

Relooking Industrialization, Species and Cultural Extinction through the Lens of the Ogoniland, Nigeria

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Abstract

Modernity, scientific and technological revolutions may be striking; but no less remarkable and important are the devastating reactions or effects which such radical revolution blows on humans, societies and culture. No doubt, proper and better ‘new’ displaces the old without regrets, but some hasty radical changes without correct consideration, continues to badly boomerang on the human society of every era. This problem is visible in industrialization and species of human culture. Through the oil exploration in Ogoni of Nigeria lens this research therefore examines how industrialization affects cultural evolution to the point of partial or complete cultural extinction. Species or speciation is one of the fundamental processes of evolution and the evolution here is particularized on cardinal aspects of culture to the point of extinction otherwise cultural extinction. The whole of culture involving language, religion, character and more viewed as some cardinal aspects of human ways of life cannot be examined in one gulp, therefore this research particularizes on economy source of oil exploration which has some judicial, social challenges apart from environmental pollution. Such constraints invariably orchestrated by industrialization and pollutions attracts a research for the goal of a

good aim of proffering some solution. This thesis, aptly with sustainability and functionalism theoretical frameworks within a phenomenological approach same time multi-dimensional, hopefully saw human frailty as the issue. Recommended human eschew of extremism as apt remedy towards restoration of industrialized society's culture up to cosmology for needed harmony and also development.

Keywords: species, industrialization, pollution, culture, and cultural-extinction

Introduction

In the words of Idoko and Mpigi (2021:1), the history of humankind has been that of preparation for and of war. Such life of war is linkable to industrialization's negative effects on species and culture to points of extinction at least with reference to pollutions resultant of oil exploration. Through the lens of the Ogoni in Niger Delta of Nigeria, 'industrialization, species and cultural extinction,' as a topic enquires into human-environmental interaction, especially as concerns the biotic components. Environment, the external conditions influencing the development of living organisms can broadly be divided into the cultural and physical categories here.

Apart from the cultural aspect otherwise the total life style of the living, the physical environment represents the concrete setting on which at least humans create the basis for life and activities on planet earth. Illustrate-ably, history has it that the invention of agriculture was the most fundamental of human discoveries. (Isichei 1976:7). Arguably, agriculture whether given or invented, serves as a marked turning point from the hazardous-wandering hunter and wide-plants eating culture, to, a more settled comfortable life that encourages development of further modern skills. Somewhat aligning with the current quest for at least a democratic governance of which Nwosu and Ekpenyong (2020:194) contend that the achievability of an egalitarian culture would remain a valued global discovery. Undoubtedly, such thought becomes interpretable as 'invention of further modern skills' which would add to valued global discovery data. It so connects industrial revolution which is in modern history, the process of change from an agrarian, handicraft economy to one dominated by industry and machine manufacture or industrialization (E. Britannica 2010). Modernity, scientific, technological and industrial revolutions may be striking, nonetheless, no less incredible and critical is the devastating reactionary effects of such radical revolution on societies, species and human culture. This seemingly overlooks the fact that man or life generally remains the central focus both of events and beings in the cosmogonic order (Nwosu *et.al*, 2022:58). That being acceptable, human inventions should rather aim to better life in all ramifications but not to extinguish it in any form. Unfortunately, this problem of life threat is visible in industrialization and the probable extinction of species and human culture. Industrialization is the human activity of converting to a socio-economic order in which industry is dominant. It could escalate to extinction of species and cultures even in its excellent exploitation which is findable in oil exploration that involves pollution of air, land and water. Species on its own brings to mind a biological classification comprising related organisms that share common characteristics and are capable of interbreeding while extinction in biology and more refers to the dying out or termination of a race or species. Extinction occurs when a species can no longer reproduce at replacement levels and most extinctions are believed to grow from environmental changes result-able from industrialization. Plausibly there can be alternatives that

can mitigate industrialization's negative impacts, if methods trusted are adopted for combating such situation (2020:199).

Hence, this qualitative research same time multidimensional, allowing interdisciplinary analysis approach involving sustainability and power dynamics, targets and examines industrialization's influences on species up to cultural extinction. It aims as well, though not claiming exhaustiveness, at suggesting some alternatives that can mitigate industrialization's negative effects thereto. Possibly through the objectives of finding out the distribution of power in industrialization to ascertaining its impact on communities and species, or human-nature relationship. It is obvious that industrialization shapes human relationship with the natural environment and such may occasion species and cultural extinction.

The Research Area

The research area is Ogoni in the Niger Delta of Nigeria, and part of the South-south geopolitical zone. Ogoni is in Rivers state of Nigeria. Rivers state is located or situated in the coastal plain of the eastern Niger Delta. Its topography is mainly characterized by rivers, lakes, creeks, lagoons and swamps of varying dimensions. The study is not on Rivers state but on a part of the state called and known as Ogoni. The area speaks Ogoni language. Aligning with Kpagane (2013:181),

Ogoniland is a region covering some 1000 km² in the south-east of the Niger Delta basin. It has a population of close to 832,000 according to the 2006 National Census, consisting mainly of Ogoni people. The region is divided administratively into four local government areas: Eleme, Gokana, Khana and Tai. Traditionally, the area is formed by six kingdoms (Babbe, Eleme, Gokana, Ken-Khana, Nyo-Khana and Tai) with His Majesty Godwin N. K. Gininwa as the areas Paramount Ruler. While to the outside world the communities of Ogoniland may appear similar, they have distinctive differences, including traditional institutional structures, languages and cultural features.

However the Supreme Royal Father, Gininwa was laid to rest this 2025 and Samuel I. Nne, is now coordinating supreme paramount ruler-ship, pending the emergence of a new overall royal father for Ogoniland. (G.M. Mpigi, oral interview at Koroma Tai, 7/06/2025). Whatever differences notwithstanding, oil exploration and pollution in Ogoni is same and of same effects according to the applied methodology and theoretical frameworks employed in this research.

Theoretical Framework

The theoretical framework application in this research combines J.C. Dernbach's Sustainability and Power Dynamics, with Emile Durkheim's Functionalism. An aiding and interesting background therefore, is accordingly formed in tracing the proponent(s) of any theoretical framework employable in any research as this. (Nwosu *et al*, 2022:61).

John C. Dernbach is an authority in sustainability or sustainable development, climate change and environmental law. Educated in University of Wisconsin, had Bachelor of Science in 1975 with honours in political science. At University of Michigan Law School he became a Juris Doctor in 1978. He serves as a commonwealth professor of Environmental Law and Sustainability at Widener University's Commonwealth Law School in Harrisburg, Pennsylvania USA. He also is the director of the school's environmental law and sustainability Centre.

Dernbach, has written over fifty articles and authored and co-authored more than twenty books, including, *Deep De-Carbonization in the United States* and *Agenda for a Sustainable America*. (en.wikipedia.org). Aligning with Dernbach's philosophy, sustainability, is the capability of retaining, relating to or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged. Contextually, it is of essence as it appertains a lifestyle involving the use of methods of industrialism that may not deplete species and human culture of the society whether urban or rural. Such care in industrialism-environment and species life relationship is very vital. According to Ben, A. and Okon, I. (2023:49), interactions between members of either different religions or other groups is inevitable for which is the advocacy for non-violent and non-hostile relationship. Corroborating, Ekeke and Nwosu (2024) decry the digital society attitude or movement towards secularism for the gradual or radical decline of conventional values as a result of globalization and postmodernism. All in one voice condemn negative effects of industrialism as sustainability of species and culture could be in jeopardy instead of being highly assured. Recalling the obvious fact that industrialization shapes human relationship with the natural environment and such may occasion species and cultural extinction.

Functionalism first emerged in 19th century Europe. (Haralambos & Holborn, 2013:9). Emile Durkheim (1858 – 1917) was the most influential of the early functionalists. Functionalism as a theoretical approach, elucidates the dynamic role which many institutions like religion or industrialism generally play in society's life. The theoretical framework is found in the works of the French sociological school and particularly in the work of, Emile Durkheim. "Few books on the science of religion stand out as powerfully as Durkheim's *The Elementary Forms of the Religious Life*, published originally in 1912 in France. To him the interrelations between the parts of society contribute to social unity and as well an integrated system with life characteristics of its own, exterior to individuals yet driving their behaviour. By positing a causal direction of social influence, looking from group to individual rather than the reverse, the model was accepted by most biologists and psychologists of the time and even now. (E. Britannica). Of a fact, the concern for what institutions like industrialism has to offer the society, has consistently increased the more in the 21st century scholarship. It is no longer a referent of mostly the ancient Greco-Roman time experience. Illustratively, the role of industrialization otherwise science and technology on contemporary society, especially species and human culture cannot be overlooked. The contributions on human society and life, now determines to a large extent, industrialization's acceptability or raises an eye-brow. Interestingly, the work of an anthropologist for instance, includes to study the way in which customs and beliefs and any other behaviour or action function to solve the problems of maintaining the system. Relevantly, functionalism aids an explanation in practical terms that groups can be held together on two contrasting bases: mechanical solidarity, a sentimental attraction of social units or groups that perform the same or similar functions. In the words of Haralambos and Holborn, functionalism adopts the perspective that various parts of society are interrelated and taken together they form a complete system. The parts of the society are its institutions like economy otherwise industrialism, and norms are associated with roles in society (2013:10). Such as organic solidarity, an interdependence based on differentiated functions and specialization as seen in a factory or other complex organizations. A little but helpful digression is to recall that technology which propels industrialization to some extent, is the application of science and other forms of organized body of knowledge towards the solution of practical problems. Given to the fact that technology is a problem solving process developed by a people to control the environment, harness resources and produce goods and services, for the improvement of the quality of human life (Uduigwomen,

1997:31). Then, industrialization ought not in any form cause species and cultural extinction. If it does, it is a grievous fault. This understanding raises the question of, what is the relationship between industrialization and species and human culture. Attempting a way out, sustainability and functionalism as theoretical frameworks are carefully guiding this inquiry into the now relationship of industrialism and species and cultural extinction findable today. We recall and thus lightly but directionally define industrialization for proper analysis of its functionality.

Industrialization

Grasping industrialization well in this research begins from a little trace of environmentalism. It is thus recallable that the concern for the impact on human life of problems such as air and water pollution, otherwise environment, dates to at least Roman times. (E. Britannica). In such light, Nwosu *et al* (2022:47), opine that environmental pollution on a great scale emphasizes or showcases the issue of human behaviour as it connects industrialism. Perhaps in line with the allegation that, the earth is in a climate crisis due to human activity of pollution, deforestation, oil drilling, species and biodiversity loss and fracking as culprits. (Gordley-Smith and Hackett, 2023:3). Environmental movements arose in the late 19th century, for primary protection concerns and the health consequences of pollution during the Industrial Revolution. Many early environmentalists believed that government rather than the market should be charged with protecting the environment. (E. Britannica). Industrialism therefore is seriously connected herewith its matters arising not only hanging on the government but instead, likely an all-man concern due to its environmental hazards. In the words of Ekeke and Nwosu (2023:81) to understand what this industrialization is, it becomes pertinent to be careful in a strong advocacy against any potential bias.

Industrialization is defined by Merriam-Webster's dictionary as; to industrialize or to make industrial an agricultural region to become industrial and it has a lot of good things with it. Today's modernity culture convinces all at least on the conscious level that humans and societies are now in an age of industrialism. More so, most people imagine it that industrialization is the only way out of the global economic difficulties. Industrialization with its technological components (*e.g.*, the mechanization of labour and the reliance upon inanimate sources of energy), the process of industrialization has encouraged profound social developments. People from different parts and backgrounds are brought together into socializing industrial environments as co-workers or bosses as the case may require. Again, the freeing of the labourer from old-fashioned and customary obligations has created a free market in labour, "with a pivotal role for a specific social type, the entrepreneur." (E. Britannica). Again, cities draw large numbers of people off the rural, massing workers in the new industrial towns and factories otherwise urbanization.

Particularly, the help of machines has been enhanced due to industrialization. This no doubt is a boost to more scientific and technological inventions. Advances in mass production could not be made without the development of the machine-tool industry. The fabrication of machinery that could make machines remains applaud-able. Their evolution into industrial machine tools capable of cutting and shaping hard metals to precise tolerances was brought about by a series of 19th-century innovators, first in Britain and later in the United States. With precision equipment, large numbers of identical parts could be produced by a small workforce at low costs.

How or why some agrarian societies have evolved into industrial states is not always fully understood added to industrialism's negative effect on species and human culture up to their

extinction. Conversely, the Soviet Union, for instance, industrialized largely on the basis of forced labour against an example of other states, notably Denmark and New Zealand that industrialized primarily by commercializing and mechanizing agriculture. (E. Britannica). Unfortunately urban-industrial life offers unprecedented opportunities for individual mobility and personal freedom, yet, it can exact high social and psychological tolls. Such, various observers as Karl Marx and Émile Durkheim cited the “alienation” and “anomie” of individual workers faced by seemingly meaningless tasks and rapidly altering goals. (E. Britannica). The fragmentation of the extended family and community tended to isolate individuals and to countervail traditional values. By the very mechanism of growth, industrialism appears to create a new strain of poverty, whose victims for a variety of reasons are unable to compete according to the rules of the industrial order. In some industrialized nations invariably, such developments as automated technology could be like “attitudes of awe and humility,” which may be essential if humans are to be in harmony with both the environment and even industrialism. (Nwosu *et al*, 2022:67). From the foregoing, this research thinks that apart from direct socio-economic gains, the perspective of relationship between society and environment has to matter to humanity including proponents of industrialization. A cogent reason amongst others being that the impact of industrialization in communities within the Ogoni of Niger Delta area of Nigeria, involves gas flaring and oil spillage. Indigenes of such communities at some point would protest such ugly situations which affects fish and plants and farms. Invariably, one may no longer wait upon a soothsayer to know that different classes of life are so endangered by industrialization. It is believable that, flaring of associated gas has long been a practice connected with oil production as approximately 10 percent of world annual gas production was lost at the wellhead by this procedure recently. (E. Britannica). Notably, Middle Eastern and African oil-producing countries have flared the most gas because the remote location of many oil wells makes the recovery of gas expensive.

Another pathetic situation capable of species and cultural extinction is industrialism’s noise and air pollution. It is undeniable that pollution has accompanied mankind ever since groups of people first congregated and remained for a long time in any one place. Yet, this form of pollution that is characteristic of industrial societies is not only annoying but has serious health implications. Illustrating is that steady exposure to noise in excess can cause permanent loss of hearing. In addition to causing loss of hearing, there is some evidence that noise can produce other deleterious effects on human health and on work performance. Sounds of jet planes and excessively loud music either of ceremony, church or crusade bands, macadamization of roads and more, can drive this fact home the more. One more aspect is the air pollution. Air pollution involves the release into the atmosphere of gases, finely divided solids, or finely dispersed liquid aerosols at rates that exceed the capacity of the atmosphere to dissipate them or to dispose of them through incorporation into solid or liquid layers of the biosphere. Air pollution results from a variety of causes, not all of which are within human control. Dust storms in desert areas and smoke from forest and grass fires contribute to chemical and particulate pollution of the air. Probably the most important natural source of air pollution is volcanic activity, which at times pours great amounts of ash and toxic fumes into the atmosphere. The chemical aspect of pollution is detrimental to species. There are serious chemical pollutants like the chlorinated hydrocarbon pesticides, such as DDT, aldrin and dieldrin; the polychlorinated biphenyls (PCBs), used in a variety of industrial processes and in the manufacture of many kinds of materials; and such metals as mercury, lead, cadmium, arsenic, and beryllium. (E. Britannica). Apart from degrading natural processes, all of these substances persist in the environment and are toxic to

life generally. Furthermore, the persistent pesticides have created serious ecological problems. As they move through successively higher organisms in food chains, they accumulate in increasingly concentrated forms at each level, causing damaging effects to the predators at the end of the chains. Among the species known to be adversely affected are such meat-eating birds as falcons, hawks, and eagles and such fish-eating birds as pelicans, petrels, cormorants, and egrets.

Species

The understanding that no creature is independent has continued to heighten eco-theology and biodiversity conversations (Odey *et al*, 2023:1), probably as humans and their environment constitute the bulk of global history. The living and not only mankind (including species) is at the center of the environment issues for which contemporary thoughts have brought a renewed consciousness to curb or avert the threats posed to the ecosystem by reckless human behaviours. This human behaviour includes scientific discoveries, technology or industrialism, seem to suggest that natural phenomena are in a complex state of relationship of influencing and constantly being influenced. Apart from meaning an individual or a kind belonging to a biological organism, species as rendered in this research includes both humans and other lives. Especially species are capable of interbreeding as a biological classification comprising related organisms. This particular character of species makes extinction an issue and as well researchable.

Cultural Extinction

A true and full study of culture belongs to anthropology (Etuk2002:19), which is the study of human beings not excluding their features and their relationship to their environment. Hence, before embarking on ‘cultural extinction’ as a key idea in this research, it is apt to lightly understand the word, culture, as it could define and determine how people think, feel and act to the point of influencing worldviews.

Culture can be looked at as, ‘the act of developing the intellectual and moral faculties especially by education including expert care and training. However, Merriam-Webster’s Dictionary and Thesaurus (2010), defines culture as, the characteristic feature of everyday existence (as diversions or a way of life, shared by people in a place or time). It is a set of shared attitudes, values, goals, and practices that characterizes an institution or organization. Aligning with Lewis (1982), Etuk (2002) and Ejizu (2007) in Nwosu (2018:274), further exposes parts of the word, culture. Nonetheless, for the interest of this research which brings up the idea of extinction of culture and even of all the living things culture cultivates and emphasizes variety of meanings and implications. Wherever a community is found, we find more than an association of individuals, each pursuing own life and possessing ideas, a social pattern, a coherent body of customs and ideas, an integrated unity or system in which each element has a definite function in relation to the whole. The web of thought and action holds societies together. This interior force is as real and authoritative as the external environment. This now can easily cover religion and morality of a people comfortably and serve as source of account for why such a group attach importance wherever it is so tenaciously placed. How then the extinction of culture becomes a concern remains researchable, especially not limited to only humans but extended to species.

There are times when cultures may be weakened or destroyed. Probably, under such conditions culture fizzles off undermining the fact that it maintains, enhances, or builds up and strengthens a life. This links up here again with species extinction and one would recall that, in biology, it is the dying out or termination of a race or species. The doomed species might not have been able to adapt to the changed environment and thus perished without descendants; or it may have adapted but, in the process, may have evolved into a distinctly new species. Illustrating with the effect of humans on the environment, draws attention to hunting, collecting, and habitat destruction, which has become a significant factor in plant and animal extinctions. Extinction occurs when a species can no longer reproduce at replacement levels. Most extinctions are thought to have resulted from environmental changes that affected the species in either of two ways. An instance is recallable of the Cretaceous Period that came to an abrupt end about 65.5 million years ago with a massive extinction event and some researchers have postulated that extinction events are cyclic, occurring approximately every 26 million years. (E. Britannica). Dinosaurs, ammonites and most belemnites (both related to squid and nautilus), rudist clams, and toothed birds all became extinct. The cause of this one of the world's great extinction events, is still hotly debated. Many biological, climatic, and extraterrestrial factors have been put forward to explain it. The asteroid theory has promoted renewed interest in extinctions in general.

Arguably, even if extinction appears an ongoing feature of the Earth's flora and fauna (the vast majority of species ever to have lived are extinct), we cannot study all in one gulp. Consequently this work tries to search into extinctions arising from industrialization as to suggest remedies. Hence the gap of 26 million years is not easy to come by but that extinction causable by industrialism may be more frequent and should therefore be attacked for want of solutions.

Industrialization and Effect on Species and Cultural Extinction

This crucial part of our discussion is a kind of domestication of the Nigeria Niger Delta, precisely the Ogoni experience as background, and as such it demands a light historical survey. Consequently, a light peruse through some part of United Nation Environmental Programme (UNEP) report. A slight clarification recalls UNEP as an organization established in 1972 to guide and coordinate environmental activities within the United Nations (UN) system. UNEP promotes international cooperation on environmental issues, provides guidance to United Nations Organizations, and, through its scientific advisory groups, encourages the international scientific community to participate in formulating policy for many of the UN's environmental projects. Headquartered in Nairobi, Kenya, the organization also has encouraged participation by the private sector to promote the sustainable use of the world's natural resources. (E. Britannica). However, this research is not part of UNEP's Earth-watch, an international monitoring system designed to facilitate the exchange of environmental information among governments. It is rather, an academic research on the fundamental environmental challenges posed by oil exploration in the Niger Delta of Nigeria, and a seeming active ingredient and clarification of industrialization effect on species and culture. The Ogoni in Niger Delta as pointer here is thus lightly reflected for onward progression into how industrialization can extinct species and culture. From human geography for instance, it is reflective that since 1945 human geography has contained five main divisions. The first four, economic, social, political and cultural, reflect both the main areas of contemporary life and the social science disciplines with which

geographers interact. This links physical and historical geography where our discourse also has a big point to clarify. Interestingly, for some time now there seems a reorientation of physical geography to the study of systems of natural environmental processes, of which there have been major changes in both research and teaching. Much research now involves large, tightly focused collaborative programs of careful measurement, modeling, and analysis. Contextually again, at the end, any logical mind could conclude on complete or partial extinction at least of some cardinal cultures like religion, language and other human behaviours from Niger Delta Nigeria experience. Understandably, the people is the center of both species and culture and once humankind is exterminated, there exists no culture or the like. Reflecting the Ogoni through the Niger Delta to the mind of Kpagane (2013:196),

Is the product of both fluvial and marine sediment build-up since the upper Cretaceous period, some 50 million years ago. Over time, up to 12,000 meters of shallow marine sediments and deltaic sediments have accumulated, contributed mainly by the Niger River and its tributaries. The main upper geological layers consist of Benin Formation, Agbada Formation and Akata Formation. The Benin Formation is comprised of multiple layers of clay, sand, conglomerate, peat and/or lignite, all of variable thickness and texture and covered by overburden soil. Clay beds are discontinuous and groundwater is, therefore, present both localized aquifers or in hydraulically interconnected aquifers. The ground characteristics are consistent with deltaic environments.

From this background it becomes reflective that this part of the globe presents to the reading public a call to duty and a sense of urgency especially in the 21st century globalized modernity. This should be against economic exploitation, environmental pollution and degradation probably as a result of oil exploration and in the words of Kpagane (2013), “exploitation of resources by Shell Oil Development Company Limited,” etc., and particularly as it appertains to extinction of culture.

Oil exploration in Ogoniland of Niger Delta in the South-South geopolitical zone of Nigeria began in 1950s. The operations were handled by shell Petroleum Development Company (Nigeria) Limited (SPDC) a joint venture between the Nigerian National Petroleum Company (NNPC), Shell International, Elf and Agip. Oil exploration and production have impacts on the natural environment long before any oil is actually produced. Kpagane, maintains that there are complex, multi-faceted and in different phases including: land survey, land clearance for seismic lines, establishment of seismic and drilling camps, site preparation, infrastructure construction, drilling for oil (even when the effort is unsuccessful) and development of transportation infrastructure (184). Unfortunately, once a facility begins operation, other issues come up, such as, spills during oil production and disposal of water (often salty water called “produced water”) and flaring of gas (produced gas) generated alongside the oil.

Apart from environmental consequences, oil exploration is also associated with social consequences. According to sources, the situation did not improve even when Nigeria gained independence. Environmental incidents, such as spills and uncontrolled flares, continued to occur in the area and responses were slow and inadequate (185). A move of cry-for-help for amelioration of the environmental consequences of oil production leads to the foundation of people oriented liberation movements like, the Movement for The Survival of the Ogoni People (MOSOP) and more across some affected areas.

It may not be out of point to say that the social consequences have included death tolls either from road or other accidents, to inhalation of gases, and impotence in young males and females thereby a resultant drastic reduction in human fertility and population growth. Accordingly, “in 2006, UNEP received an official invitation from the federal government of Nigeria to conduct a comprehensive assessment of the affected areas and the public health ill-effects of oil contamination in affected areas. (www.unep.org/nigeria). Kpagane, adds that the project was approved in 2007 but fieldwork started late 2009 and the laboratory analysis delayed till 2011; the study resulted in tens of thousands of analyses (189). There is another part of industrialism’s social consequences relating to the national judicial system operation. The long history of environmental problems as illustrate-able with oil spills gives the Nigerian judicial system a concern. The judiciary thereto deals with penalties and punishments for environmental and oil-related offences and crimes; as well as with compensation claims for victims. On the other hand, petroleum hydrocarbons have oil exploration, production and processing as prime source although there are other sources like, vehicle and generator emissions, burning of bush and trash, food processing and use of cooking fuels, and many more. It is known however that the chemical properties of hydrocarbons results in toxicity and smothering apart from health hazards.

Industrialization’ Oil Area and Interaction with Neighbouring Communities

The industrial area’s relationship or interaction with nearby regions or communities is of a serious concern. Such neighbourhoods may only get the negative effects of industrialism if no proper care is taken. For such reason and more, this study feels it appropriate to treat it as sub-head. Pollution of one community spreads across borders and the problem of such circular sweep cannot be solved in isolation of one from another. These issues are particularly significant with regard to pollution in creeks. Oil pollution, once it reaches the creeks, can move back and forth with the tides (203). Furthermore, the area’s groundwater cannot be overlooked. For instance, Ogoniland’s aquifers are a crucial resource upon which the region’s entire population depends, also the Rivers State region is drained by the Bonny and New Calabar river system and numerous associated creeks and streams as Kpagane would recall. The vegetation zones include, beach ridge, saltwater and freshwater. There is the mangroves on the tidal flats and by swamps with trees, palms and shrubs also red mangrove (*Rhizophora mangle*) not leaving forest tree species. Generally, the Niger River floodplains are covered by rainforest trees, oil palm, raffia palms, shrubs, lianas, ferns and floating grasses and reeds. It is remarkable that mangroves provide variety of ecosystem services and products, fishing grounds, timber, mulching, animals, stakes for yam cultivation, medicinal plants and vegetables as well as fruits and snails. Sacred forests with shrines are also admirably visible.

Summarily, industrialization has its impact on soil from shallow reservoirs to accidental spillage on grounds as in oil, as it alters soil’s physical and chemical properties which affects health of organisms via direct contact, ingestion or inhalation. Again, soil also acts as a residual pollution, affecting groundwater or air within some period of time. The same is on water as well as vegetation, a complete life-cycle can be destroyed. From that it extends to aquatic and terrestrial wildlife. “Dissolved or emulsified oil in the water column can contaminate plankton, algae, fish eggs and invertebrate larvae. Physical contact with oil destroys insulation properties of fur and feathers; heavily oiled birds can lose ability to fly and can even drown in water. Yet on people, petroleum hydrocarbons can enter human bodies by breath of air, bath, eating fish,

drinking water, and even the ear or through touching soil so contaminated. Dermal exposure can lead to skin redness, oedema, dermatitis, rashes and blisters, inhalation exposure can also lead to watery and itchy eyes, coughing, throat irritation, shortness of breath, headache and confusion apart from nausea and diarrhea (210).

Conclusion

Scientific knowledge is constantly increasing and changing what is known about the way Earth works, and knowledge of global change and its effects on species is expanding particularly quickly. Since the turn of the 21st century, the relationship between changes to Earth's physics and chemistry and biodiversity is being clarified significantly. Although the precise effects of global change on species extinction rates are still uncertain, they almost certainly are large. Likely for which Lewis (1982:3) opines that scientists accept that human beings evolved from ape-like ancestors and disagree about details of the progressive changes and dynamic causes underlying evolution. Relating evolution theory to industrialization seems a bit digressional since it is that industrialism's mode of operation and resultant effect on species and culture is apparently direct and clear. Therefore, through the Ogoni in Niger Delta of Nigeria as a veritable lens, 'industrialization, species and cultural extinction,' as research, enquired into human-environmental interaction, especially as concerns the biotic components. Oil exploration featured prominently to reveal its devastating effect on soil's altered physical and chemical properties, which affects health of organisms or species to extinction level. Furthered to aquatic and terrestrial wildlife, particularly as emulsified oil in even the water column contaminates plankton, algae, fish eggs and invertebrate larvae, not excluding oiled birds that lose ability to fly and destruction of fur whose insulation properties are affected. To a higher pedestrian, petroleum hydrocarbons deal dastardly with humans who are higher species or referable as primates. Thus, people serve the destructive experimentation where petroleum hydrocarbons can enter human bodies by breath of air, bath, eating fish, drinking water, and even the ear or through touching soil so contaminated. Dermal exposure can lead to skin redness, oedema, dermatitis, rashes and blisters, inhalation exposure can also lead to watery and itchy eyes, coughing, throat irritation, shortness of breath, headache and confusion apart from nausea and diarrhea (210). Industrialization anyway like science and technology has come to stay no matter how its operation devastates species and cultures up to drifting people urban-wards, referable as urbanization and all thereto connected pollutions. After analysis of dominant ideologies of industrialization to check loss of species and even cultural values up to language and religion, not overlooking habitat destruction or pollution, it was recommended that more care be put as technology is harnessed. The understanding that life remains the greatest wealth ever, is advocated to reign in all spheres of industrialism. Truly the human activity of Industrialization as the process of converting to a socioeconomic order in which industry is dominant is not without its revolutionary issues that can be quelled with adequate care and tact. Especially, as modern man in all his diversity, belongs to the most widely distributed single animal species which contributes in the crisis leading to even faunal and floral extinctions as Jorgensen (1972:2) holds.

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