Africa Development, Vol. XXIII, No. 2, 1998

Building Regulatory Institutions in the Environmental Sector in the Third World: The Petroleum Inspectorate in Nigeria (1977-87)

Eboe Hutchful *

Résumé: On assiste, ces dernières années, à une résurgence d'agitations et parfois à de violents affrontements entre les populations du sud-est du Nigeria, d'une part, et les multinationales pétrolières et l'Etat, de l'autre, à propos de la grave dégradation de l'environnement du fait des activités industrielles pétrolières de ces firmes. Au regard de l'importance de ce secteur dans le pays, la dégradation flagrante et continue de l'environnement soulève au niveau de ces populations des questions quant à l'existence de mécanismes régulateurs en matière d'environnement, qui prennent en charge le secteur pétrolier au Nigeria. Pour l'auteur, ces mécanismes existent depuis des décennies, mais des considérations d'ordre politique et autres facteurs ont fini par entravé sérieusement le fonctionnement de ces institutions mises en place pour contrôler les dégâts émanant du secteur pétrolier. Le présent article examine les expériences du contrôle réglementaire au Nigeria dans les années 1980, en s'attardant autant sur le secteur pétrolier le plus réglementé en matière d'environnement au Nigeria, que sur le rôle pionnier d'une institution étatique: The Petroleum Inspectorate, en vue de trouver des indices quant aux raisons de l'échec patent en matière de réglementation environnementale, en particulier dans le secteur pétrolier.

Introduction

In mid-1994 the Nigerian government invited the seven oil companies operating in the country to a meeting to discuss their environmental management practices. As a result of complaints received from communities in the oil-producing areas, the Federal Environmental Protection Agency (FEPA) ordered the oil companies to submit baseline studies and environmental impact assessments for their respective areas of operation, data on oil spills, and spill response and remedial

* Wayne State University, Detroit, Michigan.

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programmes, and other data relating to their environmental protection programmes.[1] Over the past four years, there has been a resurgence of the complaints about environmental pollution in the oil-producing areas of south-eastern Nigeria. In particular, there has been well-publicised evidence of human rights abuses and government brutality against communities protesting environmental pollution in the Ogoni area.[2] To anyone familiar with environmental politics in Nigeria, these accounts sound all-too-reminiscent of the earlier cycle of environmental degradation, protest and repression that occurred in the 1970s and 1980s in the oil-producing areas in Nigeria. At the time however, these events had led to well-publicised efforts throughout the 1980s to regulate the environmental effects first of the oil industry, and subsequently of other industrial sectors. What happened then to lead to a resurgence of these environmental conflicts, and to necessitate the retracing by the FEPA of the footsteps of its predecessors? In this paper we wish to review the experiences of regulatory control in Nigeria in the 1980s, focusing on the oil sector (the most highly regulated sector as far as the environment was concerned in Nigeria) and the pioneering role of the Petroleum Inspectorate, in order to provide some clues as to why environmental regulation has apparently been such a failure, at least in the oil sector.

The Petroleum Inspectorate came into being in April 1977 as a result of Decree 33. It ceased to exist as a semi-autonomous agency in March 1988 when it was excised from the NNPC – which continued as an entirely commercial oil company with no regulatory functions – and absorbed into the civil service as the Department of Petroleum Affairs in the Ministry of Petroleum Affairs. Its regulatory functions in the environmental area were taken over (in theory) by the new Federal Environmental Protection Agency (FEPA) in 1989, although the former Inspectorate continues to monitor the environmental performance of the oil sector. In its period of existence, the Petroleum Inspectorate faced many of the political, legal as well as technical difficulties that we have

[1] *West Africa*, 20-26 June 1994.p. 1102.

[2] This has been the subject of a Human Rights Watch investigation. For an account of the report, see *New York Times*, March 28, 1995, and Ken Wiwa, son of the leader of the Ogoni environmental movement, Ken Saro Wiwa, then on trial allegedly for murder, in the *Toronto Star*, April 12, 1995. He was hanged on November 11, 1995.

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come to associate with regulatory institutions in the Third World, particularly those attempting to regulate critical resource sectors and\or powerful multinationals (Pearson 1987; Akuffo 1979; Leonard 1985; Thompson 1977, 1985; Morrell and Poznansky 1987; Clarke 1991; Mayade). First, the extensive involvement of the state in the productive sector of the economy meant lack of distance between regulatory agencies and the regulated sectors. Second, the criticality of natural resource industries (many with a record of pollution) in particular poses difficult problems of conflict between the revenue base of the state (and questions of development in general) and the protection of the environment. Large multinational corporations, which tend to predominate in such sectors, are powerful, complex and inherently difficult to control, particularly when their tentacles are intertwined with those of the state. There was a lack of indigenous scientific data on which to base local standards – a problem exacerbated by under-developed scientific infrastructure. Most of the existing scientific data had been developed in Northern temperatures rather than in southern tropical or semi-tropical environments. This means, either delays while the local data base is developed, or (as is more likely) reliance at least in the short term, on foreign data of doubtful local relevance. While powerful interests – including the state bureaucracy and other elites – benefit from degradative activity, in the resource sector the interests negatively affected by such activity tend to be politically marginal. Third World legal systems typically lack the ingredients necessary (such as disclosure requirements, product and other forms of liability such as the power to sue to force accountability from bureaucrats and corporations, and so on) to empower civil society and public interest groups to intervene in the regulatory process. In addition to these general considerations, the Inspectorate faced a number of specific constraints, in part organisational springing from its character of a multifunction agency, as a subsidiary of a national oil company (over which it was supposed to exercise regulatory powers) and frequent reorganisations, and in part from the peculiar character of the Nigerian environment.

Surprisingly, given the unflattering picture that emerges from the study, the researcher found that not only were Inspectorate personnel well aware of these shortcomings, but they were also the most vocal critics of the agency (in private), again an outcome that should surprise

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no one aware of the tension that frequently exists in Nigeria between public organisations and their bureaucratic staff.

Institutional Background

The beginnings of the regulatory machinery in the oil sector may be traced to the establishment (in 1960) of the Petroleum Division of the Ministry of Mines and Power, headed by a chief petroleum engineer with provision for a total strength of fourteen senior and junior staff. Of this establishment, however, only 9 were at post in 1965 with 5 positions unfilled. In structure, the Division consisted of a Field Operations section, a Reservoir Section and a field office in Port Harcourt, each under a Petroleum Engineer reporting to the Senior Petroleum Engineer in Lagos, who in turn reported to the Chief Petroleum Engineer. The Division had difficulty in attracting and retaining staff, particularly at the junior technical level. Office space was an even more difficult problem, with the headquarters accommodation in Lagos being 'hopelessly inadequate' (1964-65). The field office in Port Harcourt was considered not much better, while a second field office in Warri had yet to be set up because no money had yet been made available. It was not until January 1967 that the Warri office was opened in temporary quarters in the Inland Waterways Department. The total division budget of L18,649 for that year went almost entirely on staff emoluments (which claimed L16,255). In March 1967, the Division was reorganised with the addition of a Refining and Marketing Section and an Administrative Section. The old Field Operations section was now renamed the Field Development Section with an Operations Branch and a Field Offices Branch (incorporating the two field offices in Port Harcourt and Warri), while the Reservoir Section was upgraded to a Reservoir Engineering Section with four sub-branches (Reservoir Studies, Petroleum Geology, Production Records and Special Studies). By March 1969, the total establishment of the Petroleum Division had grown to ninety-four, but twenty-eight of the designated positions remained vacant. In that year, the approved budget of L53,220 was actually underspent by almost L20,000.

The Civil War (1967-70) effectively stalled further development. After the War, the Petroleum Division was upgraded in 1970 and

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renamed the Department of Petroleum Resources in the Federal Ministry of Mines and Power. In 1971, there was a major reorganisation of the oil bureaucracy. The Nigerian National Oil Corporation was created by decree to watch over the state's oil interests and at the same time act as the public sector exploration and production arm. The Ministry of Mines and Power was abolished and replaced by a Ministry of Petroleum Resources with a Department of Petroleum Resources exercising the powers previously wielded by the department of the same name. To reflect the much greater importance of the Department, there was substantial expansion in the approved establishment to 399 to allow much more effective monitoring of Nigeria's oil interests. However by the end of the year, only 181 of the established posts were occupied; of the approved budget of L245,070 only L130,760 was actually spent.

These administrative changes reflected, in turn, significant changes in the oil regime in Nigeria. Until 1971 the industry was entirely private and foreign in ownership. Government participation was limited to a partial interest in the refining sector in its contribution to the capital cost of L10.6 million in the refinery at Alese Eleme in Port Harcourt, which went into production in September 1965. Under this joint venture the marketing companies (which were foreign-owned) purchased crude from the oil producing companies (also foreign-owned) for processing at the refinery for a fee. This servicing arrangement gave the Government little influence over either the producing and marketing companies, or over oil markets and intelligence. How shut out of the industry the Nigerian authorities were, could be gathered from the following complaint in the Second National Development Plan (1970-74):

> The activities of the oil prospecting and producing companies are ... so shrouded in secrecy that the discussion of this important sector has always been in terms of generalities.

The result was that:

> Any meaningful Government policy regarding the petroleum industry has ... not been possible beyond broad guidelines with respect to (i) production, distribution and pricing of crude and refined petroleum products, (ii) government revenues form the industry and (iii) recruitment of Nigerians into the industry ...
>
> Production, distribution and pricing of crude petroleum and gas (as a by-product) are decided basically by only a few of the nine-foreign-owned companies in the industry (Second National Development, p.162).

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The Plan argued that it was 'mandatory' for the Government to involve itself directly in the industry, citing 'national security, national investment decisions and managerial opportunities' for Nigerians among its reasons. In April 1971 the Nigerian government, following OPEC directives, took a one-third interest in the Nigerian Agip Oil Company (NAOC) and a slightly higher interest (35 per cent) in Elf. In the same month, the Nigerian National Oil Corporation (NNOC) was established through Decree No. 18 to engage in oil prospecting, mining, and marketing on behalf of the state. In 1973 equity participation (at 35 per cent) was broadened to include Shell-BP, Gulf and Mobil; the state's interest was subsequently increased to sixty per cent (80 per cent in the case of the Shell Petroleum Development Company when the shares of British Petroleum in Shell-BP were nationalised in 1978).

In 1977 there was another major reorganisation of the oil bureaucracy. The NNPC Decree of 1977 (Decree 33) abolished both the NNOC and the Ministry of Petroleum Resources and replaced them with the Nigerian National Petroleum Corporation (NNPC). The same decree established the Petroleum Inspectorate to take over the functions previously exercised by the Ministry of Petroleum Resources. In the Decree, the Petroleum Inspectorate was seen as an 'integral part' of the NNPC and at the same time as an 'independent department' within the NNPC – which, it must be noted, was a producing company in its own right. However, some basis for the independence of the Inspectorate was laid by making the Head of the Inspectorate directly responsible to the Commissioner for Petroleum Resources. The new Inspectorate had a total establishment of 165, of which 105 posts were occupied and 60 vacant. By the end of 1980, the approved establishment had risen to 309, of which 107 remained to be filled.

As with the previous regulatory machinery, the enforcement of environmental safety appeared to have been a minor and incidental aspect of the work of the Petroleum Inspectorate as initially defined. Under the Decree, the Inspectorate was charged specifically with (a) the issue of licences and permits and (b) enforcement of the Oil Pipelines Act, the Petroleum Decree and relevant regulations made thereunder, as well as the exercise of the regulatory functions of the Director of Petroleum Resources, but no direct reference was made to the prevention

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and control of environmental pollution. Hence, when the Inspectorate began to organise itself in 1979 to strengthen environmental regulations, it found its legal underpinnings in this area shaky. The Director of the Environmental Department of the Federal Ministry of Housing and the Environment, Mr Ojikutu, went so far as to assert that the Inspectorate had 'no legal power on oil pollution among its activities' (1979:210). And indeed as if to indicate the lack of emphasis on environmental issues at this stage, the Pollution Control Unit was initially the only one organ of the Inspectorate for which no specific guidelines existed in the *Manual of Procedure Guides*, the operating manual issued by the Inspectorate to its staff. This was not the only area of confusion: while the regulations pertaining to oil exploration and production activities and to pollution *on land* at least, specified a monitoring authority (though not the extent of powers of this authority); in the case of marine pollution, the *Oil in Navigable Waters Act* and other legislation did not even establish a regulatory machinery. Instead, scattered references were made in such legislation to several organisations, chief among them, the Nigerian Police and Federal Fire Service. In the absence of a properly equipped marine police, Coast Guard or Navy,[3] these references were largely meaningless.

An amendment to the NNPC Act in August 1981 partly resolved this legal hiatus, empowering the NNPC (in other words, the Petroleum Inspectorate) to monitor promptly all spills and cases of oil pollution and report to the Minister. In conformity with this, all operators are required to report all cases of spill and unplanned discharges to the Inspectorate within a set time limit and in accordance with a standard format. The Act also authorised the NNPC, its related subsidiaries and other oil companies to participate in prompt and effective recovery spills on land, swamp and continental shelf. Nevertheless, this still left unclear what power of sanctions, if any, the Inspectorate enjoyed vis-à-vis the oil companies. The responsibility for control over pollution was not limited to the NNPC and oil companies. Act 87 of September 1979 also charged the Niger Delta Basin Development Authority with 'the control of

[3] Nigeria has had a navy since the 1960s, although no reference was made to it in the legislation referred to here. The frequency with which local and foreign ships dispose of ballast in Nigerian waters suggest that they have little to fear from marine enforcement.

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pollution in rivers, lakes, lagoons and creeks in the Authority's area in accordance with nationally laid-down standards'.

The Petroleum Inspectorate consisted initially of six departments: Marketing (supervision and control of petroleum marketing companies); Processing (supervision of refineries and when these become operational – gas and petrochemical plants); Planning and Management (administrative, accounting, personnel matters, transportation, etc.); Economic (economic analysis and forecasting); Conservation (technical appraisal and approval of applications for oil and gas drilling, completion and production; routine inventory of reserves) and Field Operations. Field Operations Department in turn consisted of four units: the Statutory Control Unit (responsible for ensuring that oil companies complied with existing regulations); the operations and Licensing Unit (which undertook the issuing of various licences and the review of oil companies' proposals to construct production installations; the Revenue Unit (responsible for the collection of statutory payments); and the Pollution Control Unit. The function of this last Unit was to 'monitor the environmental sanitation standards of oil companies in their operations'. The Field Operations Department was represented by the two field offices in Port Harcourt (Eastern Zone) and Warri (Western Zone).

The Pollution Control Unit commenced with a small approved establishment of 9, but the actual establishment in place was twelve (consisting of a chief and deputy chief environmental officer, one senior environmental officer and ten environmental officers). This Unit was subsequently renamed the Environmental Affairs Unit and later still as the Technical Services Division, and was headed from the beginning by Jerry Nwankwo. Its functions were complemented at the federal level by those of the Federal Ministry of Housing and Environment, which was responsible for environmental protection in the non-oil sector.

Weak Regulatory and Legal Framework

At the time of the establishment of the Inspectorate in 1979, Nigeria had no environmental regulations properly speaking, although there was legislation that sought in a variety of ways to regulate the environmental impact of the industry. The most important of these were the Oil Pipelines Act (1958), the Mineral Oils (Safety) Regulations, 1963, the

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Petroleum Regulations 1967, the Oil in Navigable Waters Regulations, 1968, the Petroleum Decree No. 51 of 1969, the Petroleum (Drilling and Production) Regulations 1969, the Associated Gas Reinjection Decree No. 99 of 1979, and the Petroleum Refining Regulations, 1974 (Nwankwo and Irrechukwu 1981). As environmental regulations, these suffered from a number of crucial deficiencies. The first was the absence of specific discharge limits and effluent quality standards. General criteria and exhortations such as 'good oilfield practices', 'in a proper and workmanlike manner', etc., which were sprinkled throughout the various regulations, were no substitute for specific standards. Further, no attempt was made to spell out in detail the implications of such criteria for environmental practice and management. Very frequently, where reference was made to specific standards they were those of foreign manufacturers or institutes such as the American Petroleum Institute. These standards were not spelt out or adapted to local conditions and were not easily accessible to an interested public. Significant areas of the oil industry (such as marketing and retail) were completely unregulated. No Environmental Impact Statement (EIS) was required at this point for the issue of prospecting, mining, or pipeline licences and leases.

Second, sanctions were negligible in most cases or completely absent. There were few, if any recorded instances of prosecution under these regulations. The Petroleum Decree No. 51 provided that the Head of the Petroleum Inspectorate 'may direct in writing the suspension of any operations which in his opinion are not being conducted in accordance with good oilfield practice' (sect. 7(g)), and the Federal Commissioner for Petroleum was additionally empowered to revoke an oil prospecting licence or mining lease if in his opinion the licencee or lease holder was 'not conducting operations continuously and in a vigorous and businesslike manner and in accordance with good oilfield practice'. These powers were never deployed, in spite of clear evidence of environmental infractions. Although clean water regulations within the general statutes provided another basis for prosecuting polluters, there is no record of criminal proceedings ever being initiated by any state against an oil company for pollution of water courses and water bodies. This weak regulatory environment not surprisingly encouraged many abuses, including what Inspectorate officials described as 'indiscriminate dumping of drilling muds and cuttings and produced formation water,

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dumping of sludge and a host of other malpractices' (Nwankwo and Irrechukwu 1981).

Finally no specific requirement existed for anti-spill contingency planning by either producing or marketing companies. The oil producing companies themselves maintained some organisational resources as well as a 'Mutual Assistance Plan' for dealing with incidents of pollution. However, these pollution control capabilities were rudimentary and not intended to deal with serious emergencies. In June 1980 the Oil Producers Trade Section, which represented the oil majors in the Nigerian Chamber of Commerce and Industry, admitted that '(t)he means for coping with a major emergency in the oil industry in Nigeria is, at present, severely limited. Except for manpower, and severely limited public assistance, the companies must depend on their own resources and mutual assistance plan'.[4] The Mutual Assistance Plan of the oil companies was first drawn up in 1972; it was very basic and did not establish an organisational structure as such or make any specific resource demands on the participating companies. It merely involved arrangements whereby an operator faced with an emergency could, if desired, call on other companies for assistance with equipment. Equipment loaned was to be replaced or reimbursed plus a margin to cover costs. The entire 'organisation' of the mutual assistance plan boiled down essentially to a list of contact phone numbers for the participating companies.

At another level, the judicial system in Nigeria provided little support or comfort to those interested in protecting the environment. A survey of judicial decisions in the environmental area by Adewale of the Nigerian Institute of Advanced Legal Studies raised serious questions about the impartiality of the courts when it came to adjudicating on the injurious environmental impact of the oil companies (Adewale 1987). Judicial decisions on environmental issues were capricious, inconsistent and often blatantly biased against those seeking redress for pollution perpetuated by the oil companies. Rulings by Nigerian courts often

[4] Oil Producers Trade Section, Nigerian Chamber of Commerce and Industry, Lagos, 'Emergency Mutual Assistance Plan for Nigeria' (first printed September 1972, revised June 1980).

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amounted to a virtual carte blanche to the oil companies to pollute without risk of punishment; the 'public interest' was invoked rather to protect these companies from the possibility of legal redress. *Allar Iron vs Shell-BP* illustrated all too well, the paternalistic attitude of the law courts in this regard. The judge in this case stated publicly that he would rather see the plaintiff go without remedy than issue an injunction that would have the effect of strangling the oil industry which was the mainstay of Nigeria's economy.[5] There were several reasons for this discouraging record. First, as Adewale correctly observes, the direct interest of the Federal Government in the oil-producing companies did not encourage either the courts or the states to take a tough or independent line against these companies. Second, the nature of Nigerian law on the whole did not encourage litigation except under limited circumstances. The absence of strict liability clauses in the Nigerian legislation meant that companies that failed to live up to minimum standards of public safety (and pollution offenders were by no means the worst of these) usually escaped punishment. Bringing a 'public nuisance' suit required the party to prove particular personal damage 'different in kind and degree from that suffered by the generality of the public' (Adewale 1987:45). This made it virtually impossible to bring the kind of 'public interest' suits that have served environmental movements so well in some countries. Third, cases brought before the courts required burdensome proof, and in these adversarial encounters, the petitioners (many – though by no means all – impoverished villagers) were easily overwhelmed by the legal and scientific resources of the oil companies. However, even slim prospects of success did not discourage aggrieved Nigerians from launching an extraordinary range of litigation against oil companies.[6]

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[5] M. A. Ajomo, 'Legal Implications of... [Pollution?]' Paper delivered to the NES workshop on Environmental Control and Protection, 23 March 1988, 20-21. Also courts had been following the decision in Shell-BP vs Uweye (1976) in refusing to hold oil companies responsible for spillage arising from the actions of third parties (saboteurs). For legal basis, see Oil in Navigable Waters Act 1968 (Ibid. 16) which rests on the ability of the owner of the facility to prove *force majeure* or third party interference.

[6] For a discussion of legal suits and their outcomes see Adewale (1987).

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However, efforts to design a much more effective regulatory framework were initiated following a conference on the 'Oil Industry and the Nigerian Environment' hosted by the NNPC and the Nigerian Ministry for Housing and the Environment in Port Harcourt in November 1979, where it was decided, above the strenuous complaints of the oil majors, that such regulations were long overdue.[7] The need for more stringent environmental and safety controls was underlined by several other developments during 1980. The first was the disastrous blow-out at Texaco's North-Apoe platform at Funiwa-5 barely two months after this conference.[8] In 1980 the Inspectorate began making public data on oil spills for the first time, drawing attention to the dismal performance of the producing companies. The year was also noteworthy for the unusually high number of casualties – 164 (of which 55 were fatalities) in 76 accidents – in an industry whose safety record was at best indifferent (1980:9).

Regulations were initially strengthened in three areas: control of gaseous emissions (flaring of associated gas); the introduction of effluent standards, and spill monitoring and control (contingency planning). Decree 99 of 1979 banned flaring of associated gas by January 1984. According to this decree, associated gas was to be reinjected or utilised for some commercial purpose. However, the attempt to develop 'nationally laid-down standards' in the oil sector (as decided at the 1979 conference) did not begin in earnest until the 'Interim Standards' were issued by the Petroleum Inspectorate to oil producing companies in 1981.[9] This, for the first time, sought to impose controls on industry discharges, prohibiting the discharge of formation water, muds and cuttings into any public drain or sewer, natural or artificial body of stagnant water, fresh-water body or inland waters, well or pit, except as

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[7] For an account of the proceedings of the 1979 conference see... and my unpublished study 'Oil, Ecology and Public Policy in Nigeria', University of Toronto, 1980, ch. 2.

[8] See my account of this event in Hutchful, 1985, 'Oil Companies and Environmental Pollution in Nigeria', in Claude Ake (ed.), *The Political Economy of Nigeria*, Longmans.

[9] Petroleum Inspectorate, 'Interim Standards for the Discharge of Formation Water from Oil and Gas Production Installations', and 'Interim Standards for the Handling of Mud and Cuttings'.

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authorised by the Petroleum Inspectorate. Exemptions could be granted where the quality, rate or volume of discharge, or all three combined, rendered the discharge acceptable, or where the 'net benefit, from consideration of ecological, social and economic factors, of allowing the exemption outweighs that of refusing it' (article 3.2). Separate limits were established for *formation water* in (a) fresh water, non-tidal, coastal and tidal waterways (b) offshore waters, and (c) dry land and seasonal swamp. In fresh water environments, additional limits were required if water downstream from the point of discharge was used for human consumption. No direct discharges were permitted into seasonal swamps or dry land; all discharges were to be made into properly constructed burrow pits from where they were to be transferred into an appropriate body of water with the prior approval of the Inspectorate. *Oil-based drilling muds* disposal was to be by incineration, sludge-farming, discharge into an oil production system or other approved method, while *water-based muds* were to be discharged directly or indirectly into approved swamp cuts, burrow pits and offshore waters. Disposal methods should be such as to prevent seepage or overflow of muds onto any land, subsoil or water body net expressly prepared to receive it. *Cuttings* were to be thoroughly cleaned and disposed of through sale or use, or by dumping, spreading or burying on land owned or leased by the operator, or discharged into offshore waters. Oily cuttings were to be disposed of as oil-based mud.

A second innovation was spillage monitoring and control. All operators were required to develop approved contingency plans for oil spill clean-up, containment and recovery. This included the development of an internal corporate organisation in each producing company for spill response and control and the maintenance by each company of a stock of approved equipment and chemicals for on-site containment, clean-up, and recovery of spilled crude. Spills for this purpose were categorised into three orders of magnitude: minor (1-25 barrels), medium (between 25 and 200 barrels), and large (exceeding 200 barrels). Each company's resources were expected to be sufficient to deal with minor and medium spills; for large spills beyond the capabilities of a single operator, the companies established the 'Clean Nigeria Associates' (CNA), an oil-spill cooperative operated by Haliburton, an oil-services contractor. Contingency plans were required to be 'site-specific', i.e., tailored to the

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particular operational environments encountered by the particular operator. Annual updating of the contingency plan was mandatory.

At the same time (as already mentioned), the NNPC Act (amended) of August 1981 clarified and strengthened the responsibilities of the Petroleum Inspectorate with regard to the environmental aspects of the industry, particularly in the area of spill monitoring and reporting.

Two brief comments may be made about the Interim Standards. It is an indication of the influence of the oil companies that the development of real environmental regulations occurred from the earliest, not in antagonism to their interests but with their collaboration and even under their guidance, even though the companies had expressed lack of enthusiasm for any kind of environmental regulation. The 'Interim Standards' were in fact based on proposals submitted by the oil companies (the Oil Producers Trade Section of the Nigerian Chamber of Commerce and Industry) in October 1980. These proposals incorporated what the industry itself 'thought would provide adequate protection to the environment and the ecology and yet not prove to be so costly to carry out as to cripple the industry'.[10] Although hardly desirable, this procedure could probably be excused on the grounds that the Inspectorate did not have the data required for setting down environmental regulations in the short-term. But as officials in the Inspectorate conceded, it did raise concerns about the credibility of the regulatory process (Nwankwo and Irrechukwu 1983:105). The oil companies were also entrusted with the funding and management of a study into the environmental impact of the oil and other industries in their areas of operation, and in May 1980, submitted 'comprehensive proposals' on what this study should aim to find out, how it should be conducted and controlled, and who should be invited to tender for it. This is a case of the regulated setting forth the conditions for their own regulation.

Second, although the new standards represented a significant advance over the previous laissez-faire regime, the provisions failed in several respects to establish a proper framework for sound environmental

[10] Mobil, *Mobil Producing Nigeria [Limited] and the Prevention of Oil Spills*, Calabar, Nigeria (n.d.), p. 16.

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management practices. No schedules for compliance or sanctions (in event of failure) were spelled out. Specific standards continued to be absent in several areas (most obvious among these, was the design of facilities); for these, were substituted such phrases as 'with the approval of the Petroleum Inspectorate' or 'to the satisfaction of the Petroleum Inspectorate'. Discharge of effluents continued to be permitted into waters used for human consumption, often without prior treatment.

However, it was one thing to pass stronger regulations and another to actually enforce them. How rigorously were these new regulations enforced? In performing its functions of regulating the industry, the Petroleum Inspectorate faced a number of constraints.

Staffing

The first of these was the lack of adequate staff. As we have seen, staffing was a problem in the regulatory structure from its earliest days. As the Inspectorate became established, however, the reasons for these staff shortages changed. While in the past it was due primarily to shortages in science and engineering graduates in Nigeria, now as these graduates became more available from the expanded output of Nigerian and foreign universities, the problem became a budgetary one. In 1988 the Technical Services Division (TSD), the department responsible for environmental monitoring, had three field offices (Port Harcourt, Warri, and Kaduna) and three departments: Environment and Safety; Laboratory Services and Engineering Audit. Environment and Safety had a total staff strength of fifteen, with eight at the headquarters office and the rest at the field offices. Fifteen additional staff had been requested without success. According to officials interviewed at the time, this unit required thirty technical and twelve support staff, at least twice the staff in place.[11] There had been no recruitment in the preceding three years, and officers at post were overstretched.[12] Appeals for additional staff for the unit were dismissed as 'empire-building'.[13] These difficulties with

[11] Interview with Dr. Nwankwo, Lagos, 26 August 1987.

[12] Interview with Dr. Ifeadi, 6 August 1987.

[13] Interview with Dr. Nwankwo, *Ibid.*

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staffing were attributed to two reasons: the lack of moral and financial support from the authorities for the Inspectorate, and on the other hand, the low funding priority attached to the Inspectorate by its corporate parent the NNPC, relative to more critical revenue-earning divisions like Oil and Gas.[14]

However staff shortages were a key problem for the Inspectorate as a whole. According to B. A. Osuno, the director, the Inspectorate's staff strength of 280 (in 1988) was entirely inadequate to effectively supervise or monitor the oil industry. How, he asked rhetorically, could so few officers be expected to be responsible for an industry that included:

(i) The ten exploration companies with over 9,000 staff operating 6 export terminals, 130 flowstations and about 2,600 oil wells;

(ii) The three oil refineries with over 4,000 employees;

(iii) Some twenty Petroleum product depots scattered all over the Federation;

(iv) The eight major marketing companies with over 6,000 employees and some 2,000 petrol stations;

(v) Some 200 independent marketers with over 350 petrol stations;

(vi) Some seven thousand (7,000) kilometres of pipelines carrying crude oil and petroleum product;

(vii) All the service companies ... operating in the oil industry? (Osuno n.d.:7).

The effectiveness of the Inspectorate was further compromised by its multiple and diffuse functions, some necessitated by the corruption in the industry. As Osuno went on to complain in the same speech:

Where else would a government agency be expected to spend so much time monitoring the activities of bunkering agents, the accuracy of meters at petrol stations, the quality of products sold to the public and the movement of drivers carrying products? In the more developed countries, some of these things are taken for granted and the government

[14] Interview with Public Relations Officer of the Petroleum Inspectorate (Rewane).

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agencies can afford to lay more emphasis on safety and environmental considerations.[15]

Conversations with Inspectorate and NNPC personnel, however, suggest that other factors contributed to these difficulties with the staffing situation. One of these appeared to be inappropriate hiring practices. Staff recruitment in the NNPC appeared to be haphazard, and to reflect little of the real needs of the organisation. New employees were hired with no specific job requirements in mind, even though graduates with degrees in engineering and the sciences were preferred. And because recruitment was not related to specific skills and functions, the few officers with the requisite skills tended to be overloaded with work while other staff remained underutilised. Hence, even though the overall staff complement of the Inspectorate had improved over time, many key functions continued to lack the personnel capable of performing them.

Second, the Inspectorate had no formal training programme. One headquarters staff in Lagos actually claimed (in the presence of other staff) that he learned all he knew from a manager of an oil producing company who had been kind enough to lend him some literature on the subject and to respond to his questions.[16] Inadequately trained staff were being sent out to monitor operations for which they were not properly trained or equipped.[17] Lack of in-house training programmes comparable to those of the oil companies was a frequent source of complaint. Accounts of this kind would seem to verify the complaint encountered within the oil companies that the staff of the Inspectorate were not properly trained or equipped to monitor their activities (see below).

Whatever the accuracy of these reports, it was clear that these difficulties were compounded by a serious morale problem among staff

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[15] *Ibid.* p. 11.

[16] Interview with Inspectorate official (Ekaluo), Lagos, 18 August 1988. The subject was a Mechanical and Safety Engineer. In some instances, junior and middle-level Inspectorate staff spoke of requesting managers of the oil companies to pressure Inspectorate managers to offer them more training.

[17] *Ibid.* Inspectorate staff interviewed felt that in some cases they lacked the required exposure to certain field procedures. One specific example cited was hydraulic pressure vessel testing.

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of the Inspectorate. There were open and vocal complaints about personnel policy. These involved frequently, allegations which were impossible to verify, but which will be noted here because of the frequency and context in which they were encountered.[18] These included lack of appreciation for performance, alleged favouritism in treatment of staff, in promotion and in issues of discipline, and reliance on personal connections to get ahead.[19] Staff were being 'strangulated' (to cite the words of one informant), and 'bright recruits' were frustrated by these practices.[20] There were also complaints of redundancy, with several staff remarking that there was 'nothing to do' in the Inspectorate. One official went so far as to call the Inspectorate a 'dumping ground' where 'they send people they don't what to do with'.[21]

Transport and Logistics

A second major problem, in addition to staffing, was logistics. Many of the flowstations and other facilities to be monitored were located in swampy terrain with few roads and little or no infrastructure. Most of these locations in the Niger Delta were accessible only by boat or helicopter; for more distant locations in the Eastern Sector such as Brass and Bonny, a journey by boat took several hours and the only feasible way of getting to these locations quickly was by helicopter. Transport of any form was an acute problem in the Inspectorate and a never-ending source of complaint. One senior official called it the 'number one problem'; the availability of transport was 'nil in terms of operational

[18] Usually these allegations were made by both junior and relatively senior officers and in the presence of at least one other officer of the Inspectorate who would have been in a position to rebut them if they had chosen to. The problem of morale appeared to have reached its height in 1987 and 1988 in the light of the impending dissolution of the Inspectorate and the transfer of staff back to the civil service.

[19] Interview with Inspectorate official (Emeka Anibueze), Lagos, 18 August 1988. Safety Engineer, trained in Canada.

[20] Interviews with Inspectorate officials, Ekaluo, 20 August 1987 and Arah, 18 August 1988.

[21] Interview with Inspectorate official, 20 August 1987.

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activities', for both headquarters and field staff.[22] The headquarters of the Technical Services Division (TSD), the environmental arm of the Inspectorate, did not have a single working vehicle at its Lagos headquarters during the summer of 1987 and relied on pool arrangements that did not seem to work very well. Although the Inspectorate had acquired several boats, unlike the oil companies it did not have its own helicopter. The TSD had limited independent monitoring capability: more often than not, oil companies had to be relied upon to provide the transportation for monitoring their facilities. This ruled out any form of surprise checks, and thus made it difficult to determine whether the companies were in fact complying with directives, since they could not be monitored without prior notification or, as a rule, their collaboration as well.[23]

Lack of Monitoring Capability

Effluent collection commenced around 1978. The practices put in place raised a number of difficulties. Effluent sampling was carried out separately by staff of the Inspectorate and the oil companies and the results were forwarded to the Headquarters of the Inspectorate in Lagos (no effluent analysis took place at the field offices). In spite of this, much of the data ten years later (1988) had not been subjected to any meaningful or systematic analysis. As one official observed, 'Monitoring is done simply as a (formal) requirement. Nobody bothers to interpret it [the results], analyse it, or even look at it'.[24] Another field official in the Eastern zone described the environmental monitoring system as being 'in shambles'.[25] There were several reasons for this. The first, as noted earlier, was the lack of transportation. Because of this, testing schedules

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[22] Interview with senior Inspectorate official (Dr Ifeadi), 6 August 1987.

[23] For instance when I asked one Inspectorate field official if the oil companies were complying with the ban on dispersants, the response was that there was no way of proving whether the companies were or were not using dispersants. In the words of the official: 'Since the company itself is taking you there [to the site] by the time you get there they would have covered it [the dispersant] up'.

[24] Interview with Inspectorate Official (Arah), 20 August 1987.

[25] Interview with Inspectorate (Tony Nwaokaogbara) Port Harcourt, 14 August 1987.

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could not be maintained, and stations were missed. (At the time, the schedule was to sample flowstations twice monthly and terminals and refineries once a week). According to informants 'most of the time' monitoring staff were dependent on the oil companies to deliver them to the testing sites. Another problem was the lack of standardisation of effluent sampling procedures that would make it possible to actually compare the findings from the Inspectorate and the oil companies. Both the Inspectorate and the individual oil companies utilised their own sampling techniques, with the result that there were frequently wide divergence between the results (for that matter the Inspectorate's own sampling values often showed wide and unexplained variations from the same discharge points).

Limited Scientific and Laboratory Capabilities

Yet a third factor was the absence of laboratory facilities for processing and analysing the samples. Analytical work for the Inspectorate was carried out by a laboratory in Lagos and a second laboratory in Port Harcourt belonging to the NNPC. The laboratory in Lagos suffered from weak management, inadequate equipment, lack of chemicals (particularly reagents) and power failures. The day I visited the laboratory, uninstalled equipment littered the site. No research was conducted at the site and according to the head of laboratory services at the time, Rex Arah, failure to return analysis was not uncommon.

One example would serve to demonstrate the embarrassment that this lack of proper laboratory and testing equipment could pose to the Inspectorate. For several years, there had been persistent complaints from the people of Okrika (downstream from the NPRC refinery in Port Harcourt) of dead organisms, diminishing fish catch and deteriorating water quality. The refinery was equipped with two effluent discharge points, one discharging directly into the Ekrekana creek and the other located near the Okrika jetty. The Inspectorate investigated an accidental discharge into the Okpokiama stream by the NPRC refinery on October 5, 1981. Two samples were collected: one from the stream and another from the API (the source of the discharge into the Okrika jetty and the Okpokiama stream). When the results were returned by the laboratory turbidity, oil\grease content, and salinity values were actually *higher* for

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the stream than for the pit. These results obviously did not seem very plausible, and the monitoring team duly concluded that the 'case of pollution cannot be established with the present data'. A further difficulty was the absence of previous baseline data for the stream. A second report was commissioned in May 1982. Again, the lab results had such 'glaring inconsistencies' that the investigators rejected them as 'not very meaningful'.[26] Unable to proceed any further in the absence of credible laboratory facilities, the team abandoned the investigation.

Discussions with Uzoigwe, the director of the NNPC laboratory in Port Harcourt, provided some explanation for the basis of some of the difficulty with the lab. According to Uzoigwe, in spite of the fact that the lab had been in existence for several years it was only recently (1987) that the R and D section had obtained the commitment of the NNPC and a clear set of operational objectives. In the past his predecessors had been unable to get the support of the government and the corporation for scientific work. Government considered it easier to purchase the expertise from foreign sources than to try to develop it locally. The lab suffered from a shortage of competent technicians capable of operating and servicing equipment and difficulties in procuring the necessary equipment, although this was being 'slowly rectified'. The equipment available was in various states of repair. In Uzoigwe's view the Inspectorate should not be using the laboratory facilities of the NNPC, and he did not consider servicing the Inspectorate to be one of the prime functions of the lab. In any case their present equipment was totally inadequate for the kind of support required by the Inspectorate; in his opinion 'a full-fledged environmental research lab would have twenty times what we have now'.[27]

Although the need for adequate laboratory facilities for the NNPC had been recognised at least as far back as the Irefike panel, there had

[26] Quotations are from the report of the investigation. The broader account was provided in the Port Harcourt interview of 14 August cited above.

[27] Interview with Dr Uzoigwe, Port Harcourt, 17 August 1987. By contrast Shell had well-equipped laboratories in Port Harcourt and Warri. NAOC had also recently constructed a well-stocked laboratory at the new gas reinjection facility at Obrikom. On various occasions, oil companies would be requested to loan equipment to the Inspectorate or the NNPC.

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been delays due to funding difficulties and disputes regarding siting. Although Rex Arah, a former head of the Department of Chemistry at the University of Jos was recruited to develop and rationalise the laboratory system for the Inspectorate, he blamed ethnic and regional politics for the lack of progress on the national laboratory. He also attributed it to the fact that the management of the Inspectorate had 'no understanding of science and scientific requirements'.[28] He echoed Uzoigwe's contention that administrators preferred continued technical dependence on foreigners to developing indigenous scientific capability.

Lack of Industry and Public Confidence

> The Petroleum Inspectorate has not fully organised itself to execute its statutory functions and to check irregularities in the countries (*sic*) oil industry. The authenticity of our crude oil production and export figures continue to be doubted in many quarters. Oil spillage go unnoticed, except when the operating companies choose to report them or simply cannot conceal them, while illegal

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[28] In Arah's blunt opinion, the Minister, who was from the North, apparently wanted the laboratory to be sited at either Kaduna or Abuja, and that in any case 'because it's in Ibo territory, the National Laboratory concept has died'. My interviews with Arah took place during August 1987, the first being held in his office at the Inspectorate on the 20th. Arah at this time had acquired a reputation for being 'disgruntled', a reputation that he did not go out of his way to disguise. But he was clearly not the only 'disgruntled' employee (only the most vocal), and both the opinions and actions of his colleagues (for instance referring this interviewer to him 'for the facts') suggested that they regarded him as something of a spokesperson. A month after our interviews, he resigned his post and left Nigeria. Many of the officials interviewed expressed a similar desire to leave if other opportunities had been available. The issue of ethnicity was not one that I investigated systematically, although the general attitude of the officials that I interviewed was that in the Inspectorate and NNPC, as elsewhere in Nigerian life, ethnicity was 'obviously' important. Arah himself had no doubt that this was the case, stating that 'Everything I write is looked at from the Ibo angle' (20-8-87). He had support from at least one other officer (not Ibo) who described the Insepectorate as a 'microcosm' of Nigeria, where 'tribalism' was 'everywhere'. According to this officer, 'tribalism' was a 'living phenomenon in [the] NNPC in general'. Yet others admitted to the presence and influence of ethnicity but denied that it affected the operations of the Inspectorate in any significant way. At least one other senior officer (an Ibo) suggested that 'cliquism' was the more serious problem: 'to get anywhere you need to belong to a clique'. Cliques differed in that they may be multi-ethnic. Certainly Ibos appeared to occupy a prominent place among the scientific cadre in the Inspectorate, and included Osuno, the Director of the Inspectorate; Nwankwo, head of the TSD; Ifeadi, his deputy; and Arah himself.

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> sales and handling of petroleum products proliferate (S.U. Essien, Chairman of Pengassan).[29]
>
> These are white collar people. They come in shoes and so on and don't want to get their feet muddy. So they don't penetrate into the swamps (Environmental Scientist, University of Port Harcourt, 1985).

Such negative assessments of the Inspectorate were common in the industry and among the scientific community. The opinion heard repeatedly among oilmen was that the Inspectorate staff lacked 'operational experience'.[30] The same oilman, a Shell official, went so far as to allege that Inspectorate staff were 'hazardous' at the terminals because of their lack of training and experience. There was some evidence (not surprisingly) that oil company staff resented directives from the Inspectorate. Among the common complaints was that the Inspectorate behaved just like a government bureaucracy, one example of this being that they 'never answered' their phone. Nevertheless, this was sometimes combined with praise for the dedication and tact of individual Inspectorate officials, such as Nwankwo and Ifeadi, and their openess to dialogue with the oil companies. The majors professed a preference for an effective, relevant, knowledgeable and up to date regulatory agency which was properly staffed, able to 'match economy with ecology' and capable of 'pursuing the national interest'. This was not far from the aspirations expressed by Nwankwo himself.[31]

Remarkably, several (though not all) Inspectorate officials endorsed this critical view of the agency. They admitted that the Inspectorate suffered from constraints and lack of training, facilities, and data base relative to the oil companies; according to one officer there was really

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[29] S. U. Essien, Welcome Address by the Chairman Pengassan at the Third Delegates Conference of the Branch held in Port Harcourt on 9-11 March 1984.

[30] Interview with E. C. Odogwu, senior environmental official, Shell Petroleum Development Company, Lagos, on 21 August 1987.

[31] Interview, Lagos, 26 August 1987. The view of the majors was offered by Odogwu, a lawyer and, in the 1980s, the best known and most controversial corporate spokesperson on environmental affairs. See his article: 'Economic and Social Impacts of Environmental Regulations on the Petroleum Industry in Nigeria', *The Petroleum Industry and the Nigerian Environment: Proceedings of the 1981 International Seminar*, Lagos: Nigerian National Petroleum Corporation, 1983.

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'no basis for comparison' with staff of the oil companies, who tended to benefit from the international connections and sophisticated technology of their companies. Nevertheless at the hierarchy of the Inspectorate there was considerable sensitivity to what was seen as the negative public perceptions of the agency. There were many complaints of lack of public understanding of the role of the Inspectorate, by – among others – 'those in position to understand' – and of unjust criticisms of the role of the Inspectorate.[32] When the director of the Inspectorate, B. A. Osuno, identified the four most important constraints on the effectiveness of the Inspectorate in the speech cited earlier, 'distrust' and misunderstanding from both the public and the industry, and 'lack of public support' headed the list. Many members of the public, he complained, considered the Inspectorate to be much more powerful than it actually was. The Inspectorate also found itself caught between the expectations of the industry and those of the public; while the industry seemed to think that it was going too far, the public thought that it is not doing enough. We will return to the problem of public attitudes later, since much of it was an offshoot of the public's perception of the relationship of the agency to the industry.

Low Compliance by the Industry

Whatever the reasons – and our analysis would suggest that there were many more than were identified by Osuno – there was evidence that the Inspectorate was having difficulty getting the oil companies to comply with environmental regulations. An operational audit of nineteen oil installations in November 1984 by the Research Partners International (RPI), an American company contracted by the Inspectorate, and the Inspectorate's own follow-up survey a year later, demonstrated clearly low levels of compliance by the oil companies. Although the RPI decided to avoid any 'overt criticism concerning previous or current operational procedures' – in effect to censure itself – it nevertheless uncovered a long list of operational abuses in almost every phase of the industry's operations, with serious consequences for the environment. Leaky valves and pipelines, broken or defective bulk storage tanks and

[32] Interview with Nwankwo (*Ibid.*) and the Public Relations Officer of the Inspectorate (Rewani), 18 August 1987.

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other equipment, cracked or poorly designed bundwalls, and operator error were common throughout the industry, resulting in extensive spillage. Of particular concern were discharges of formation water, sometimes heavily tainted with oil and grease.[33] At least 19 installations identified by the RPI had each discharged over 5,000kg. of oil into offshore environments or more than 1,000kg. into land or brackish environments during 1982 and 1983. In all, the survey team concluded, there 'appear to be few changes in effluent volumes discharged by the major installations from 1980 to the present'.[34] In addition the RPI audit also uncovered large discrepancies between the concentrations of oil in the effluent samples submitted by the oil companies, and the concentrations recorded by the Inspectorate. This raised the possibility that the operators were deliberately understating the oil concentrations in their discharges by as much as fifty per cent.[35] Spill response preparedness – the focal point of the Inspectorate's efforts – was poor or non-existent at a number of locations; while most facilities had some spill-response equipment, written, on-site contingency plans to direct response actions were usually missing and few installations had actually practised with their equipment.[36] The RPI team – even while needlessly censuring themselves – nonetheless had some harsh words for individual operators who ran particularly dirty facilities. These included Texaco, Gulf, and Elf, whose Upomami flowstation with its effluent discharge directly into a mangrove-dominated swamp was 'one of the worst observed'.[37]

This picture of widespread operational failure and pollution was confirmed by the Petroleum Inspectorate's own review of industry disposal practices to determine compliance with the Interim Standards (Ifeadi, Nwankwo, Ekaluo and Orubima 1985). In addition to the usual

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[33] Research Partners International (PPI), *Baseline.* section VII, Operational Audit, p. 29.

[34] *Ibid.*, p. 30.

[35] *Ibid.*, p. 34-5.

[36] *Ibid.*, p. 14.

[37] *Ibid.*, p. 28. Nevertheless, the RPI was able to conclude (p. 37) that 'significant improvements in treatment of effluent waters have occurred since 1981, although large volumes of oil are currently being discharged into estuarine waters'.

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complaints about the disposal practices of the oil companies, the Inspectorate was quite critical of the technical design and safety standards of the facilities that they encountered in the field. 'Only very few waste pits' complied with the directive in Article 5 of the Interim Standards that waste pits be lined or consolidated (by cement or asphalt) to prevent escape of muds to land, subsoil or water bodies through seepage, overflow or other means. The majority of pits were 'poorly constructed with cracks, and small in size making them subject to overflow'. With the exception of one location, no effort had been made to rehabilitate abandoned sites, as required by Art. 5; abandoned waste pits had not been fenced off or covered up. Similarly swampcuts had not been lined to prevent seepage and infiltration into ground water; poor design of swamp-cuts meant that 'seasonal flooding and tidal actions were common occurrences', with contamination of adjacent creeklets by the contents of swamp cuts.[38] On the other hand, part of this failure in compliance was attributable to the lax standards established by the Interim Standards, which meant that the oil companies had 'wide latitude to interpret and implement the standards' as they saw fit.[39] Performance thus differed significantly from company to company and between different locations belonging to the same company.

In addition, virtually all the producing companies failed to meet the deadline imposed by Decree 99 banning flaring of associated gas by January 1984. The only reinjection facility completed in response to Decree 99 was the NAOC plant at Obiafu/Obrikom in the Rivers State. This was in addition to older and smaller plants operated by Shell at Oguta, Afam and Bomu, and Mobil in the Cross River State. By the end of 1984 somewhat less than 20 per cent of current gas production was being utilised for domestic and industrial purposes, the bulk of this for electricity generation by the National Electric Power Authority (NEPA). In December 1983 the federal government granted a blanket extension of the deadline by an additional year. With the expiration of the deadline, a fine was imposed for flaring of excess gas (initially the fine amounted to

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[38] *Ibid.*, p. 66.

[39] *Ibid.*, p. 68. It is noteworthy, nevertheless, that is spite of these widespread violations no prosecutions were threatened.

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two kobo for every 1,000 cubic feet of gas), subject to certain exemptions. On the basis of specified criteria, 86 out of 115 well operators were granted exemptions.

Oil Companies and Compliance Capability

However, weak enforcement by the Inspectorate was only one factor in this dismal performance. Weakness on the part of the oil companies *to comply* was another explanation. To understand this side of the story, one needs some insight into what was happening in the oil companies, or more precisely the environmental departments of these companies.

Oil companies were establishing environmental departments in the early 1980s during the same period as the Petroleum Inspectorate was struggling to find its feet. In Shell, the Environment Department in 1980 consisted of only one officer (S. A. Alao), working out of the Production Department. By 1985 the department had grown to a staff of ten, of which 4 were senior staff, headed since 1984 by a production engineer. There were two sub units: Prevention and Control. By August 1988 the total staff strength in this department had risen to 20 technical and scientific staff (excluding junior staff), with a minimum qualification of Master of Science. Of these, 7 were stationed in Port Harcourt, 5 in Warri and 5 in Lagos. Similarly in the Nigerian Agip Oil Company (NAOC) the Environment and Quality Control Department was created in 1980 with a staff of two, one of whom (the head of the unit) was a chemist. In 1981 two further employees were added, another chemist and a mineral resources planner. By September 1987 the department had grown to a staff of ten, seven senior and three junior staff split into two sections: a quality control section responsible for monitoring product and effluent quality and operating the company laboratory; and an environment section, which was in charge of pollution control and operations audit.

In the oil companies there was a consistent pattern of environmental departments being initiated and led by technicians from Production, or by other nonspecialists, rather than by environmental specialists. There were probably two reasons for this. One was obviously the technical understanding of production processes, particularly useful in controlling discharges. The other reason may have been (I suspect) to ensure that

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environmental concerns did not supercede or compromise production objectives. Environmental specialists were recruited much later and tended to be lower down the hierarchy than their nonspecialist colleagues. This gave rise to several problems. One was conflict within the environmental departments between heads who either lacked the requisite specialisation or were anxious not to compromise production objectives, and specialised subordinates anxious to fulfil their environmental mandate. A frequent complaint among these subordinates was that there was no clear division of labour calling on their specialised technical skills, thus leading to feeling of personal redundancy and frustration. Several felt that their skills were well in excess of the jobs that they were required to perform. In one case it was felt that the company (Shell) had employed Nigerian expertise but failed to utilise it properly; in another (NAOC) the qualifications of several of the employees were not considered pertinent to the job at hand. In interviews with staff of environmental departments, the feeling was frequently articulated that either their bosses did not feel secure in their positions or simply did not understand the requirements of the job. In several cases, scientific work prepared by the technical staff (or by outside consultants) had been claimed by the superiors with no credit being attributed.

More than once, those interviewed complained, echoing those already encountered in the Inspectorate, that the environment departments of the oil companies were a dumping ground for 'deadwood'.[40] There were also complaints of what was perceived as the marginal influence or cosmetic role of these departments within the corporate structure. 'I'd like someone to tell me how the Environmental Department fits into the scheme of things at AGIP, an environmental officer at NAOC remarked to me.[41] There were complaints that environment departments were not considered 'profitable', and therefore deserving of resources, within the

[40] Interviews with environmental officials of oil companies in Port Harcourt and Lagos, August 1987, August 1988, and June 1990. One Shell informant expressed the opinion that the quality of staff in the environment department was lower than in other departments of Shell.

[41] Interview with environmental officer, Nigerian Agip Oil Company, Port Harcourt, 1 September 1987. The view that oil companies have funded 'cosmetic research' is one that is sometimes echoed in the scientific community.

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corporate structure. (At least at NAOC the complaints of lack of support services were strikingly similar to those at the Inspectorate. Until 1987, the department did not have its own transportation and its officers had to – in the words of one informant – 'beg for transportation' to get to the field. On the positive side, the laboratory at Obrikom, intended for the primary purpose of monitoring the gas plant, had had positive spin-offs for the environmental section.) In some companies, sectional rivalries were reported between the Production and Environmental Departments.

Of the senior environmental staff interviewed in the course of this study in the mid-eighties, four resigned shortly afterwards. Arah's vocal departure from the Inspectorate in September 1987 was followed by H.R. Dalah from Elf, Magnus Kanu from the NAOC and C.S. Nwadiaro from Shell. Dr Nwadiaro, a biology lecturer from the University of Port Harcourt who resigned to return to his University appointment, cited 'redundancy' as the main reason for his departure from Shell (an issue raised in previous letters to his employers).[42] Nwadiaro complained that he had been hired to do a job that any 'five-year graduate' could have done, and was unsure whether Shell 'wanted scientists or penpushers'.[43]

To summarize, the capacity of the Petroleum Inspectorate to regulate the oil industry in Nigeria in the 1980s, was affected by a number of factors:

First, the Inspectorate lacked the data, scientific and research capability, and infrastructure required to effectively regulate the industry. In all of these areas the Inspectorate was underequipped relative to the oil companies that it was trying to regulate. A broader reason, however, was the lack of scientific knowledge regarding the

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[42] Letter from C.S. Nwadiaro to Shell Petroleum Development Company, 15 March 1988.

[43] Interview, Port Harcourt, June 1989. Magnus Kanu on the other hand went into business as a private environmental consultant. He later decried what he saw as the 'reckless abandon' of the multinationals and policy makers with respect to the environment, expressing the conviction that 'unless this country [Nigeria] sues one of the oil companies or even the NNPC for a large sum of money, they won't sit up' [*Ibid.*]. According to him there is the feeling among oil companies that there is no sense in investing in environmental protection since the oil wells may well dry out in a few years!

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effects of industry pollution on tropical and sub-tropical environments in general and the mangrove environments of the Niger Delta in particular. The Inspectorate also found itself constrained by a weak regulatory and legal framework which allowed it few sanctions.

Second, the institutional arrangement established by the NNPC Decree (No. 33) of April 1977 was a serious anomaly (actually one of several that placed the Inspectorate in important conflict-of-interest positions). Under this decree the Petroleum Inspectorate was effectively a subsidiary of the NNPC, which, as an oil producing (public-sector) company, it was also supposed to be regulating. Needless to say this odd arrangement made it difficult for the Inspectorate to exercise effective regulation over the NNPC – doubly unfortunate since the NNPC, like Petro-Canada, had one of the worst pollution and safety records in the industry. Although the Inspectorate was envisioned (somewhat contradictorily) as both an 'integral part' of the NNPC and at the same time as an 'independent department' within the NNPC not enough basis was laid for realising this independence. Among the departments of the NNPC, the Inspectorate did not enjoy funding priority, which went rather to revenue-yielding departments such as Oil and Gas.[44]

Yet another institutional anomaly was the fact that the Inspectorate was not solely an environmental agency but a multipurpose agency with broad powers of fiscal, licensing, resource conservation, as well as environmental regulation in the industry. In other words, relative to the oil industry the Inspectorate acted both as a 'Finance Ministry' – responsible for protecting and expanding the state's fiscal interests in this key industry – and at the same time a 'Ministry of Environment and Conservation'.[45] The result of these diverse and sometimes conflicting responsibilities was an in-built institutional ambivalence; the Inspectorate felt itself 'trapped between conflicting interests, viz.: environmental protection and continued growth of the oil industry'

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[44] Interview with Inspectorate official (Rewane), 18 August 1987. A similar view was repeated by industry sources outside the NNPC and the PI.

[45] Indeed in the beginning, the Operations and Licensing Unit, the Revenue Unit and the Pollution Control Unit were all housed in the same department, the Field Operations Department.

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(Nwankwo and Irrechukwu 1983). Within the Inspectorate itself there were clearly philosophical differences regarding the stringency and speed with which environmental regulations should be put in place. This was suggested by the contrast between the relatively indulgent posture of the director of the Inspectorate, Osuno (who once insisted publicly that Nigerians were much more concerned about development than about pollution)[46] and the militant criticism of the oil companies by Nwankwo, the manager in charge of the TSD, and his subordinates. These frustrations were shared by younger Inspectorate technocrats who deplored the limited technical capacity and effectiveness of the agency. Rivalries between the units in the Inspectorate were not uncommon and this also affected the effectiveness of the agency.[47]

Third, the majority public interest in the major oil companies meant that for all intents and purposes, the Inspectorate was dealing with public sector companies. This raised two difficulties. In the first instance, this denied the Inspectorate the distance and arms-length relationship required to impose costly regulations on these companies. In the second place, it meant that the state, as majority partner, became directly responsible for a preponderant share of any pollution-abatement charges – 80 per cent in the case of Shell (the largest operator and also the largest single contributor to the oil spill cooperative) and 60 per cent in the case

[46] According to him, an 'average Nigerian' would 'probably fight tooth and nail to have any industry sited in his area, whether or not such industry would pollute the environment', a factor that he thought 'should be borne in mind' when setting pollution standards. B.A. Osuno, 'Development and Implementation of Regulations to Control Petroleum Related Pollution in Nigeria', *The Petroleum Industry and the Nigerian Environment*, p.30.

[47] An internal memo from a director of one of the divisions in the Inspectorate in March 1988, complaining of lack of cooperation from other divisions and threatening sanctions, gives some sense of the nature of these conflicts: 'I have had occasion to regret our openness in releasing information to other divisions, particularly Conservation Division. When we in Operations request information from other departments or divisions, we are subjected to all sorts of bureaucracy rather than man to man request and speedy action. I have therefore decided that from henceforth, any information requested for (*sic*) by Conservation Division has to be made on formal basis and approval obtained from me before any such information is released'. Internal Memo from J. N. Udofia, General Manager of Operations, to Manager Headquarters Division, and Manager TSD, March 31, 1988.

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of the other operators. This acted as a further deterrent to costly regulation. In addition, environmental regulation coincided with contraction in oil markets, a fiscal and balance of payments crisis in Nigeria, and growing oil company discontent with rates of return in the industry.

On the other hand, however, this majority state interest was not translated into actual control or domestication of the industry. In spite of the sentiments expressed in the Second National Development Plan and in other government documents, it did not appear to be the intention of the Nigerian state that changes in the shareholding of the companies would necessarily lead to changes in the management and operation of the oil companies. Consequently, Nigerian governments had not taken measures to consolidate control over the industry to a degree commensurate with the growth of state participation and investment in production, marketing, distribution, and retail. The draft agreements that transferred majority participation to the Nigerian state in 1973 left almost all day-to-day management in the hands of the oil companies. Participation interests were acquired before the state had put in place structures for translating formal ownership into real control or active involvement in the industry. Subsequently, as Turner (1980) has argued, the natural tendency of oil companies to resist technology transfer to host countries in order to protect oligopolistic interests found allies among state bureaucrats more interested in revenue and commissions than in technical control of the industry and its technology.[48] Similarly, in an investigation of the downstream operations of the industry, Edogun concluded that:

[48] Although Turner's central distinction between 'compradors' and 'technocrats' in the state oil agencies may be simplistic, in some respects it helps to shed light on the conflict between younger technocrats in the Inspectorate determined to forge ahead with regulation, and older and more senior administrators perceived as dragging their heels on the issue of bringing the oil companies under more effective control

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> (Nigerian) state capitalism in refining, marketing and distribution of petroleum products lacks any concrete long-term commitment to the technical and managerial control of these activities. The outcome is that state capital continues to complement and strengthen the oligopolistic set-up sustained over the years by the major foreign oil marketing, refining and distribution companies (Edogun n.d.).

Criticisms about Nigeria's inability to monitor and control its joint venture partners in the oil industry have been made by Nigerian oil workers and executives.[49] This situation in the oil industry is not unique; various authors have attested to the lack of effectiveness of the Nigerian state in regulating the activities of MNCs in other sectors of the Nigerian economy (Hoogvelt 1979).

It was thus not surprising that in spite of the majority state participation, the oil companies continued to be treated, for all practical purposes, as *foreign* entities beyond state and regulatory control (and in reality the state agencies – the Inspectorate included – often acted as if they were junior rather than senior partners to the oil companies).[50] To show how ingrained this perception was even among not only politicians and public but also among state bureaucrats and regulatory agencies, we only need cite Osuno's speech on the relationship between the Inspectorate and the industry. In that speech, Osuno drew a contrast in the relationship between oil companies and regulators in a country like the United States, where the industry is locally owned and operated, and a developing country like Nigeria where the industry was controlled by foreign companies. In the United States, oil companies could react to the perception of over-regulation and over-taxation by negotiating with the regulators; they do not threaten to liquidate their assets and leave. In a developing country like Nigeria on the other hand 'they would rather threaten to quit and may actually quit' (examples of this, he claimed,

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[49] See for instance the NNPC Deputy Manager for Exploration, G. A. Adesemowo, in *Nigerian Tide*, 29 April 1982. Mr. Adesemowo complained of manipulation of the joint venture agreements by the oil companies and urged the establishment of an effective monitoring body to oversee the oil multinationals.

[50] One senior Inspectorate official described the letters from the Inspectorate to the oil companies as 'pitiful', trying to cajole the industry with a mixture of threats and appeals, Interview, 6 August 1987.

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were Libya and Norway). Thus in his view, there were inherent limits to regulating multinational companies not domiciled in Nigeria (Osuno n.d.). Osuno was in fact addressing companies that were *not* in fact 'foreign' in juridical terms, since they had majority state ownership. The most remarkable aspect of this speech was not this admission about the limits of control – or the implicit though realistic distinction between 'ownership' and 'control' – but the extent to which this perception of the 'foreign' nature of the oil industry was shared by state bureaucrats (not just the public) and influenced state policy. Yet the correct interpretation was that this perception was itself the *product* of state policy. From the standpoint of regulation, this situation meant that Nigeria enjoyed all the disadvantages of public sector companies (too much proximity and lack of arms-length relationship) and none of the advantages (greater administrative control and policy accountability).

As we have tried to show, at least initially, this technological dependence was no less the rule in the environmental sector. Before the end of 1981 all environmental benchmarks cited American and other foreign standards, with little or no local testing to support them. And when the Inspectorate decided in the aftermath of the 1979 conference in Port Harcourt and the Funiwa-5 blow-out to introduce more stringent regulations, it was once again to the industry that it turned – even though the industry had expressed marked lack of enthusiasm for such regulations. Within its limited means, the Inspectorate made modest efforts to close the information gap, sponsoring biennial conferences to disseminate scientific and research findings, funding baseline studies and encouraging oil companies to do the same. The result is that Nigeria has acquired a stock of pollution-related information in the oil sector, which, though far from complete, is outstanding among African and possibly Third World oil producers. Nevertheless, there was the perception among technical personnel in the NNPC and the Inspectorate that more could have been done, and that the state preferred to purchase technical expertise from abroad rather than develop indigenous capacity.

Yet, the division of labour in the Nigerian oil industry suggested by this picture – with the state as rentier and the Nigerian branch of the oil corporation as the source of value and technological innovation – was both incomplete and to some extent deceptive. Nationalisation of the oil

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industry did even less to transform the *corporate* division of labour within the multinational oil companies, in which scientific research and high technology work were centralised in the parent unit abroad, leaving relatively menial operations and low-technology work to the local subsidiary. This was as true for environmental research as for other areas of the industry's operations. The complaint by Nwadiaro (a highly trained scientist) about his 'redundancy' at Shell hinted at the *modus operandi* and consequences of this corporate division of labour. Shell is a particularly pertinent case because of its reputation – both inside and outside the industry – for progressive indigenisation policies and safety and environmental consciousness. This is confirmed by the fact that Shell has the lowest effluent and discharge levels in the industry, and Shell staff insist that they comply with the more stringent environmental specifications of Shell International in The Netherlands rather than the more lax local regulations. Nevertheless, Nwadiaro insisted that SPDC did not have the technical capability for credible environmental protection. The reason for this was the centralisation of virtually all major scientific and research functions in the corporate units of the parent company in Britain and The Netherlands, consigning routine operations only to the Nigerian company. It is this hierarchical structure that continued to determine virtually all technical and scientific aspects of the operations of the Nigerian company, including production techniques and inputs.[51] This picture does not seem to diverge significantly from the existing corporate division of labour in the other oil companies such as NAOC.[52]

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[51] As an example of how the corporate international division of labour expatriates research functions and scientific analysis to laboratories in the UK and The Netherlands, he cites the resistance to his suggestion that local substitutes be developed within SPDC for bentonite sand. Shell officials argued that such a matter would have to be referred to Shell UK.

[52] Although ironically, some NAOC officials contrasted their company unfavourably with Shell in terms of employment of local scientific researchers. Environmental officials at NAOC also compared the situation of the Nigerian department unfavourably with that of the same department at the headquarters in Milan, and argued that the existence of the Milan office was probably the reason for not taking the office in Nigeria more seriously. At NAOC, the chief of the environment department was demoted in seniority when the position was indigenised.

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As our earlier remarks would suggest, the Inspectorate lacked a political constituency in Nigerian society. While the failure to attract public confidence rankled with the Inspectorate, this was to some extent a situation which the Inspectorate had brought upon itself. Like many regulatory agencies, it was at best ambivalent, and at worst hostile to the public, often regarding it more as an enemy (or at best unwelcome intruder) than a source of political support. Operating (like many regulatory agencies) through bureaucratic procedures, it tended to regard the public as (if anything) an embarrassment, to be excluded as far as possible, from the policy-making and implementation process. This tendency was facilitated by the Nigerian political and legal environment. First of all, no role was granted to the public, environmental pressure groups, or community interests in the process of environmental decision-making and enforcement. The nature of Nigerian law virtually precluded use of the legal system to force some sort of accountability from public agencies, or alternatively to press for damages from industry polluters with much likelihood of success. Second, neither the Inspectorate nor the oil companies had any disclosure requirements beyond (in the case of the companies) the limited requirements of the Company Law. Even so, the oil companies were able to use the joint-venture provisions to evade even the limited disclosure provisions that govern their activities in their home countries.[53] The result, as any researcher could testify, was that information on environmentally related issues in the oil sector was not easy to access. In addition, for much of their existence, the Inspectorate and its predecessors operated under military regimes that incorporated no public oversight of the operation of public agencies.

The third factor was the absence of an organised environmental movement capable of monitoring the activities of both the oil companies and the regulatory agency. What did exist in Nigeria, however, was what may be termed peasant environmentalism, which took the form less of advocacy on behalf of an abstract 'nature' than of a struggle by peasants

[53] According to the joint-venture provisions, researchers were required to secure NNPC or Inspectorate authorisation before the oil companies could make information available. The oil companies have found a useful screen behind these institutions, which, though Nigerian, had no tradition of disclosure whatsoever and were more secretive still. The head of the Inspectorate, B. A. Osuno, was well known for his dislike of researchers.

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in the oil producing areas to protect their means of subsistence from destruction by oil company pollution, and was therefore connected with very immediate questions of peasant survival and reproduction.[54] Behind these struggles however, were broader issues of environmental justice; while peasant communities in the oil-producing states received little or nothing from the proceeds of the oil extracted from their land, they were forced to absorb the negative externalities generated by the industry. While the militancy of these peasants had much to do with the decision to adopt regulations, at the same time the embarrassment and negative publicity resulting from their activities did much to shape the Inspectorate's attitude toward the public, in particular the notion that such community action was 'disruptive', to be repressed as possible.[55] A view current in the industry, and echoed in the Inspectorate, was that peasants were trying to turn oil pollution into a money-making scam, by, for instance, damaging oil facilities or preventing spill clean-ups so that they could press for the maximum compensation for damage. This view percolated through the utterances as well as writings of some Inspectorate officials, and was responsible for a marked ambivalence in the way in which the idea of protecting the public from pollution was approached. Thus while the Inspectorate was in no sense directly

[54] By the late 1980s, several environmental organisations had come into being in Nigeria. Among these were the Nigerian Environmental Society (NES), and the Nigerian Conservation Society, the latter being concerned with wildlife preservation. However, both of these were considered to be 'establishment' organisations (the NES in fact drew heavily for its membership from the environmental departments of the oil companies and the Inspectorate, with C.N. Ifeadi of the Technical Services Division as its one-time General Secretary). The Nigerian Environmental Study\Action Team (NEST), with its headquarters at Ibadan and drawing among academic staff for its leading members, bridged the gap between these elite organisations and the popular movements described here by combining research, policy advocacy and some activism.

[55] This was certainly the view of the Nigerian government. In the 1970s and 1980s there was a succession of severe decrees designed to deter willful damage to or tampering with pipelines and other oil installations. These included section 3 of the *Criminal Justice (Miscellaneous Provision) Decree* of October 1975; the *Petroleum Production and Distribution (Anti-Sabotage) Decree* of November 1975, sections 1 and 2 of which decreed the death sentence or a maximum of 21 years imprisonment for actions designed to obstruct or prevent the production or distribution of petroleum products; and the *Miscellaneous Offences Decree* No. 20 of 1984, which prescribed the death penalty for tampering with oil.

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responsible for the broader issues of environmental justice in which it found itself immersed, in these conflicts, the institutional sympathies of the Inspectorate were unfortunately all too clear.[56]

The Inspectorate in Transition: Rapid and Excessive Institutional Change

A final factor in the poor performance of the Inspectorate was the very rapid institutional changes that took place in the regulatory structures in the petroleum industry. In the space of two decades – in 1970, 1971, 1977, and finally in 1988 – these structures underwent a series of major and rapid reforms. The logic of these reforms appeared to be somewhat circular. The reforms of 1971 created two separate institutions – a Ministry of Petroleum Resources and a commercial company, the Nigerian National Oil Corporation (NNOC) – to take charge of regulatory and exploration, production and commercial functions respectively. In April 1977, this arrangement was revised again with the abolition of both the Ministry and the NNOC and their merger into the Nigerian National Petroleum Corporation (NNPC), which incorporated both regulatory responsibilities (under the Petroleum Inspectorate) and commercial functions, with a further amendment of the decree in 1981. Yet another round of reforms in March 1988 seem to have brought the regulatory structure virtually full circle. Regulatory and production functions were again separated. The Petroleum Inspectorate was abolished and reabsorbed into a revived Ministry of Petroleum Resources under its old name of 'Department of Petroleum Resources', with a new Director. The NNPC now became fully commercialised with eleven subsidiaries. In 1990, the environmental functions of the former Inspectorate were taken over (at least formally) by a new independent regulatory agency, the Federal Environmental Protection Agency

[56] One example was when the Inspectorate decided not to educate peasants on the 'ill-effects of oil spillage' because of 'uncertainties about the possible results' of such education, specifically the fear that this might lead them to demand greater compensation from the oil companies. Osuno, 'Development and Implementation of Regulations to Control Petroleum Related Pollution in Nigeria', *op.cit.*, pp.25-6. This account is extracted from the original paper presented at the November conference 1981 (page 3) rather than from the edited version which appears in the published volume.

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(FEPA), with broad responsibilities for environmental protection and regulation.

At least in conception, the FEPA incorporated many of the provisions which critics had considered necessary for an effective environmental policy: comprehensive legislation covering all sources of environmental pollution (as demanded by the oil companies), independence from both government and industry, and the possibility (at least in theory) of real sanctions. However, the FEPA still faced many of the same teething problems as the former Inspectorate: lack of local data and guidelines that were primarily of foreign origin and doubtful local relevance and feasibility.[57] The FEPA also appeared to retrace the earlier experiences of the Inspectorate in appealing to agencies in the West for help in developing regulatory structures from the ground up.[58] And while paying lip-service to public participation and grassroots action, the FEPA procedures seem no less bureaucratic and disconnected from the public.[59]

On the other hand, there had been undoubted evidence of progress under the Petroleum Inspectorate. The year that marked the end of the semi-autonomous existence of the Inspectorate and its reabsorption into

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[57] Federal Environmental Protection Agency, 1991, 'Guidelines and Standards for Environmental Pollution Control in Nigeria', Lagos.

[58] Although Dr Nwankwo is on the governing board of FEPA, some interviewees have suggested that the delay in getting FEPA off the ground was due in part to the unresolved conflict over what would happen to the Petroleum Inspectorate once FEPA was in place, since the environmental functions of the Inspectorate would for all purposes become redundant. In the first few years of FEPA, the former Inspectorate continued to exercise responsibility for the oil environmental sector, but I am not clear about the present arrangement.

[59] Follow-up interviews of the former Inspectorate (now Department of Petroleum Affairs in the Ministry of Petroleum Affairs) personnel were conducted in 1990. The absorption of the former Inspectorate into the civil service went against everything that the staff itself thought was required for its efficient functioning. Unfortunately these fears seem to have been realised: loss of autonomy and subjection to the top-down hierarchical structures of the bureaucracy; emphasis on administrative rather than technical expertise; slow and complicated procurement procedures and budgetary cutbacks; shortages of equipment and inputs (such as reagents); and sharp deterioration in conditions of service from those previously offered by the NNPC have all taken their toll.

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the Ministry also registered the lowest volume of oil spills so far recorded: 179 spills and just over 9,000 barrels. 'Dirty' operations such as Izombe were well on their way to cleaning up their act, and relatively 'clean' operations such as Obagi were becoming cleaner still. The oil conferences and the research that they stimulated had contributed to a body of oil-related environmental data that was rather remarkable by African standards. Regulation of the oil sector opened the way to more generalised environmental regulation in Nigeria. The year 1988 was an important landmark in other ways. The 'Koko Toxic Dump' incident (the most important since the Funiwa-5 blow-out) shook the nation and led for the first time to environmental regulations with real teeth – first, the Harmful Waste (Special Criminal Provisions, Etc.) Decree No. 42 of November 1988, and the following month the Federal Environmental Protection Agency Decree No. 58. Coincidentally in November 1988, the Department of Petroleum Resources (the former Inspectorate) completed extensive revised regulations for the oil sector covering every environmental dimension of the operations of the oil companies and set forth penalties.[60] Nevertheless, the resurgence of environmental conflicts and savage eco-repression in the 1990s, suggests either that these gains were not enough, or have not proved sustainable. In any case, FEPA does not appear to have been the decisive step forward that had been anticipated. Precisely why this is so, only further research can tell.

[60] Department of Petroleum Resources, *National Environmental Guidelines and Standards for the Petroleum Industry in Nigeria*, Lagos, November 1988. The regulations covered exploration, production, terminal, hydrocarbon processing, oil transportation and marketing operations, introduced standardized monitoring and testing methods for effluents, and requirement for effluent and emission permits and Environmental Impact Assessment for new facilities.

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