

Crafting Spaces of Value

Infrastructure, Technologies of Extraction and Contested Oil in Nigeria

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Abstract

This ethnographic investigation of the rise of the artisanal oil refining industry in the Niger Delta, Nigeria, shows how oil infrastructures have become contested between the state, multinational oil corporations and local youths in what I call a 'new oil frontier'. I argue that artisanal refineries are indicative of the politics of crude oil governance and reveal complex, integrated and innovative forms of extractive practices by youth groups within many Niger Delta communities. Using the example of the Bodo community in Ogoniland, where local youths operate refineries constructed with local materials and technology, I show that such refineries represent an emergent form of energy capture that transforms the creeks of the Niger Delta into islands of carbon sale and challenges state and corporate power.

Keywords: Africa, energy, infrastructure, Nigeria, oil, technology

In 2011, Nigeria announced an amnesty programme targeted at Niger Delta insurgents who, for many years, had crippled the oil industry. The programme was designed to end in 2012, but it has since become a permanent feature of the Nigerian state (Adunbi 2015). While the amnesty programme succeeded, to a large extent, in mitigating insurgency in the Niger Delta, Niger Delta youths have engaged in new forms of contestation that challenge the state's governance of the region's huge oil reserves. This article investigates the rise of the artisanal oil refining industry in the Niger Delta, Nigeria. Drawing on ethnographic fieldwork that spans several summers, I argue that the construction of oil refineries by Niger Delta youths is emblematic of how oil infrastructures have become a contested field between the state, multinational oil corporations and local youth in what I call a 'new oil frontier'. My central argument is that artisanal refineries are indicative of the politics of crude oil governance and reveal complex, integrated and innovative forms of extractive practices by youth groups within many Niger Delta communities. Using the example

of the Bodo community in Ogoniland, where local youth operate refineries constructed with local materials and technology, I show how such refineries represent an emergent form of energy capture that transforms the creeks of the Niger Delta into islands of carbon sale and challenge state and corporate power. This form of capture, I suggest, is embedded in practices that are reshaping livelihoods, community relations and governance in Nigeria. Thus, artisanal refineries represent an example of the hybridization of technologies of power that is illustrative of competing notions of extraction in an oil enclave such as the Niger Delta region of Nigeria.

This article represents an attempt to rethink contests around oil extraction by looking critically at the emergent oil infrastructure constructed by youths as competing with state oil infrastructures in the production of crude oil. Thus, I suggest that we move beyond seeing such oil infrastructure and the selling of crude and refined crude oil as the theft of state oil and redirect our focus to the processes through which such infrastructure is built and how they represent a new frontier in the struggle for the capture of energy in Nigeria. This emphasis, I argue, shows how technologies of crude refining reshape extractive governance in resource enclaves, and how artisanal refining is able to compete with state structures of extraction over extractive practices in global oil frontiers. I also seek to move beyond seeing the existence of local extractive processes and oil infrastructures as mere 'survival strategies' (Ugor 2013: 271) adopted by youths in response to a criminal state (Bayart et al. 1999; Ukiwo 2011; Zalik 2011). I argue instead that artisanal processes and structures of extraction reflect innovation and hybrid forms of knowledge, including knowledge of extractive technology that aids in the development of new energy practices. I use 'innovation' to denote practices that demonstrate creativity in adapting new methods to an extractive process – such as oil refining – that has often been seen as the exclusive preserve of large oil corporations. In most literature (see, for example, Auty 2001; Ross 1999; Humphreys, Sachs, and Stiglitz 2007; Vitalis 2007), oil extraction is posited as requiring enormous investment and sophisticated technology. Thus, it is often stated that only large oil corporations have the material capital and technological sophistication to extract oil for refining purposes. My ethnographic research among the Niger Delta refining operators, particularly in Bodo, Ogoniland, shows how youths are able to creatively develop technologies of extraction using innovatively crafted local materials to construct refineries in the oil creeks of the Delta. I further argue that participation in this particular mode of oil production is engendering relational forms that disrupt the state's claim to ownership and total capture of oil resources while at the same time creating opportunities for youths to establish structures that strengthen networks and cultivate support for their activities within communities rich in oil resources. The story of Bodo, I suggest, is the story of how oil infrastructures represent two forms of captivity – one epitomized by the state and its corporate partners' attempt to monopolize oil benefits, and another that emboldens the youth to make claims to ownership of oil resources through institutionalizing new energy practices. The outcome is a contested field between the state and local youth in the management of oil resources in the Niger Delta.

Artisanal refineries, infrastructures and the captive oil creeks of the Delta

Most scholarship on extractive practices in the postcolonial state focuses on the effects of resource extraction on communities and how communities respond to corporate practices, particularly to the ways in which natural resources constitute part of state capture. This scholarship shows how power circulates both in and beyond the nation-state, the constitution of postcolonial imaginaries, and the interrogation of development or the production of modern subjects (Adunbi 2015; Askew 2002; Chalfin 2010; Ferguson 2006; Hicks 2015; Mamdani 1996 Mbembe 2001; Mitchell 2002, 2009; Shever 2012; Watts 2004). While such scholarship shapes our understanding of the politics of extraction in postcolonial states, I move away from the emphasis on the effects of resource extraction, instead paying attention to new energy practices that represent the duality of capture – state and community capture of crude oil. The duality of capture symbolizes a process through which extraction happens and how these processes play into articulations of power and the production of competition between actors within the nation-state (Adunbi 2015; Doughty 2019; Ellis 2016; Leonard 2016).

Resource extraction, what Hannah Appel et al. (2015: 18) call ‘a global production network with particular properties, actors, governance structures, ecologies, institutions and organizations’, creates a distribution and global trade network that is constituted as a distinct mode of knowledge production. This form of knowledge production is assumed to be restricted to its participants, that is, oil corporations, and in James Ferguson’s (2006) telling, to create gaps between it and the countries or societies it purports to serve – gaps that are strengthened by the corporation’s control and management of the market of extraction in cahoots with the postcolonial state. In describing the centrality of the market to extractive practices, Timothy Mitchell (2002: 7) considers postcoloniality beyond its literal sense, writing that it should be seen as including ‘forms of critical practice that address the significance of colonialism in the formation and practice of social theory’. In this situation, the market is central to the formation of the economy, which in turn is central to the construction of modern capitalism. While all of the above shows how capital reconfigures power in a universalizing and modernizing mode, reshaping and reconstituting the global, I rethink the ways in which new energy practices are reshaping the notion of crude capture at the local level, using the ideas of capitalist enterprises as a form of knowledge that propels crude extraction and refinement by youths of the Niger Delta.

New energy practices of youths of the Niger Delta challenge the notion that oil requires more technology and fewer workers – especially expatriates (Appel 2019; Leonard 2016) who have little or no interest in the extractive enclaves other than participating in the process of crude capture (Doughty 2019). Central to this argument is the claim that the inability of oil to foster ‘forms of carbon-based political mobilization’ explains ‘the undemocratic politics of oil’ (Mitchell 2009: 422). See also (Auty 2001; Humphreys, Sachs and Stiglitz 2007; Ross 1999, Vitalis 2007).

As much as the materiality of oil creates possibilities for the inception of oil-capitalism dominated by big corporations (Adunbi 2015; Appel, Mason and Watts 2015; Mitchell 2009), it also establishes parameters for the participation of local actors who contest ownership of such resources with the state and their corporate partners. These contestations, often in marginalized and overlooked spaces, such as those of the Niger Delta, require a more comprehensive understanding of global energy practices. Energy practices are not only a form and tactic of governance employed by states and their corporate partners, but also a lived experience characterized as 'the managing and disciplining of movements of people, capital, and resources' structured by spatially and temporally discrete ideals of egalitarianism (Sawyer 2004: 50).

In understanding these global energy practices that shape extractive enclaves, I propose that we also need a critical analysis of how oil extraction transforms the landscapes of postcolonial states from rural agrarian economies to transnational economies. This form of oil transformation, I argue, creates a centralized economic and political system that connects the nation-state to the international commodity market (Adunbi 2015; Apter 2005; Leonard 2016). Since oil extraction requires a vast and complex infrastructure that is largely provided by transnational capital and located in extractive enclaves, this transformation therefore generates capacity to create a duality of capture that supports new modes of contestation around oil infrastructure. This form of contestation can be seen in the transformation of populations, deprived of what they consider to be their oil and the benefits associated with it, taking it upon themselves to claim ownership in a variety of ways, such as building oil infrastructure in the creeks, to compete with state capture of oil. While multinational oil corporations such as Shell, Chevron and ExxonMobil invested millions of dollars in building pipelines, barges and flowstations for the exploitation and transportation of oil resources to connect their business to the international market (Adunbi 2015; Appel 2019; Mitchell 2009, 2011; Appel 2012; Rogers 2014), youths operating oil infrastructures in the Delta use locally derived materials to build makeshift flowstations, and drums and tankers to transport crude oil to their customers. In what I call the 'captive creeks of oil' in the Delta, youths are redefining energy practices to encompass a makeshift oil refining infrastructure that competes with oil infrastructure sanctioned by the state and operated on its behalf by multinational oil corporations through a joint venture agreement with the federal government of Nigeria. I use 'infrastructure' to refer to a system of organization that revolves around the exploitation, production, marketing and institutionalization of oil as a local and international business commodity that is at the heart of the state and communities where the commodity is exploited. My use of 'infrastructure' therefore has resonance with what Brenda Chalfin (2016: 19) describes as 'a focal point from which to track day-to-day practices, experiments, improvisations and replications, along with the tacit forms of consent and coercion that frame them.'

As the lifeblood of a nation-state and of the communities where it is exploited (Adunbi 2015; Appel 2019; Apter 2005; Ferguson 2006; Vitalis, 2007; Mitchell 2011; Rogers 2014; Watts 2004, 2012), oil shifts from being mere black crude to

being a valued commodity whose importance is shaped by its capacity to build relationships and to transform individual lives and the life of a nation-state. Oil's capacity to transform the life of a state from an agrarian and subsistence farming economy to one of resource extraction is entrenched in its ability to create wealth for the nation-state through capture (see, for example, Adunbi 2015; Apter 2005; Watts 2004, 2012). Such transformations result in a situation where resource-rich communities, conscious of the wealth derivable from their environment and denied access to the wealth that oil extraction generates for corporations and the state, rely on relationships developed with other extractors, in this case youths who operate makeshift oil infrastructures, to derive benefits from oil. The relationships that the youths develop with members of communities are often based on kinship ties. These ties transform the youths who manage makeshift oil infrastructures into community overseers of a new structure of governance that is crafted, managed and deployed within the creeks of the Niger Delta. Aided by knowledge of local technologies, for example knowledge about how to construct boats and canoes, and with the cooperation of oil-bearing communities, youths who operate, manage and extract oil in the creeks are reshaping community spaces in ways that structure new energy practices. The participation and cooperation of people from the creeks of the Niger Delta communities in this complex network strengthens the power of the youths who operate local technologies of extraction. Developing strong relationships with members of the communities helps to strengthen the position of the youths as providers of benefits that had eluded communities for many years because of state and corporate control. As an informant told me, 'We know the youth who operate the refineries. For many years, the corporations would come and take our oil without giving back and the state will support them. When the youth came and told us they can help us enjoy some of our oil, the entire community rallied around and threw their support behind them'.¹ Many informants corroborated this, and when asked about their perception of what the youths were doing, would respond thus: 'The youth are not thieves. They are not rogues. It is the state and the corporations that are thieves and rogues. Who cares about the state and corporation anyway? As far as we are concerned, the youth are our sons and they are doing the right thing for us'.² Making reference to the youth as 'our sons' reifies the relation of kinship between the youth and community members who see what the youths do as a benefit to the entire community. By operating these technologies of extraction, the youths insert themselves into the heart of the communities such that the relationships they develop alter forms of governance to reshape lives and frame everyday practices, thoughts and culture. One example of such a community is Bodo, a town at the heart of Ogoniland, a site of oil protests against the state and corporations in the 1990s.

Kpoo fire refineries: oil and the creeks of extraction and production

Bodo, located in the Gokhana local government area of Rivers State, is one of several communities that make up Ogoniland in the Niger Delta region of Nigeria. Bodo is a few kilometres from Port Harcourt, the capital city of Rivers State. Bodo

is made up of about sixty-two thousand inhabitants living in thirty-five villages. In the past, fishing and farming were mainstays that created employment for over 60 per cent of the population, with trading, metal work, masonry and carpentry accounting for the remainder. The community is also host to the Shell Petroleum Development Company of Nigeria. The activities of Shell have rendered many inhabitants of Ogoniland unemployed as a result of loss of livelihood, polluted waters and oil spills on farmlands. This is particularly true for people in Bodo, who engage in fishing and other agricultural enterprises. Bodo was also one of the centres of mobilization by the Movement for the Survival of the Ogoni People, or MOSOP. In the 1990s, the late Ken Saro Wiwa, who was killed by the military regime of General Sani Abacha in 1995, led the organization in its battle against Shell and the Nigerian state (Apter 2005; Okonta 2008; Okonta and Douglas 2001). The Ogonis sought compensation from Shell and the Nigerian state over their polluted environment. In 2011, the United Nations Environment Program, UNEP, issued a comprehensive report on pollution in Ogoniland which suggested that 'oil pollution in many intertidal creeks has left mangroves denuded of leaves and stems, leaving roots coated in a bitumen-like substance sometimes 1 cm or more thick' (UNEP 2011: 3). Today, in the midst of these polluted environments where fishing and farming have become extremely difficult, many youths have resorted to constructing and managing oil infrastructure with support from community members.

In the summers of 2015 to 2018, I conducted ethnographic research in the creeks of Bodo where there are thriving artisanal refineries. The creek, located in the Bodo West oil field where Shell operates, has only one access road. During the period of my research, I came to understand the processes and practices of crude oil capture used by the youths who operate artisanal refineries in the area. Three such youths are Naaton, Kenule and Biebari. These three men operate within the community with their motorbikes, and when it's time to go to the creek, they use the speedboat. Kenule, Biebari and Naaton³ are in their early thirties, mid twenties and early twenties, respectively. Naaton has scars on his face and arm, which he told me resulted from an injury sustained when one of the refineries caught fire in 2014. Kenule described himself as a veteran of the 1990s Ogoni struggle against Shell Petroleum.

When a first-time visitor approaches the creek of Bodo West, the smell of crude oil is noticeable, as is black expendable crude that looks like big stones. At the site are makeshift tankers, drums, cooling spots, pipelines, and a fireplace for refining oil – all locally constructed. In Bodo, artisanal refining is called 'kpoofire'. During my first visit, as we approached one of the refining tanks, Naaton announced, 'Welcome to our refinery where we refine our crude oil for sale.' Welcoming me to 'our' refinery, Naaton reiterated the notion that crude oil does not belong to the Nigerian state but to him and his community. As I sat down with him and other youths for an interview that day, he described how the refinery functioned and the mode of governance used to manage the oil infrastructure. As Naaton was describing the process, Kenule nodded in agreement while also occasionally reiterating some of the points Naaton made. Three layers of governance can be deciphered

in the management of the oil infrastructure in Bodo creek. These three layers are intertwined and interconnected.

My use of 'governance' is an attempt at problematizing everyday practices that structure relationships and organizations anchored in economic and political choices at state, community and corporate levels in ways that shape the environment and all resources associated with nature (Adunbi 2015; Bonnafous-Boucher 2005; Chalfin 2016; Ferguson 2006). By problematizing everyday practices, I intend to show some of the shape and character of oil resource management and the political choices made in the practice of resource governance that create an alternative system of production within extractive communities. This alternative system of production results in the moulding, construction and reproduction of practices that confront and consolidate knowledge and power by building community relationships as a way to access resources, using local knowledge in building infrastructure aimed at accessing natural resources while at the same time using the resources for one's own benefit and the benefit of the community, and contesting ownership of resources with the state and corporations. This form of contestation produces three layers of governance. The first is associated with those who have stakes in the local oil infrastructure but no presence in the creek. These are the people in the top echelon of the artisanal refining business who are sometimes unknown to the youths who carry out the day-to-day administration of the creek. The operational principle of this category resonates with the principle of indirect rule where the leaders can be heard but not seen (Adunbi 2015; Lugard 1907; Mamdani 1996). I call this category 'the near-invisible governance model'. With 'the near-invisible model', I intend to problematize the concept of invisible governance by suggesting that those governing might not be visible but their actions are visible to those who live by their rules.

The second layer is the direct governance of the creek. This mode of governance is organized around the youths who operate the artisanal refinery business on a day-to-day basis. It is this second category that is at the heart of this article. These youths construct, manage and operate the local oil infrastructure in Bodo and other creeks of the Niger Delta. The layer of authority in this second category is well structured. For example, Naaton, Biebari and others perform surveillance roles, which enable them to take up the role of chief security officers of the creek. They had to welcome me and every visitor sanctioned by their leaders to the creeks at the entrance to the community. There is also the leader of the creek, who is sometimes called the 'chairman' and sometimes the 'godfather', who is accorded a lot of respect. The appropriation of such titles as 'chairman' and 'godfather' illustrates the hierarchical system of operation within the creeks, where the 'chairman' is seen as the symbol of authority. The chairman not only presides over meetings but also, in consultation with his other cabinet members, makes business and administrative decisions for the group. To make the administrative duties of the chairman easy, he has a cabinet with positions such as vice-chairman, general secretary, finance secretary and security secretary. The final layer consists of the community members who cooperate with and support the two previous categories – the invisible layer and the direct governance layer. The cooperation and support of many community

members is anchored in the direct benefits they derive from participating in the management of extraction in the creeks.

Members of the Bodo community participate in the governance of extraction in two ways. First, many serve as local distributors and marketers of refined petroleum products (Naamen and Tolani 2014; Social Action 2014; Ugor 2013). During my visit to Bodo, jerry cans filled with refined oil for sale were displayed in front of houses within the community. Some members would also transport their products to nearby cities for sale. By participating in this way, members of the community make the claim that they are benefiting from oil they 'own'. This also arguably improves the economic conditions of many community members who have been displaced from their livelihood by oil prospecting in the community. The second mode of participation is based on the free kerosene that is distributed for domestic use. This is a form of what Douglas Rogers (2014) calls 'petrobarter', which he describes as 'discourses and practices that feature the exchange of oil for all manner of goods and services without the direct intervention of money' (131). Since many people have young family members who participate in the extraction process, they all become beneficiaries of this free kerosene, a by-product of refined crude oil used mainly for cooking. The price per gallon of kerosene is higher than that of petrol, so distributing it is an important way for youths to firm up support for their operations in the creeks. Household members not only use free kerosene for cooking, but also sometimes sell it in nearby communities as a way of earning cash to support their families. Free kerosene helps build relationships with community members in ways that guarantee loyalty, goodwill and support. In return for the kerosene that is freely distributed, many members of the community provide different kinds of support, such as not providing information about the activities of the youths to the state. As one informant mentioned to me during our interaction, 'Sometimes the state will send their agents here to ask us questions about who is behind the refineries. We will respond with a categorical "no". Why should we give our sons and brothers away when we know they are doing the right thing for the community and us? We will never and can never do that.'⁴

Community members help local operators to conceal construction of artisanal refining infrastructure projects from the prying eyes of the state, since resource infrastructures are the property of the Nigerian state under the Petroleum Act of 1969 and other subsequent laws, such as the Land Use Act of 1973 (Adunbi 2015; Watts 2004). In addition, many agents of the state are complicit in concealing the construction of the refining infrastructures because the operators often pay them off. While the youths had the necessary skills to build and manage these infrastructures, the near-invisible participants mentioned earlier are in most cases the financiers of the projects. The chairman and a few of his cabinet members who are also privy to the presence of the near-invisible participants render returns in terms of profit made from sales to those participants.⁵ Thus, the three layers – those who have direct control of the creeks, those who are not directly present in the creeks, and members of the community – all participate in a relationship that is defined by crude oil and entwined in benefits of its extraction.

Capture as innovation: artisanal refineries, oil infrastructure and the technologies of extraction and production

In the last few decades, innovation has been a mantra of neoliberalism (Ferguson 2010; Ong 2006). Innovation resonates with what Aihwa Ong sees as the attributes of neoliberalism, which are ‘conceptualized not as a fixed set of attributes with predetermined outcomes, but as a logic of governing that migrates and is selectively taken up in diverse political contexts’ (2006: 2). Therefore, what youths in Bodo creeks have been engaging in as drivers of new energy practices is a form of innovation that taps into neoliberal economic practices. Artisanal practices are a form of innovation in the Niger Delta communities because if neoliberalism is about letting loose ‘human ingenuity’, then the building of oil infrastructure using local technologies is an excellent example of how innovation drives human ingenuity in the oil fields of the Delta. While the state and its corporate partners engage in practices that disentangle communities from the benefits of oil wealth, many youths in the Delta, particularly the Bodo communities, have devised ways of deriving benefits from oil fields using local technologies. These technologies include the construction of Cotonou boats and speedboats from wood, makeshift refineries made from corrugated iron sheets, and fabricated pans as well as pipes and drums. Local welders, carpenters and masons are instrumental to the construction of the oil infrastructure. Materials are sourced from within the community and nearby cities such as Port Harcourt. Welders convert metal into pipes that are connected to tanks where oil is refined, and build tanks using corrugated iron sheet and metal. Carpenters construct the boats that are used in transporting drums of crude oil to the refining site. Because of the size of Cotonou boats, which have the capacity to hold between 100 and 600 drums of crude oil, they cannot be used to transport drums of crude to the refining site; therefore, they are stationed at a site where navigation is easier. When crude oil is refined, speedboats are used to transport it in drums back to where the Cotonou boats are located and the Cotonou boats are used to transport the finished product to consumers.⁶ Much of the oil infrastructure, particularly tanks and pipes, is located at the refining sites in the creeks. The design of the refinery is such that two big tanks are stationed close to each other, both tanks connected to pipes.

In Bodo creek, there are approximately four such refining sites within a short distance of each other. One of the tanks functions as the site where the crude oil is deposited, while the other tank serves as a reservoir for the refined product. There are four pipes connected to the tanks; each serves its own function. For example, one pipe processes the crude into gas, another processes crude into diesel, the third processes crude into kerosene, and the last pipe transfers the waste product into a water pond that serves as a cooling tank. The tanks are elevated above a huge fireplace that performs the role of a refining burner. This is where the notion of *kpoofire* originates, as the term refers to the process of throwing crude oil into the tanks where refining takes place. When crude is emptied into the tank, it makes a sound, *kpooi*; hence, the youths christened the refining process ‘*kpoofire*’. When it

is thrown into the fire, the crude is allowed to burn for hours unattended until it becomes a finished product, after which it will be allowed to cool down before it is packaged into drums for transport to the Cotonou boats. Refining takes place at night, and during the process of refining, the creeks appear to be lit up from afar, similar to when a corporation's extraction processes flare gas into the atmosphere. Hence, the youths say that their refining process is similar to those of the oil corporations because at night artisanal refining processes can be seen from a distance, just like the gas-flaring of the corporations.

The question is, how do the youths access crude oil? Crude oil is accessed through perforation of pipelines and wellheads. The youths refer to the process of accessing crude oil as 'tapping'. 'Tapping' denotes the process of perforating existing oil pipelines. Thus, tapping becomes an integral part of crude capture where oil tapped from pipelines or wellheads is used by the youths for refining purposes. Welders are important to this process. Welders help in perforating and in caulking pipes once crude has been tapped. Successful tapping is essential to the management and operation of many of the refineries in Bodo. Many of the welders who helped build tanks and pipes for the refining process were previous contract staff or employees of corporations such as Shell, AGIP Oil or TotalFinaElf. The skills acquired by local welders in helping corporations build and manage pipelines have become important tools used in tapping oil for the artisanal refining process. Crude oil is tapped from the pipelines at night and speedboats are used to transport it to the sites where it is refined into a finished product using kpoofire. As one informant told me,

We usually start our operation around midnight. We know the terrain very well. We have lived all our lives here and some of us had worked for the corporations as welders before, so we know how to open and caulk pipes. The process is easy, we open the pipes with our tools, load the crude into drums and then caulk the pipe back when we are finished.⁷

Tapping is not limited to pipelines alone. As Naaton explained, the youths also 'break into wellheads, installing their own pumps and using hoses to load oil onto barges' (Social Action 2014: 24; Ugor 2013). Pumps and hoses that the youths install are fabricated by welders using local materials. The process of tapping usually starts with surveillance of the area a week before tapping. Surveillance involves sending a few youths to the area to survey the exact location of the pipeline or wellhead to be tapped. Once the location is identified, a night is set aside for the operation. On the day of the operation, the youths travel in speedboats fitted with floodlights, kegs for the crude, caulking wrenches and other equipment. As I was told by many of my interlocutors, the operation usually takes a few hours to accomplish. Sometimes, some of the speedboats make a couple of trips back to the refining sites to deposit the crude oil before ending the night's operation. Tapping requires a minimum of five to ten workers, and there is a division of labour involved. For example, on a night designated for tapping, a minimum of three boats are required – one to carry the necessary equipment, and the other two to carry the workforce. The boats follow each other to the tapping point, and during the operation all boats are on

standby, with their engines kept running. Once the caulk is opened, a hose is passed from the point where crude is tapped onto the boats with the kegs. As soon as a keg is filled, the hose is passed to the next keg until all the kegs are filled. Once all kegs in the three boats are filled, the 'staff' in charge of filling will signal to the two welders to caulk the pipeline or wellhead back. At this point, all three boats return to the site of the refinery where the crude is needed. On some nights, the operation is repeated as many times as possible between midnight and 4 a.m., when all operations cease. The combination of local knowledge of the terrain, locally fabricated equipment for tapping, and the ability of the speedboat drivers to operate at odd hours in difficult terrain makes tapping a significant part of the artisanal refining process. Such operations demonstrate the dexterity and resourcefulness of the youths and their ability to innovate.

Many in Bodo and other Niger Delta communities who participate in the practice of oil refining combine a form of hybrid knowledge of local practices with the knowledge acquired through learning from the corporations to produce a distinct method of extraction and production of oil. The practice can be described as the art of caulking and piping through a process assimilated from corporate practices of extraction combined with local technologies and knowledge of siphoning oil from pipelines and flowstations in the Niger Delta. What becomes clear is the fact that technologies of extraction, innovative as they are, rely heavily on the participation and incorporation of local technological practices that have been with Niger Delta communities for several decades. Such practices include blacksmithing, welding and metal extraction. It is the reuse of old technologies of metal extraction, blacksmithing, that helps to consolidate today's new energy practices. As Kenule told me, 'After fishing and farming, blacksmithing and the work of welders as well as metal extraction are some of the popular modes of earning income in our community. Many see this as a family business, so you are trained from early on in the process of producing it'.⁸ Many informants corroborated Kenule's assertion by reiterating that metal extraction is used in making implements for fishing and other agricultural practices that community members engage in. To many in the community, some of these practices are like family businesses. Of course, such evidence abounds in many communities because many of the households I visited used small-scale fishing and agricultural production for subsistence and as income supplements. Moreover, the shift from these practices to that of crude capture through artisanal refineries also meant a shift in technologies. The new technologies are much more sophisticated than the technologies deployed in the past. Oil production today has taken on a life of its own, and the creeks epitomize not only its sophistication but also a system that encompasses networks of participants, including youths, community members, international networks and local patrons.

Conclusion

Oil and its materiality have been engulfed in different contestations over the last few decades. These contestations have sometimes involved struggles for its control

and the distribution of benefits that accrue from its extraction. While oil has been instrumental in connecting countries rich in such resources to the international capitalist system, its ownership has often generated conflictual politics in the enclaves where the resource is located. No other enclave defines such claim-making politics better than the Niger Delta region of Nigeria. The techniques of extraction deployed in the region to sidestep what locals considered obnoxious extractive practices that deny them the benefits accruing from oil exploration have today been reinvented to create spaces for new energy practices.

More importantly, a parallel can be drawn between extractive practices used by the state and its corporate partners who, through capture, use oil for their own benefit and the ways in which youths in the Delta now use the same logic of capture to engage in artisanal refining practices. Both are (or were) considered illicit. To the state and its corporate partners, what the youths are doing is considered to be illicit and a form of transgression against the Nigerian state. To the youths, the mere 'capturing' of what they consider the property of their communities through tapping and refining cannot be illicit; rather, the state's claim to ownership is to be considered illicit. As Willem Van Schendell and Itty Abraham (2005) remind us, the illicit, that which is socially perceived as unacceptable, can also be historically changeable and contested. While the state sees the extraction of crude oil as an illicit act that must be punished, the youths who have built their livelihoods around it contest the illicitness of their actions by reverting to their own hybrid knowledge that combines the complexity of tapping and caulking with the practice of oil refining and production and that helps in navigating the sophistication of extraction. As one informant said, 'We use our local knowledge base to turn crude oil into refined oil. The state and corporations will say we are stealing oil, but to us, we are merely tapping from what the state has illegally taken from us.'⁹ The sophistication of the crude refining techniques of today emanates from the knowledge base of youths who worked as employees or subcontractors of the oil corporations and from local knowledge of blacksmithing and metal fabrication. These former employees, in alliance with other youths who are skilled in boat construction, combine to provide a space where crude oil is turned into refined oil.

As this article shows, the Niger Delta has a long history of innovation and technologies of extraction and production. Technologies of extraction, in the historical annals of the Delta, have been epitomized by innovation that drives resistance to outsider influence and dictates. It is this innovation that produces the artisanal refineries that litter the landscape of the Niger Delta. More importantly, close analysis of the artisanal refining process refutes any simplistic dismissal of these activities as disorganized or fuelled solely by brigands and bandits. Instead, the politics of crude oil governance in Bodo reveals a solid and complex structure, embedded in local relationships, that allows for an integrated amassing of resources, both technological and cultural, to create a vibrant socio-economic infrastructure.

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Notes

1. Interview conducted in Bodo, Ogoniland on 10 July 2015.
2. This is a paraphrase of some of the interactions I had with some community members in Bodo on the afternoon of 10 July 2015.
3. All names used in this chapter are pseudonyms in order to protect the identities of my interviewees.
4. Interview conducted in Bodo, Ogoniland on 15 July 2015.
5. During the period that I was there, I tried several times to find out the exact profit that they made and how it was distributed, but this information was never shared with me.
6. I use 'consumers' to denote those who purchase the finished products from the youths, and not necessarily those who are the end users of the product. Sometimes, consumers are the middlemen who purchase the products and sell them to their international partners, who often wait for their consignments in the middle of the Atlantic Ocean.
7. Interview conducted in Bodo, Ogoniland on 10 July 2015.
8. Interview conducted in Bodo, Ogoniland on 19 July 2015.
9. Interview conducted in Bodo, Ogoniland on 21 July 2015.

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