improving air quality for Chinese citizens and the bargaining position of the Namibian state (Chapter 6). For many local Namibians, Husab is the materialization not of south-south solidarity but instead of a politics of knowledge that priorities economic growth above, or even at the cost of, alternative development aims like health and environmental sustainability. The marginalization of these populations did not begin with

Chinese investment. It is unlikely, however, that Namibia's uranium industry would be growing without Chinese investments — particularly given low uranium prices and Namibia's low-grade uranium deposits, which are appealing primarily for reasons of political stability (Chapter 4).

By reinforcing the SWAPO-led state as the trustee of development, the GRN's enhanced resource sovereignty through Husab may also perversely make it more difficult for minority communities to challenge mining-based development or advocate for their own natural resource-related rights (Chapter 6). As the state's position strengthens, contestations of mining may be more easily rendered "extremist" or "unpatriotic" by SWAPO leaders. These dangers for minority communities may be aggravated by the growing prominence of China as a model for development in Africa, which can provide credibility for ruling parties like Namibia's SWAPO that are keen to consolidate their control (Chapter 6).

Scholarship on the hybridity of postcolonial African politics — emphasizing, for example, how national independence often signaled both an historical rupture in patterns of exploitation and their continuation by other actors (e.g., African states) and means (e.g., foreign investment (Mbembe 2001; Cooper 2002) — is useful in evaluating how China's rising influence may affect the distribution of costs and benefits related to uranium mining as well as other extractive sectors. Characterizing projects like Husab as "neo-colonial" exploitation is an overgeneralization given the challenges such investments present to nuclear geopolitics and mining ownership patterns (Chapters 3, 4, and 5). It is equally clear, however, that, far from overturning all forms of mining-related exploitation, China's rising influence may also deepen historical inequalities and injustices associated with mining (Chapter 6).

The focus of this dissertation primarily on Namibian rather than Chinese actors means that I have provided more second-hand insights into the Chinese side of Namibia-China relations

than first-hand empirics. By focusing on Namibians' engagements and perceptions of China, however, my goal was to improve our understanding of how African actors, not just the Chinese, are influencing China-Africa relations. In her book on Angolan political leaders' engagements with China's Export-Import Bank, Corkin (2013, 5) notes,

> An analysis of China-Angola relations would be considered by most to be an extension of Chinese foreign policy research. Unwittingly, this reveals how the African actors involved in relations with China are often overlooked or dismissed as passive or inconsequential, with China as the driving force in this relationship. In fact, this misses half the story.

My research contributes to our understanding of the other half of the China-Africa story through a case study of Namibia, a country that differs in meaningful ways from the conflict-prone, authoritarian and/or autocratic, "resource-cursed" contexts where most research on China-Africa relations has focused (Chapter 1). In the duration of this chapter, I discuss my key findings and their broader significance. I also introduce my plans for future research. I conclude with some brief thoughts on the importance of studying global changes from places like Namibia.

7.2 Key Findings

The Importance of Geopolitical History in Africa-China Relations

Analyses of Africa-China relations have often interpreted those relationships through the language and viewpoints of the West (see Mawdsley 2007; Large 2008a). Chinese investments in raw materials, for example, are frequently characterized as "resource-grabbing" (Anshan 2007; Burgess and Beilstein 2013). The relationships between African and Chinese leaders and populations are not necessarily mediated through the West though (Corkin 2013). China's relationships with many African countries can be traced back to even before the 1955 Bandung Conference (Snow 1988). While the language of "south-south solidarity" may seem trite and unconvincing to Western audiences, my research in Namibia suggests that such messages are

powerful in contexts where liberation struggles continue to define politics. Research on similar rhetoric in other African countries (e.g., Corkin 2013 on Angola; Youde 2007 on Zimbabwe) indicates that Namibia is not an isolated case. While the appeal of liberation-oriented rhetoric may be particularly strong in Namibia given its extended and violent independence struggle, China's historical ties to African countries, whether through specific liberation struggles or the broader promises of the Bandung Conference, inform the national and sub-national lenses through which Africans interpret contemporary relations with Chinese actors and their outcomes. These historical ties are one of the most powerful tools African governments possess in justifying increased ties with China to potentially-doubtful populations. They are also one of the Chinese government's greatest comparative advantages vis-à-vis Western states with colonial histories.

Further comparative research is needed to better understand the full suite of factors that influence agreements between the Chinese government and African governments and their outcomes. In uranium, for example, China's state-owned CGN has been far more successful in establishing uranium partnerships with the GRN than China's state-owned CNNC has been in establishing uranium partnerships with the Nigerien government. It is unclear, however, how much of this outcome reflects weaker historical ties between the Chinese and Nigerien governments and how much reflects other factors (e.g., Namibia and Niger's divergent domestic politics, different approaches by CGN and CNNC, the divergent histories of Nigerien and Namibian uranium, the relative power of other foreign investors, etc.). In the interim, this dissertation has reinforced the need to incorporate historical geopolitics into efforts to better understand how Africans are engaging with and perceiving China's rising influence and why.

African Agency and Resource Sovereignty

Scholars (Burgess and Beilstein 2013; Caceres and Ear 2013) and policymakers (see the statements by Clinton and Tillerson in Chapter 5) have expressed concern that Chinese investments threaten African states' sovereignty over natural resources. These arguments build on fertile discursive ground, including characterizations of China as an aggressive power (Mawdsley 2007; Large 2008a) and portrayals of Africans as passive recipients of foreign investment (Wainaina 2013). Scholars of Chinese foreign policy, however, emphasize China's prioritization of sovereignty and economic rights (Strauss 2009). Meanwhile, African studies scholarship has demonstrated how African governments have historically leveraged foreign investment to pursue their own objectives (Bayart and Ellis 2000; Cooper 2002). My analysis of Husab challenges the argument that China's rising influence in Africa will necessarily reduce the sovereignty of African states over natural resources. While the GRN's loan agreement with China may prove to be a concern if Namibia's economic recession continues, Namibian political leaders, far from being passive investment recipients, have leveraged Chinese investments to pursue their domestic goals, including, notably, in the realm of resource nationalism. The agency of the Namibian government in its relationship with China may be constrained, but it has been powerful enough to be effective in this instance.

Husab's hybrid ownership challenges the neocolonial narrative often attributed to Chinese investments in resource extraction. Building on the point above about the importance of historical geopolitics and rhetoric, the mine can be considered to be a materialization of the rhetoric of "south-south solidarity," at least among governing elites. The GRN appears to be benefitting more from the Husab mine than its mere 10 percent ownership share might suggest. In addition to singlehandedly making Epangelo an influential actor in Namibian mining, the

GRN's involvement in Husab has reinforced the legitimacy of the Namibian state as the trustee of national development. It has resuscitated Namibia's uranium industry in the face of low global prices and will contribute nearly $700 million in annual export revenue, an amount equal to 7 percent of Namibia's GDP. Because Husab's uranium will be exported directly to China rather than sold on the world market, the mine may also represent a rare opportunity for a resource-dependent economy to reduce revenue instability, a central problem of the resource curse (Auty 2001 and 2002) and a prospect likely to be of interest to other resource-dependent states. Far from being at odds, the Husab case study indicates how African leaders can use Chinese investments to pursue resource nationalism. The GRN's decision to pursue this path has entailed opportunity costs. It may lose out on revenue, for example, if uranium prices increase beyond the export price stipulated in Epangelo's contract with CGN. Were it not for the mine's Chinese ownership, however, the GRN is unlikely to have gleaned revenue from Husab beyond modest royalties and tax payments. The GRN's participation in Husab is also likely to provide revenue stability benefits that, depending on the GRN's management of them, could also enhance political stability (although this may not necessarily be to Namibians' benefit, as discussed in the following sub-section).

The GRN's success in leveraging Chinese investment to pursue its own political goals may differ from the experiences of other governments in Africa or elsewhere. Ear (2013), for example, describes Cambodia as effectively a province of China, if not a fully-owned subsidiary (though he consents that Chinese investments have certainly solidified the power of Cambodia's elite). Further research is needed to better understand the contextual factors that shape how governments are or are not able to attain significant benefits in negotiations with China. Additional attention should also be paid to the terms of those agreements (e.g., resource-backed

loans), although these terms are difficult to access in Namibia, let alone in more authoritarian states. The GRN's ability to use its relatively modest power (small population and economy, low uranium prices, lack of other investors post-uranium rush) to negotiate a stake for Epangelo in Husab does, however, suggest that such examples of African agency may be more common than many analysts suspect. Carmody and Taylor (2010: 497) have argued that Chinese investors employ "flexigemony" in their relations with African states, adapting their engagements to reflect particular historical and geographical contexts. My research in Namibia suggests that African political leaders may similarly be adapting their "extraversion" (Bayart and Ellis 2000) and "gate-keeping" (Cooper 2002) strategies to maximize their negotiating power vis-à-vis Chinese investment.

China and Authoritarian Politics

Academics (Tull 2006; Taylor 2007; Melber 2007) and analysts (Brookes and Shinn 2006) have expressed concerns that China's rising influence will facilitate a shift toward more authoritarian politics in Africa, particularly in resource-rich states (Anshan 2007; Rogers 2007; Rotberg 2008). My findings in Namibia suggest these concerns may be well-founded. This dissertation contributes a democratic case study to research on how China's rising influence is affecting African politics, which has overwhelmingly focused on authoritarian, illiberal, and/or autocratic contexts thus far (Reyna 2007; Large 2008b; Carmody and Taylor 2010; Veeck and Diop 2012; Corkin 2013; Mohan and Lampert 2013; Ovadia 2013; Patey 2014; Amanor and Chicava 2016; Chipaike and Bischoff 2018). My analysis indicates that concerns about Chinese investment facilitating authoritarianism may be particularly well-founded in resource-rich states, where projects like Husab can further consolidate the power of the state vis-à-vis minority communities and opposition groups. If SWAPO has used Chinese investments as a tool to

consolidate political power in a much-praised democratic context like Namibia, it seems likely that other authoritarian and illiberal — as well as democratic — governments could do so as well.

Building on the discussion of agency above though, my analysis of SWAPO's recent turn toward authoritarianism also illustrates the importance of evaluating the roles of African political leaders — not just Chinese actors — in driving political changes on the continent. In Namibia, SWAPO (Chapter 6) and opposition groups (see Section 7.3) are using their *interpretations* of China as a development model to pursue their own political goals. Chinese investments in Namibian uranium are providing SWAPO leaders with an opportunity to express authoritarian tendencies that date to the liberation struggle, but it is SWAPO, not China, that appears to be driving those changes. Chinese officials in Namibia have gone to great lengths in public to argue that Namibia must pursue the development model that is best for Namibia. While the situation may be different behind closed doors, I am skeptical that the Chinese government aims to overhaul Namibia's existing democratic governance structure. Instead, its priority seems to be stability, regardless of regime type. I plan to conduct further research (see Section 7.3) on how additional African actors (e.g., opposition movements) interpret China's development model and use those interpretations to pursue their own political goals.

The Limits of Mining-Based Development

As noted above, one of this dissertation's contributions to the literature on resource nationalism and foreign investment (Andreasson 2015; Childs 2016) is its identification of how political leaders can use Chinese investments to pursue resource nationalism. The case study of Namibian uranium also has implications for research on the developmental challenges associated with the resource curse (Karl 1997; Ferguson 2006; DeLoughrey and Handley 2011), including

opposition to mining-based development (Conde 2015; Van Teijlingen 2016; Andreucci and Radhuber 2017; Lu, Valdivia, and Silva 2017; Schilling-Vacaflor 2017). Uranium mining offers many potential benefits for extractivist governments. It can generate desired employment, revenues, and geopolitical prestige (or at least the perception of it). Namibian President Geingob is fond of saying that Namibians cannot "eat uranium," but they can, instead, use it for development. Uranium-based development, however, may be even more difficult than other forms of resource-based development. First, it is more tightly regulated than other commodities. Beneficiation is a policy priority of many extractivist governments, but such opportunities are impossible in uranium without the elusive approval of the IAEA. Second, uranium extraction can come with threats to resource sovereignty (e.g., the stationing of U.S. officials at Rössing) that undermine resource nationalist rhetoric. Finally, uranium mining entails costs for employees, local communities, and environments that are even more profound than those of many other mining industries due to uranium's radioactivity. These factors would suggest that mining-led development may be more likely to be challenged in the case of uranium than in other mining industries.

Yet, my research indicated that the distributive politics of uranium mining have not (yet) substantively threatened the GRN's project of mining-based development or SWAPO's political legitimacy. This finding provides insights into both the persistence of mining-led development strategies and their potential weaknesses (see Section 7.3). Although Namibians have the right to protest mining-based development, such protests have been limited. Factors shaping the lack of significant opposition to uranium intensification in Namibia include the low population of the surrounding area, the limited political power of nearby communities, and the lack of a coalition capable of overcoming fragmentation between local residents and wealthier environmental and

tourism-associated groups. The GRN's "problem closure" (Hajer 1995, 22) strategy in framing state-led mining as a solution to the problems of resource extraction (e.g., inequality) has also influenced this outcome. By reframing proper resource extraction as defined by a strong state role, GRN officials have transformed a debate over the relationship between mining and development into a debate over resource ownership. Disagreements over ownership raise important questions regarding who should benefit from mining. They can also spur debates over the balance of power between public and private and domestic and foreign interests. They rarely, however, provide sufficient discursive space to question the foundational assumption that mining can drive broad-based development.

Finally, particularly in the context of a democratic government, the lack of successful opposition to Namibian uranium mining illustrates the power of political narratives that characterize mining as a driver of national development, modernity, and progress (Coronil 1997; Ferguson 1998; Kohl and Farthing 2012; Revette 2017) despite the persistence of developmental challenges associated with natural resource wealth (Karl 1997). The case study of Namibia suggests that some of the findings of the neo-extractivist literature on Latin America can perhaps also be applied to African contexts, although further work is needed to better understand how the regions' divergent histories and contemporary contexts shape their extractivist dynamics in addition to national and local-level factors. As I noted in the conclusion of Chapter 5, the Namibian case study supports arguments that there is no singular resource curse. Instead, resource-related challenges manifest in different combinations and with different implications in association with the characteristics of particular extractive projects as well as multi-scalar political, economic, and historical contexts. Comparative research on uranium mining intensification elsewhere in the global South (e.g., Niger, South Africa) would provide further

insights into whether Namibia's experience with uranium intensification is an outlier. Such uranium intensification is not likely to exist, however, outside of contexts with Chinese investments until the uranium market recovers. Given the strengthening pursuit of nuclear energy in countries beyond China (e.g., India, Saudi Arabia), however, such comparative research may be possible in coming years.

China: Neocolonial Power or Development Partner?

A key question in scholarly and media debates over the "new scramble" for Africa has been whether rising Chinese investment represents a new development opportunity for Africans or merely another iteration of neocolonialism/imperialism. Bloom and Poplack (2016) argue that China's emphasis on mutual benefit increases Africans' power to shape development relative to Western approaches. Melber (201l), by contrast, frames Chinese involvement in Africa as the new face of neocolonialism, arguing that Chinese involvement may take a different shape than the West's historical tactics but has similarly exploitative goals. Brautigam (2009) and Carmody (2011) identify a middle ground between these positions, arguing that Chinese investment is neither "good" nor "bad" for Africans as a coherent group. Instead, it is beneficial to some, particularly political elites, but harmful to others, such as merchants who face competition from Chinese traders. My dissertation reinforces the value of nuanced and contextualized approaches to understanding the varied implications of China's rising influence for Africans.

In his analysis of development planning in India, Gidwani (2002) argues that development is not a static project. Instead, development outcomes are shaped by local actors who, while they may act with constraints, can still negotiate its forms and effects. My findings suggest that the same is likely true of China's rising influence. Chinese investments are situated within multi-scalar power dynamics, both internal to countries and localities and in relation to

the global political economy. The implications of these investments are shaped by how actors leverage, interpret, negotiate, challenge, and co-opt them and how particular investments interact with processes and relationships operating across multiple scales. In the case of Namibia, the implications of Chinese investments like Husab are shaped by factors that include historical geopolitics (e.g., China's support for Namibia during the liberation struggle), national politics (e.g., perceptions of corruption), the specific investment actors involved (e.g., Chinese SOEs, the GRN), and the nature of the investment (e.g., uranium mining). The futility of de-contextualized attempts to frame Chinese investments in binary terms as development opportunities or neocolonial exploitation is evidenced by this dissertation's case study of the Husab mine, which simultaneously increases the relative power of a historically-marginalized state and deepens the marginalization of some of its most-marginalized citizens.

Ultimately, as geographers have long argued and my findings support, understanding the implications of Chinese involvements in Africa requires asking not only "for whom" and "by whom," but also "where?" For a uranium miner in rural Namibia who would otherwise be unemployed? For a small business owner in Windhoek without access to the product sourcing necessary to match the competition's low prices? Even in a country with a small population, the answers are not simple. This is certainly frustrating for policymakers and political observers seeking a simple story to explain "China in Africa." Academics conducting research in this area, myself included, must work harder to make our work accessible and meaningful to a broader audience. Providing such contextual information, however, is an essential part of making research on China-Africa soundbites like "resource-grabbing" meaningfully reflective of the experiences of Africans.

7.3 Future Research Directions

I consider this dissertation to be the first stage of a more extensive research agenda on Africans' engagements with geopolitical, environmental, and demographic transitions. My research introduced me to two puzzles around which I plan to develop future work: the politics of marine extractive frontiers and the influence of the "Chinese development model." I discuss each of these future research directions below.

Politics of Marine Extractive Frontiers

I focused this dissertation on uranium mining, but I have also researched the politics of diamond mining in Namibia. Diamonds account for 10 percent of Namibia's total annual GDP. As the world's first country to mine marine diamonds, Namibia's Debmarine (a GRN-De Beers partnership) is a marine mining pioneer. Today, 90 percent of Namibian diamonds, worth $600 million per year, are marine. By 2025, Namdeb expects that nearly 100 percent of Namibia's diamonds will come from the sea. Marine diamond mining in Namibia is less controversial than uranium mining. Diamonds are a source of local pride in southern Namibia, and even environmentalists treat diamond mining as the status quo. This lack of conflict aligns with research on the politics of offshore oil, which indicates that offshore extraction tends to be less conflict-prone than on-shore extraction because, among other reasons, it is often more difficult for opposition groups to stop, sabotage, or commandeer due to its relative inaccessibility (Le Billon 2001) and capital-intensive nature (Sidaway 2003).[182] In addition, offshore production would seem perhaps to be more difficult to contest because the government's moral authority

[182] For specific examples, see Ferguson (2006) on Angola and Yates (1996) on Gabon. Research on Nigeria is an exception here because much of its oil extraction is coastal rather than truly off-shore.

over oceanic exclusive economic zones (EEZs) may be stronger than its authority over, for example, ancestral lands.[183]

Namibia's government is currently weighing whether it should become the first country to develop another marine mining industry: phosphate. Improved commercial viability, technological advances, the depletion of on-shore resources, and increased demand for seabed-occurring minerals, particularly in China, have catalyzed interest in marine mining beyond the diamond industry. Demand for fertilizer to facilitate agricultural intensification is driving particularly strong interest in marine phosphate, a critical fertilizer component for which there is not yet a synthetic substitute. Proponents of marine phosphate mining, including many SWAPO officials, argue that it would employ similar dredging processes over a comparable area to the accepted marine diamond industry. Furthermore, proponents argue that marine phosphate mining would generate greater beneficiation opportunities than exist for diamonds, including a domestic fertilizer industry and the intensification of Namibian agriculture. Given Namibia's high unemployment rate, economic arguments have proven convincing in support of other mining sectors, including uranium. Epangelo has already become a stakeholder in marine phosphate, with partial ownership in both exploration projects currently underway.

Yet, most Namibians I spoke with in interviews, focus groups, and day-to-day conversations in the three coastal cities that would become the hubs of marine phosphate mining (Swakopmund, Walvis Bay, and Lüderitz) were far more concerned with the social and environmental implications of phosphate mining than of diamond mining. They also expressed more skepticism regarding phosphate mining's potential to generate broad-based development. In the case of uranium, as detailed in Chapter 6, local opposition has been fragmented between

[183] The Nigerian government, for example, claims a higher percentage of offshore than onshore oil revenue for redistribution to other Nigerian states (Akpabio and Akpan 2010, 118).

local minority groups with little political power and coastal environmental and tourism groups. Both lack strong connections to SWAPO. The same, however, is not true of marine phosphate mining. The GRN Environmental Minister's decision to approve marine phosphate mining in late 2016 was met with local outcry that escalated into widespread protests and a social media firestorm, rare events in the land of "peace and stability." The debate has subsequently divided SWAPO against itself. Due to Cabinet indecision and infighting, the decision on phosphate has been turned over to Namibia's Supreme Court, with a ruling expected in June 2018. In addition to dividing SWAPO on mining for the first time since at least independence, phosphate mining has catalyzed renewed debate over the possibilities and limits of mining-led development.

Why has marine phosphate become contested in Namibia when other mining industries, including marine diamond mining, have not? Through a comparative, mixed-methods project focused on Namibia and South Africa, which is also considering marine phosphate mining, this project will seek to answer this question and broader ones like the following: What variables (e.g., resource type, foreign investment source, livelihood, historical experience) affect how individuals, communities, and states respond to proposals to develop marine mining frontiers and manage competing demands on marine environments (e.g., mining, fishing, tourism)? How might those engagements differ from on-shore extraction? And, what might opposition to and support of marine extractive projects tell us about mining-based development and its limits? By providing insights into the politics of marine mining frontiers, this project will have practical implications for debates over the intensification of marine mining while contributing to scholarship on resource politics (Watts 2004; Soares de Oliveira 2015), resource imaginaries (Coronil 1997; Perreault 2006; Kohl and Farthing 2012; Schroeder 2012) and materialities

(Mitchell 2011; Bridge 2013), and extractive frontiers (Sidaway 2003; Groves 2005; Ferguson 2006; Gramling and Freudenburg 2006).

The "Chinese Development Model" and Post-Liberation Ruling Parties in Southern Africa

In Chapter 6, I described how SWAPO leaders have recently begun to characterize China as a model for Namibia's development. Most references to China prior to late 2014 characterized China as a friend to Namibia due to its liberation struggle leadership. All weather-friendship, mutual benefit, and south-south solidarity were the key themes in this rhetoric. In the last three years, SWAPO leaders have also begun to cite China not only as a friend, but also as a development model (Chapter 6). SWAPO leaders are not the only Namibians citing China as a development model though. Namibia's primary opposition movement, the youth-based Affirmative Repositioning (AR), is not yet officially a political party — its leaders characterize it as an anti-political "movement" — but it is already SWAPO's greatest political threat. AR is led by a charismatic former SWAPO Party Youth League leader, Job Amupanda, who was expelled from the party in 2015. Amupanda espouses self-described "Marxist-Fanonian" politics and is employed as a University of Namibia Political Science faculty member. He often criticizes the GRN's close ties with China as exploitative of Namibians and Namibian natural resources (see, for example, the "#neocolonisation" quote in Chapter 6). Yet, he also draws on his interpretations of the success of the "Chinese development model" to criticize SWAPO and to highlight its failure to achieve the development goals outlined at independence. In short, Amupanda is also framing China as a "development model" for Namibia, but he is using his distinct interpretation of that model to argue against SWAPO's model, as described in Chapter 6. My initial research suggests that AR's interpretation differs the most from that of SWAPO in two areas: 1) *how* economic rights should be prioritized over political rights (i.e., is dissent the

enemy, or is the continued dominance of liberation-based politics the problem?) and 2) whether economic development entails stability and unity (the "Xi model") or revolutionary redistribution (the "Mao model").

Through a comparative approach, this research will assess the prevalence of these and other interpretations of China as a development model in Namibia as well as in South Africa and Zimbabwe (pending the political situation in the latter). My goal will be to address questions like the following: How are domestic politics in southern Africa changing as liberation struggle leaders age out of the system, leave office, or lose political legitimacy? How are both ruling party and opposition leaders (particularly among "born frees") using their interpretations of the "Chinese development model" to advance their political aims? And finally, what implications is the political rise of the "born-free generation" having for political stability, resource governance, and distributive politics, among other areas, in the region and beyond? Given the heavy use of social media among youth movements, I plan to pursue this research through mixed methods fieldwork and social media data collection. In addition to Africa-China research, this project will contribute to the literatures on African politics, development, and violence (Bayart 1989; Cooper 1994 and 2002; Bayart and Ellis 2000; Moore 1998; Mbembe 2001), the political legitimacy of liberation struggle parties (Sauders 2011; Giollabhuí 2013; Hart 2014; Melber 2014; Southall 2014), youth politics in Africa (Durham 2000; Marks 2001; Iwilade 2013), and debates over rights (economic versus political) and development in Africa (Wilson et al. 2000; Crush 2001; Bond 2004; Metz 2011; Jordaan 2015).

7.4 Final Thoughts

My aim in this dissertation was not to demonstrate how Namibia does or does not fit one overarching theoretical framework. Instead, my goal was to apply a catholic approach, grounded

in both postcolonial scholarship and empirical fieldwork, to investigate the wide-ranging implications of China's rising global influence — from resource ownership and political regimes to minority rights and perceptions of distributive and environmental justice — in the resource politics of merely one industry (uranium) in an African country (Namibia) rarely deemed to be of geopolitical significance. Despite their government's nuclear energy ambitions, Namibians are all too aware of their lot when it comes to influencing global events. In fact, the phrase I heard most often in Namibia — after "Chinese takeaway," of course — was "when South Africa sneezes, Namibia gets the flu." Namibians use this sentiment to express frustration with their country's continued dependence on its former occupier. When South Africa's economy faces an economic recession, the argument goes, it is Namibia, whose currency is pegged to South Africa's, that suffers a depression. As Namibia's relationship with China grows, its much-hated reliance on South Africa may decrease. I doubt the phrase will disappear in the near future though. If not South Africa, it will perhaps soon be China's sneeze setting off Namibia's flu. Either way, it seems unlikely that Namibia will be giving another country the metaphorical flu anytime soon.

Namibia's lack of global power status, however, is precisely what I think has made it a revealing place from which to analyze the implications of China's rising global influence. I am far from the only one to take such a position; similar arguments have informed postcolonial studies-affiliated interventions in development studies (e.g., Moore 1998), nationalism studies (e.g., Ranger 2004), resource politics (e.g., Coronil 1997), and, more recently, critical geopolitics (e.g., Sharpe 2011). Corkin (2013) has led the advocacy for such an approach in Africa-China studies as well. This dissertation has followed Corkin's lead in analyzing how Namibian actors

are engaging with China's rising influence, rather than simply focusing on how China's rising influence is affecting Africans.

I began this chapter with a quote from Comaroff and Comaroff (2012), who open *Theory from the South* by asking, "what if we posit that, in the present moment, it is the global south that affords privileged insight into the workings of the world at large?" The best places to look for evidence of how the world is changing and why, I think, are often the very places that seem, at first glance, to be the most removed from such developments. Evidence of China's rising influence comes in the form of Zimbabwe's military informing China, rather than the U.S., of its plans to remove Robert Mugabe from power. The implications of such influence are visible in the surprising turn of Namibia, a respected democracy, toward a more authoritarian style of politics. If we want to understand how power operates, the most revealing viewpoints are often those of the people and places that appear, at first glance, to lack that power the most — the very ones prone to get the flu when others merely sneeze.

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Appendix 1
Cited Interviews

Table A.1.1. Participant characteristics for cited interviews[184]

Interview	Gender[185]	Nationality and/or Ethnicity[186] [187]	Relevant Stakeholder Group(s)
A		Chinese	Chinese Government (Embassy)
B		Chinese	Chinese Government (Embassy)
C		Namibian	GRN: Lower-level (Development)
D		Namibian	GRN: Upper-level (Geological Society of Namibia)
E		Namibian (Owambo)	SWAPO: Leader (SWAPO Party Youth League)
F		American	U.S. Government (Department of Energy)
G		Namibian	GRN: Upper-level (Ministry of Mines and Energy)
H		Namibian	GRN: Mid-level (NamPower)
I	Male	Namibian (Damara)*	Youth: Roadside entrepreneur
J		Namibian (Owambo)	Mining: Former uranium miner
K		Namibian (Afrikaner)	Mining: Mid-level, Mining company
L		Namibian	GRN: Lower-level (NamWater)
M		Namibian (Owambo)	SWAPO: Upper-level
N		Namibian	GRN: Mid-level (Ministry of Mines and Energy)
O		American	U.S. Government (Embassy)
P		Namibian (Owambo)	SWAPO: Upper-level
Q		Namibian (Owambo)	SWAPO: Upper-level
R		Namibian	GRN: Mid-level (Ministry of Mines and Energy)
S		Namibian	Mining: Mid-level, Chamber of Mines

[184] Information is provided to the extent that it does not compromise interviewee confidentiality (see Chapter 1). Information is only presented for cited interviews.

[185] Due to the relatively few women in Namibia's NGO, private mining industry, diplomatic community, SWAPO Party leadership, and academic sectors, gender is not revealed for these interviews to protect interviewee confidentiality. I also do not include gender when the pool of potential interviewees is small (e.g., a town government with a limited number of employees), and a locally-informed reader could possibly identify the research participant based on gender and the context.

[186] Ethnicity is included if it is relevant to understand the interview. It is typically considered rude to inquire about ethnicity in Namibia. As a result, in some cases, I base my identification on the individual's first language or my identification of the individual. These cases are indicated with a * to denote uncertainty.

[187] Due to the relatively small size of Namibia's civil society and some segments of its diplomatic community, providing the nationality of some interviewees could compromise confidentiality. In these cases, I have simply listed the interviewee's nationality as "non-Namibian."

T		Non-Namibian	Mining: Mid-level, Mining company
U		Namibian	GRN: Lower-level (Ministry of Mines and Energy)
V		Namibian	GRN: Lower-level (Ministry of Mines and Energy)
W		Namibian (Owambo)	SWAPO: Leader (SWAPO Party Youth League)
X		Non-Namibian	Civil Society (Research)
Y		Namibian	GRN: NamPort (Walvis Bay)
Z		Namibian	Mining: Upper-level, Chamber of Mines
AA		Namibian	Mining: Mid-level, Swakop Uranium
BB		Chinese	Mining: Mid-level, Swakop Uranium
CC		Namibian	Mining: Upper-level, Epangelo
DD		Non-Namibian	Mining: Upper-level, Mining company
EE		Namibian (Afrikaner)	Mining: Mid-level, Mining company
FF		Non-Namibian	Mining: Upper-level, Mining company
GG		Non-Namibian	Mining: Lower-level, Mining company
HH		Namibian (Owambo)	Affirmative Repositioning (Member)
II		Namibian (Owambo)	Affirmative Repositioning (Member)
JJ		Namibian	Local Government (!Karas)
KK		Namibian	Local Government (Lüderitz)
LL		Namibian	Local Government (Lüderitz)
MM		Namibian	Local Government (Erongo)
NN		Namibian	Local Government (Swakopmund)
OO		Namibian	Local Government (Walvis Bay)
PP		Namibian	Local Government (Swakopmund -DRC)
QQ		Namibian	Local Government (Swakopmund - Mondessa)
RR		Namibian	Civil Society (NGO)
SS		Namibian	Civil Society (NGO)
TT		Namibian	Civil Society (Labor rights)
UU		Namibian	Civil Society (Research)
VV		Namibian	Civil Society (Research)
WW		Namibian	Opposition Party: (RDP, Leader)
XX		Namibian	Civil Society (NGO)
YY		Namibian	Mining: Labor Group
ZZ		Namibian	Civil Society (Labor)
AAA		Namibian	Civil Society (Research)
BBB	Male	Namibian (Nama)	Youth, Unemployed (Swakopmund)
CCC	Female	Namibian (Damara)	Food seller (Arandis)
DDD	Male	Namibian (Nama)	Farmer (Rural Erongo)
EEE	Male	Namibian (Owambo)	Kombi driver (Windhoek)
FFF		Namibian	Civil Society: Media

Appendix 2
Focus Groups

Table A.2.1. Composition of focus groups

Focus Group	Participants (#)	Composition	Location
1	5	City employees	Lüderitz
2	6	Diamond employees	Lüderitz
3	8	Fishing employees	Lüderitz
4	6	Tourism stakeholders	Lüderitz
5	6	Youth (affiliated with a youth center)	Lüderitz
6	7	Mining industry stakeholders	Windhoek
7	6	Tourism/Environmental stakeholders	Swakopmund
8	8	Self-identified SWAPO supporters	Mondessa (former township), Swakopmund
9	9	Young SWAPO Members	Katatura (former township),Windhoek
10	8	Unemployed youth (affiliated with job training program)	DRC (informal settlement), Swakopmund
11	8	Uranium mine employees	Arandis
12	9	Former uranium mine employees	Arandis
13	4	Nama community	Rural Erongo
14	6	Damara community	Rural Erongo
15	8	Youth (affiliated with a youth center)	Katatura (former township), Windhoek
Test	8	Open-Call (University of Namibia)	Windhoek
Test	6	Open-Call	Lüderitz

Appendix 3
Namibian Politics

Population

The ethnic composition of Namibia's population presented in Table A.3.1 is from the 1989 census. This was the last time that data on ethnicity was collected in Namibia. Since independence, collecting such data has been framed by GRN officials as "tribalism."

Table A.3.1. Namibia's population by ethnic group, 1989 (Data: Malan 1998)

Ethnic Group	Population Percentage
Owambo	49.8
Kavango	9.3
Damara	7.5
Herero	7.5
White	6.4
Nama	4.8
Coloured	4.1
Caprivian	3.7
San	2.9
Baster (Rehoboth)	2.5
Other	1.5

Presidents

Namibia's three Presidents (all SWAPO) have been:

- Sam Nujoma (1990-2005)
  - Served 3 terms after Namibia's constitution was changed to allow a 3rd term
  - Owambo ethnic group
- Hifikepunye Pohamba (2005-2014)
  - Owambo ethnic group
- Hage Geingob (2014-Present)
  - Damara ethnic group[188]

[188] Geingob's selection as the SWAPO nominee was contentious within SWAPO in part due to ethnic politics. I interpret the party's selection of a non-Owambo leader as signaling an attempt to strengthen its support among the Owambo and undermine the UDF, a Damara-based ethnic group. If so, this strategy appears to have been successful in at least the latter category. The UDF leader, Justus ǁGaroëb, stepped down as the party's leader in 2013. Subsequently, the UDF, which came in third in the 1989 elections with 6 percent of the vote, did not participate in the 2014 Presidential election in which Geingob was elected. It received only two seats in the National Assembly elections that year, with 2 percent of the vote.

Administrative Regions

Figure A.3.1. Namibia's administrative regions (Map: GRN 2012)