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Consistently unreliable: Oil spill data and transparency discourse

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ABSTRACT

Our recent research reveals enormous discrepancies in oil spill data disclosed by regulatory institutions and corporate sources in Nigeria. Federal agencies as well as major international oil corporations publish inconsistent and sometimes contradictory figures, often employing different spatial or regional categorizations. Uncertainties pertaining to data veracity in the Niger Delta, alongside the thin scientific record inflect deeply contentious debates regarding the country’s oil industry. For advocacy organizations, the result is that those seeking to monitor oil spills may spend hours trying to square and cross-reference uneven information, time that could otherwise be spent assessing the scale of impacts and analyzing the complex structural causes surrounding them. Scholarly work in other jurisdictions indicates that the staging of non-transparent, incoherent and/or intentionally misleading data on oil spill risks is not unique to Nigeria, leading to a kind of epistemological vertigo in studying this sector.

1. Introduction

One of the striking characteristics of the oil and gas industry is that its putative high-tech veneer – deep water technologies, sophisticated monitoring and surveillance systems, complex infrastructural networks – coexists with a body of data on its global value chain wildly patchy in its coverage and often unreliable and untrustworthy. Poor and remarkably unreliable data sit uncomfortably with scientific precision and technological complexity (Power, 1994; M. Strathern, 2000; M. Strathern, 2000a). It is well known of course that the International Oil Companies (IOCs) – Exxon in particular (Mulvey et al. 2015; Hall 2015) – have long been in the business of selling doubt and providing what can only be described as fake news; but governments in oil-states are also implicated. In this sense, the world of oil and gas is a textbook case of the agnotology discussed by Proctor (Proctor, 1995; Proctor and Schiebinger, 2008). The reams of data and statistics produced on the oil and gas sector actually present a highly distorted picture of what we do and do not know about the industry’s operations (Barry 2015; Zalik 2015). Sketchy or inconsistent information has been the touchstone of course for the transparency and disclosure movements, particularly around revenue flows and capture.

Any novice endeavoring to come to terms with the industry is thus immediately confronted by what can only be described as a sense of epistemological vertigo: nothing quite seems to add up - booked reserves, the life cycle of reservoirs, the releases of flared gas or the quantities of oil spilled, it all floats in a miasma of ambiguity and untruth. Knowledge production within the industry itself – the process by which data is produced, catalogued, organized and rendered credible or valid – leads the researcher, in short, to be deeply suspicious. What is at stake is a sort of political economy of ignorance or distortion. Nowhere is this clearer than in the numbers and measures surrounding the ecological footprint of the industry, and the safety and security of the infrastructure. An important test case is the data record on oil spill incidents and the attribution of cause.

Despite attentiveness and critique of partial and misleading information related to the oil industry arising from longstanding scholarship on the subject, our recent research in Nigeria has shockingly underlined the problem. We have been confronted with enormous discrepancies in oil spill data disclosed by varied regulatory institutions and corporate sources in that country. Federal agencies as well as major international oil corporations publish inconsistent and sometimes contradictory figures, often employing different spatial or regional categorizations. Uncertainties pertaining to data veracity in the Niger Delta, alongside the thin scientific record, inflect deeply contentious debates regarding the country’s oil industry. For advocacy organizations, the result is that those seeking to monitor oil spills may spend countless hours trying to square and cross-reference uneven information, time that could otherwise be spent assessing the scale of impacts and

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analyzing the complex structural causes surrounding them (Amunwa 2011).

Data inconsistencies concerning oil spills in Nigeria’s Niger Delta are egregious, but the region has no monopoly on unreliable and contra-
dictory data. Research in other jurisdictions - notably Canada -indicates that the staging of non-transparent, incoherent, incommensurable and/or intentionally misleading data on oil spill risks is not unique to Nigeria (Fraser et al., 2008; Kheraj 2014; Gilbert and Zalik 2019; for an analysis of the volumetric data associated with such dynamics see Valdivia, 2015; Kama and Kuchler, 2019; Kama 2020). Indeed, Can-
dian regulatory agencies also employ divergent standards and definitions to assess spill events, thereby offering incommensurable data at the national level. Accordingly, the production of inconsistent and unreliable data points to broader questions of institutional ‘best practice’ in the international oil industry and reveals the incomplete and in-
consistent application of transparency discourse.

2. Overall spill rates and figure inconsistency in the Niger Delta

At present data on oil spills in Nigeria is gathered and organized by a number of different institutions: the Nigerian Oil Spill Data Response Agency (NOSDRA, established in 2006), key international oil companies operating in the Niger Delta - Shell Petroleum Development Company (SPDC) and Nigeria Agip Oil Company (NAOC), statistics published via the Nigerian National Petroleum Corporation (NNPC) and the Department of Petroleum Resources (DPR), as well data included in reports prepared by civil society organizations and foundations. Raw data from the NNPC is difficult to acquire, unless it has been published in scholarly journals or research reports where authors were able to obtain access. The most accessible data is that provided by NOSDRA via its oil spill monitoring site (https://oilspillmonitor.ng/) which provides data on oil and gas spills from 2006 to the present. On its face, the very existence of this data in the public domain (the raw data can be ana-
ysed by any researcher) is worthy of many accolades. But most notable upon a review of a review of the information is the poor quality of the official and publicly available data, and the substantial discrepancies that exist between different sources (for example between company data on spills the NOSDRA data and other Nigerian official such as the Department of Petroleum Resources (DPR) and the NNPC. Discrepancies of the order of 15-20% emerge in even a cursory com-
parison of NOSDRA and SPDC reportage of spill events.1

According to the NOSDRA oil spill monitor website, the national picture of oil spills (2006- March 2020) is a total of 13,091 spill events and a total release of 692,761 barrels. Of these events, 71.5% of the incidents pertained to crude oil accounting for 95.7% of total spill contaminants. The spatial distribution of spill events and spill volumes vary sharply across states (Rivers State alone accounts for just under 30% of all spill incidents - followed by Bayelsa and Delta - and 32.3% of the total quantity spilled). About 86% of oil spill incidents (76.64% of total oil spilled) in Nigeria over the period 2006-2011 present are linked to oil installations owned by five IOCs (AGIP, Shell, Mobil, Total and Chevron).2 Two of forty seven private and public companies operating across the Delta - NAOC (Agip) and SPDC (Shell) account for approximately 75% of spill incidents. For the period 2006- March 2020, Agip accounts for 5797 spills and 172,997 barrels (30 barrels per spill) while SPDC has 3421 spills and a total spill release of 306,708 (90 barrels per spill).3

Yet publicly available data from the Nigerian National Petroleum Corporation contrasts markedly with this statistical picture. Data on pipeline malfunction (‘vandalizations’ and ‘ruptures’) is provided by NNPC in its Annual Statistical Bulletin but these are aggregate figures for the whole of the country (though the vast majority occur in the Niger delta).4 NNPC pipeline loss data (for the five regions of the country) documents over 35,000 incidents since 2005 which amount to a quantity of oil lost almost 40 times larger than the total spill volume for the Niger delta on its oil monitoring site! Of these 488 are due to “equipment failure” (roughly 1.3%). The volume of ‘petroleum prod-
ucts’ lost over that period was 4737,046 t (33.7 million barrels).5 Data on ‘crude oil losses’ - only available for a five-year (2013–2018) - amounted to 4946,150 barrels, a figure more than 7 times higher than that reported by NOSDRA for 2006 to the present (641,239). Similarly a study comparing monthly oil spill data from NOSDRA with annual data from NNPC discovered – to take one example among many – a discrep-
cancy in the year 2006 of between 300 and 3000 in the number of annual spills (Yeeles and Akporiaye, 2016).

While we do not have access to either NOSDRA or NNPC data prior to 2006, published research cites the Department of Petroleum Resources as estimating that 1.89 million barrels of petroleum were spilled in the Niger Delta between 1976 and 1996 out of a total of 2.4 million barrels of contaminant in 4835 incidents (Daminabo and Frank, 2015). Department of Petroleum Resources data cited in Ejiba, Onya and Adams (2016) for the years 2010–2014 offers total numbers of spills with a discrepancy to the NOSDRA database of over 60% an-
nually. While the NNPC figures referenced above are much higher than NOSDRA’s, the DPR figures cited by Ejiba, Onya and Adams (2016) are considerably lower than NOSDRA’s. NOSDRA records a total-barrels spilled figure greater than double the DPR figures cited therein (ibid). The UNDP Niger Delta Human Development Report published in 2006 indicates that “available records show a total of 6817 oil spills between 1976 and 2001, a loss of approximately three million barrels of oil” of which more than 70% was not recovered (UNDP 2006, p76). Two-thirds of these spills (69%) occurred off-shore, a figure which seems implausible.

Another widely cited source is a 2011 study published by the Woodrow Wilson Center. This estimates 546 million gallons were spilled in Nigeria between 1958–2010, at an average of 10.8 million gallons spilled annually from approximately 300 spills (Francis et al., 2011, p. 11).6 Given the ratio 42 gallons per barrel, this is a figure of approximately 257,142 barrels per year or more than 13,370,000 bar-
rels over 52 years.

It is inevitable that there will always be some sort of discrepancy when differing agencies and institutions have responsibility for the organization of data of a common topic, but the scale of discrepancies in the Nigerian case are bewildering. Among other things this points to the fact that after seven decades of pumping oil and a record of massive despoliation of the environment – the Niger Delta is often described as the most polluted place on the planet – the scale of the enormity of the problem remains the subject of debate.

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1 Similarly, there are significant discrepancies over gas flaring venting
quantiites according to NNPC, company and NOAA (satellite estimations). For example, estimations of emissions (in millions of standard cubic feet Mscf) in 2018 by NNPC (derived from financial reports) and by VIIRS satellite data differed by over 150% (see the World Bank Gas Flaring Reduction Partnership (GGFR) [https://www.worldbank.org/en/programs/gasflaringreduction], and https://www.dw.com/en/gas-flaring-continues-scorching-niger-delta/a-46088235.
2 The other entities involved are the Pipelines and Products Marketing Company, and the National Development Petroleum Company.
3 Based on data presented on the NOSDRA Oil Spill Monitor site at https:// www.nosdra.oilspillmonitor.ng/oilspillmonitor.html
4 NNPC Annual Statistical Bulletins are available at https://www.nnpcgroup. com/NNPCDocuments/forms/Allitems.aspx
5 Petroleum production loss statistics are derived from NNPC annual statis-
tical bulletins. Over the period 1999-2004 (following the return to civilian rule) pipeline product losses amounted to an astonishing 1,854,000 metric tons (13.2 million barrels) from 4426 events, of which 85% were in the Warri and Port Harcourt zones; 5.2% were attributed to ‘rupture’ (and 94.8 to ‘vandalization’).
6 https://www.wilsoncenter.org/sites/default/files/AFR_110929_Niger %20Delta_0113.pdf on p 11.
3. Operator and state spill data and reporting processes

IOC data generally records lower spill volumes than NOSDRA. Nevertheless, some of their data includes spills we could not locate on the NODSRA site. For instance, in the SPDC database we conducted a search on the term ‘Oporoma’, the municipal capital of Southern Ijaw Local Government Area where the Shell Nun River flow station in Bayelsa State is located. The SPDC spill database provided 19 records for the 2013–2019 period. Among the SPDC recorded spills in this area, one attributed to operational failure specified the following information in November 2019: “Reported Date 2018–07–12; Amount Spilled 180; Spill Cause - Operational; Spill Location 16” Nun River - Kolo Creek Pipeline at Oporoma; Terrain Type -Land: Clean up Status -Spill was contained on 13 Jul 2018, recovery completed on 14 Oct 2018, assessment completed on 09 Apr 2019, clean-up and remediation completed on 20 Sep 2019, site certification planned to be completed on December 2019”. As of April 2020, the record had been changed indicating ‘recovery completed’ 1 March 2019, assessment completed on 09 April 2019 with site certification “planned to be completed May 2020”. Although a JIV survey and report file are named and visible on the SPDC cite, a cross reference on the NOSDRA site turns up no recorded spill equivalent to this event. We reference this as a relatively large spill caused by operational failure in a riverine zone where spills are frequently categorized as sabotage. Additionally, the SPDC spill record indicates the terrain as land when in fact Oporoma is located in the creeks, and thus should be categorized as ‘swamp’ – a factor of importance given the difficulty of measuring spill spread in riverine areas. Such problems in informal spill reporting processes have been documented at some length by the organization Accufacts in their analysis for a 2013 Amnesty International report discussed in the next section.

4. Spill causation and interpretation of the data

The data entered in the NOSDRA database is the product of oil industry analysis and the ‘Joint Investigation Visit’ - a formal process requiring site visits by the company, in conjunction with state regulators and community representatives. The JIV process has been contested for years as subject to undue influence by the firm which finances the visit, in part because the firm covers expenses and provides per diems to those who participate. State representatives, in particular, whose salaries are limited and frequently irregular due to blockages in payment from state coffers, are viewed as easily subject to firm pressure. Participation in JIV processes may indeed involve a significant supplement to their income; our ongoing research and NGO reporting document various cases where state or community representatives indicate that JIVs were not approved yet filed, that non-representative community members were paid to sign, and that per diems or expense payments have been withheld - or were threatened to be withheld - due to non-compliance (Amnesty 2011, 2013; NACGOND 2014; SDN 2015; 2016; Rim-Rukeh 2015).

In addition to the JIV form, the Federal oil spill reporting process in Nigeria requires oil firms to submit to NOSDRA three other forms:
- There is an oil spill notification report (Form A) to be submitted within 24 h of spill which records the date of spill, its observation, location and containment, the site impacted and extent of impact. Subsequently a ‘risk based assessment’ (Form B) is to be submitted by the oil company whose facilities are affected within two weeks of a spill; this includes clarifying information on the cause, method of containment, weather conditions at time of observation and some further details on the spill extent, impacts and proposed clean-up. The oil firm staff responsible is to further detail this in a description of oil spill clean-up/remediation (Form C), due within an unspecified time frame which is to include additional environmental impact and clean up information, compensation to affected residents, remediation details, results of lab tests, overall cost of the spill and a rehabilitation plan. The JIV form itself includes various pieces of information that overlap with the above forms, recording observations at the site of the oil spill, communities affected and the extent of spill, and terrain, around these communities. The form includes check-boxes and multiple choice questions that cover visual observations of the area and circumstances around the spill point including the so-called ‘o’clock’ position of an observed hole in a pipe, where a hole at the bottom of the pipe (referred to as ’6 o’clock’) may be deemed corrosion whereas spills in any other location on the pipe, notably the top ( ‘12 o’clock’) are typically deemed sabotage (Amnesty 2013, p 21). As well will see, the use of o’clock position to assess cause has been critiqued in NGO analyses of the JIV and spill reporting processes. The JIV form also includes checkboxes to indicate the kind of properties affected (eg. farmland, fishing pond or net, surface water and venerable impacts), the nature of the impacts (eg. stained net, dead fish or vegetation) and the delineation of the impacted area (within or external to a company's facilities or Right of Way and whether samples were taken. It concludes with a page signed by parties present at the JIV, confirming attendance of the parties and agreement on the recorded information.

Agreement among the parties has been a key source of controversy. A number of actors are legally involved in the production of the JIV: the company, community representatives, and state regulatory agencies. The entire process is, in theory, subject to a set of legal norms to ensure that the response system (the JIV) is reliable ( speedy data collection and recording methods and management), accurate (measurement and assessment of damage and environmental impact), viable (establishment of a baseline record for future referencing), and accountable (perceived integrity of the data recorded). In all four respects it has been widely documented (see for example Amnesty 2015, 2018; SDN 2015; NACGOND 2014; Rim-Rukeh 2015) that the oil spillage response system –on the part of both companies and regulatory agencies – is deeply flawed, in some cases corrupt, and - as currently implemented - incapable of providing a reliable, accurate (and transparent) assessment of oil spills quantities, spatial distribution and dispersion, causality and clean-up. To the degree that the response data are questionable, the estimates on compensation, costs and requirements for clean-up and ecosystem rehabilitation are also necessarily in doubt.

A widely publicized Amnesty International (2013) report examines the problematic nature of the data produced via the Joint Investigation Visit (JIV) process. There is a strong incentive for the operating firm to attribute cause to sabotage rather than operational failure. The same applies to the Nigerian state given the joint venture arrangement through which the NNPC is majority shareholder. The participation of state regulatory institutions representatives at these investigations is financed by the operating firm. Operators may withhold per diems or offer kickbacks each of which influence the real and perceived objectivity of these representatives. There are also significant financial and structural factors likely to produce under-estimates of spill volumes. Among these, the volume of the spill drives estimates for compensation, yet companies – with a clear conflict of interest in the results- essentially control the estimates. The 2013 Amnesty report notes various irregularities in presented data. These include major discrepancies between publicly posted SPDC data and the data indicating spills attributed to SPDC on the NOSDRA website, and the data reported by Shell's Nigerian subsidiary SPDC versus Royal Dutch Shell internationally in the period 2007–2012. As we discussed above, a review of the information posted by Shell and NOSDRA since 2013 reveals that this...
discrepancy has continued. SPDCs data indicates a lower number of spills to those reported by NOSDRA. Yet, despite the lower number, SPDCs data includes spills that are not searchable in the NOSDRA database.

The 2013 Amnesty report further reviewed a 1995 Shell Environment Brief which offered a very different picture of the cause of spills than those reported today. “Historical data on oil spills by company are not available, except for Shell. Between 1989 and 1994 the company reported an average of 221 spills per year. According to Shell, during this time period 50 percent of the oil spilt by volume was due to corrosion, 21 percent due to operational problems and 28 percent due to sabotage.” (Amnesty 2013, p. 11). Through reanalysis of various JIV reports by Accufacts, Amnesty documents political-economic bias in the JIV and NOSDRA data we refer to above. Accufacts’ survey revealed serious problems in the technical basis of spill assessment, including the use of rough measurements to assess affected surface area. Accufacts reviewed various JIV photos available on the NOSDRA website which had been deemed sabotage in the JIV process, yet which their analysis assessed as the result of corrosion or welding failure. In particular, Accufacts critiques as inaccurate and unscientific the use of both 1) ultrasonic thickness measurement (UT) and 2) the use of the position of a leak on the pipe - the so-called ‘o’clock’ position described above - to deem cause of spill as sabotage, and in fact rejected by the French firm Total (Amnesty 2013, p. 25).

The JIV reports do not provide sufficient information to verify or properly support the indicated determination of cause. Preconceptions (such as evidence of loose soil at the release site, location of the pipe failure site - top of pipe is corrosion, hole appearance) introduce prejudiced and highly probable false conclusions as to the real cause of the pipe's failure. Based on an Accufacts review of photographic evidence of some of the claimed Niger Delta pipeline failures, cause determinations based on the information entered on current JIV reports can be very subjective, misleading, and downright false (Amnesty 2013, p. 27).

Additional technical problems arise in the assessment of spill volume. The assessments made in the field, and the data on flow which firms state they use to assess spill volume are inconsistent, in part because JIV teams arrive late to spills and are insufficiently resourced. Accufacts indicates that these assessments should be understood only as approximations and are likely to underestimate flow. Among the limitations spills which have moved downstream by the time the JIV occurs are not accounted for, and that density is poorly measured (ibid, fn 82 p 75–76). Insofar as many spills are in or close to water sources – creeks, rivers, swamps, oceans – cumulatively these flows under-estimates are substantial.

Based on an Accufacts example, Amnesty documented a particularly egregious example from the Bodo, Ogoni area of Rivers state that garnered international coverage. Initially, the JIV process assessed a leak in Bodo spilling 1650 barrels of oil which led to just £4000 of compensation. When the case was taken to the UK courts, the compensation award was increased to £55 mn, with Amnesty estimating that the actual volume spilled was around 100,000 barrels - 60 times greater than assessed by the JIV process. According to Shell, the spill amounted to a total of 1640 barrels of oil but Accufacts “found that between one and three barrels of oil were leaking per minute – this amounted to between 1440 and 4320 barrels of oil flooding the Bodo area each day” (Amnesty 2013, p. 29).

Despite these significant problems with the data, certain patterns within it are revealing. It is notable that NOSDRA’s own data indicates that the largest individual spills in the central Niger Delta state of Bayelsa are caused not by sabotage, but by operational failure, maintenance error or pipeline corrosion. Squaring with this, prior to the establishment of NOSDRA the above referenced 1995 Shell Environment Brief recorded that between 1989-1994, 71% of oil spilt by volume was due to corrosion and operational problems whereas only 28 percent was due to sabotage (ibid, p 11). Whanda et al. also demonstrate the considerable proportion of spills attributable to corrosion and production error from 1989 - 2004 based on Department of Petroleum Resources data predating NOSDRA’s establishment (Whanda et al., 2016). But this causation attribution changes markedly in the subsequent data sets (Obida et al., 2018). Given the difficulty in attribution of so-called ‘mystery leaks’ - oil spills for which the source is not identified- and the structural motivation by the firm to characterize as many spills as possible to sabotage, this figure is notable. As the overall attribution to sabotage is itself suspect for the reasons discussed above, there is a significant likelihood that a considerably greater volume of oil spilled may result from direct operator error than NOSDRA data suggests.

Ultimately much of the contention surrounding who and what is responsible for pollution in Nigeria’s oilfields arises from an uneven and ambiguous scientific and statistical record, some of which may result from direct obfuscation. Serious discrepancies exist between sources. The assignation of cause to those oil spills documented in the publicly available data is especially contentious. Until the 2011 UNEP study on the Ogoni region (UNEP 2011), precious little high-quality environmental data existed, and the reliability of, and confidence in, oil spill data decreases as any investigation pushes further back in history. Data pertaining to the 1960s and 1970s and even into the 1980s for example is scanty, yet it is known that there were massive spills during the first decades of oil production (Anejionu et al., 2015, 2). Among these, massive spills in 1979 (at Forcados) and 1980 (the Funwi offshore well #5) each exceeded by most estimates 400,000 barrels, yet there has been no full accounting of either (Kadafa, 2012; Kostianoy et al., 2014). 11

5. Epistemological vertigo: oil spills data and consistent unreliability

The trade-off between global Northern development and Southern impoverishment have been a central direction of critical anti-colonial scholarship for much of the past century (Rodney 1972; Okonta and Douglas 2001). The implications of extensive global environmental injustice prompt the reassessment of sustainability measurement on a transnational scale (Veraart et al., 2020) and have been the pivot of
much scholarship on extractivism and global markets. While Nigerian researchers have conducted important studies examining the health and ecological impacts of the oil and gas industry for some time (Ordinioha and Brisibe 2013; Chimerenka et al., 2018), in some cases structural factors lead to publication in journals that Western science does not view as thoroughly vetted. Further independent research is required, necessitating proper funding and commitment by national and international organizations. Recent studies have confirmed the appalling impacts of oil spills on human health in the Niger Delta, as per 

and international organizations. Recent studies have confirmed the appalling impacts of oil spills on human health in the Niger Delta, as per (Bruderle and Hodler 2019). The ‘epistemological vertigo’ that arises from reviewing inconsistent data points to the need for rigorous ongoing toxicological and health research as an essential component of assessing and remediating the long-term impacts of egregious oil pollution in the Niger Delta.12

As we outline herein, the discrepancies in available data on oil spills in Nigeria’s Niger Delta are astonishing, a challenge for regulators, advocacy organizations and scholars alike. Yet as Nwadishi and Nnimmo Bassey point out in this issue, environmental data is a clear gap in the material generated via formal Nigerian Extractive Industries Transparency Initiative audits, even in Nigeria which stands out as a site where civil society pressure has led to significant disclosures through domestic EITI legislation. Of course in its original design EITI was not intended to be a tool for the exploration and determination of the costs of operations on the ground on the oilfields (Van Alistine (2017; Hauffler 2010). As growing numbers and volumes of oil spills have been attributed to sabotage, however, upon which basis the oil industry withholds compensation, the question of pollution is increasingly central to the issues of financial transparency and revenue allocation in the Niger Delta. Decades of pollution and its impact on local agrarian production, arguably, have created the conditions in which tapping of pipelines is one of the few sources of reliable income available to many local youth - which complicates the question of ‘cause’ even in the case of clear sabotage. Understanding and quantifying historical and ongoing pollution is thus central to assessing livelihood options available to Niger Delta residents.

Additionally, the recent divestment by various oil majors - notably Shell - of their onshore assets makes proper assessment of historical oil spill damage imperative to ensure that responsibility for clean up, compensation, and proper decommissioning is assumed by those firms.

The data problem can only be grasped by unpacking the means through which knowledge is produced and organized and the powerful interests involved in shaping the nature of spill data and the attribution of cause (and liability). Such flaws in data on oil pollution are not unique to the Nigerian context. Research on the Canadian context, including by the Canadian Broadcasting Corporation, has revealed inconsistent and misleading spill reporting (Pereira 2013; Winter 2014; Kheraj, 2014; Gilbert and Zalik 2019). There is no single definition of a pipeline ‘spill incident’ under Canadian law, which leads to confused regulation and reporting across crown land – under both provincial and federal jurisdiction. We note in our research on the oil industry in Nigeria and elsewhere that the time commitment involved in reviewing such inconsistent data diverts attention from the broader question of accountability for socio-ecological deterioration. The absence of full-cost accounting for environmental harm allows extensive capital accumulation for corporations and shareholders (Franks et al., 2014), while impoverishing those who reside next to sites of oil production.

We agree with critics who underline that environmental valuation cannot on its own bring about the structural changes required for the systems associated with the oil and gas sector to confront ecological and climatic consequences of hydrocarbon extraction and use (Lohmann 2009) – whether in Nigeria or internationally. Nevertheless, consistent and reliable data on oil spill quantity would allow for a financial estimate of the net present value of surface pollution caused by decades of oil spills; this would likely emphasize the massive compensation owed to residents of the Niger Delta. As we complete this article in the context of the Covid 19 pandemic, the mutual constitution of socio-ecological deterioration and world trade flows has perhaps never been more evident. Refashioning the broader political economy in the aftermath of this global lockdown demands we produce a more complete understanding of transnational extraction and exchange, and design systems that internalize and account for the socio-ecological damage arising from global industry, commodity production and provisioning.

Declaration of Competing interest

Some of the research undertaken for this article was conducted by the authors as members of the Expert Working Group of the Bayelsa State Oil and Environmental Commission. The views expressed in the article are solely those of the authors and do not in any way reflect the opinions of the Expert Working Group or the Commission.

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