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## THEORETICAL DEVELOPMENTS IN ENVIRONMENTAL SOCIOLOGY: APPLICATION TO DEVELOPING ECONOMIES

**TOPE ONI\***

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### **ABSTRACT**

*This paper addresses theoretical developments in Environmental Sociology, a recent field in the broad discipline of Sociology, from its inception in the 1970s till date, with the aim of examining how the various theoretical paradigms have enhanced our progressive understanding of issues and challenges in the interaction of human society with the environment, and how such issues are perceived, interpreted and managed to enhance human quality of life and sustain a sane and clement ecosystem. A brief reference is made to aspects relating to man's interaction with the environment in the works of classical sociologists, before delving into some detailed discussions of key theoretical paradigms in environmental sociology, which include: the New Ecological Paradigm, The Political Economy Model, the Risk Society Theory, and the Economic Modernisation Theory, and the extent of the application of these theories to the Nigerian situation as a developing economy. The paper also reviews the social constructionism/realism debate that cuts across many of the theoretical models. The nature and areas of empirical works in environmental sociology are briefly mentioned, while the state of environmental discourse in general and environmental sociology in particular is examined in developing nations, with special focus on the Nigerian situation. The paper concludes that much work still needs to be done in the attention given to environmental issues and challenges – in the political, bureaucratic, social and academic worlds of developing nations, and particularly in Nigeria, which must go beyond a focus on the Niger Delta to embrace other equally important environmental challenges in all other parts of the country.*

**Key Words:** *Sociology, Environment, Development, Risk, Theory.*

### **1. INTRODUCTION – ORIGIN & SCOPE OF ENVIRONMENTAL SOCIOLOGY**

Environmental sociology is the sociological study of the interaction between society and the environment. This field of sociology centres on the relationship between society and environment in general, with special emphasis on studying the social factors that cause environmental problems, how various social identities determine the definition and perception of those problems, their societal impacts, and a critical analyses of the efforts to solve

the problems, from sociological perspective and imagination. Regardless of the differences in various theoretical perspectives in environmental sociology, there appears to be considerable congruence among scholars in this field on the broad scope of environmental sociology. It is understood that while most environmental problems have a material reality, these challenges are real principally because of their human, social and existential/ontological definitions, interpretations and implications. The environmental sociologist is also interested in studying the human efforts and processes that social group's device in order to address them through scientific knowledge, collective behaviour, activists' efforts, strategic planning and systematic implementation. Essentially, environmental sociologists emphasize that environmental challenges must generally be understood through the channels of social processes; in light of the interpretative impact they may have on human beings and other agents in the ecosystem.

## 2. REVIEW OF LITERATURE

Dunlap and Catton (1979) shed light on the historical development of environmental sociology. According to them, environmental sociology emerged in the 1970s in the United States, driven by sociological interest in the growth of environmental awareness and activism and also through the recognition of the societal relevance of the energy crisis and a growing number of ecological problems. The field later spread to Europe, where antinuclear protests and Green politics were becoming major areas of focus, and gradually to much of the rest of the world. It can be safely affirmed that in four decades, environmental sociology has evolved from a small, tangential field of study to a burgeoning mainstream area of study and intellectual discourse. At least in Western countries, many and perhaps a majority of sociology departments in colleges and universities now offer courses in the field, while many graduate programs make it areas of concentrations and specialization.

Hannigan (2006) firmly agrees with the position that the Sociology of the Environment has developed profound, diverse and rich theoretical perspectives in its four decades of existence. Buttel et al (2002) summarize the issues that are of academic interest to environmental sociologists thus: the nature of environmental social movements; states, politics and environmental policy formation; environmental attitudes, beliefs and values; the relationships between consumption and production institutions; the reciprocal impacts of societies and environments; the role of technology in social and environmental change; and the significance of 'the global' in terms of 'environmental scale' and social institutions.

While classical Sociologists did not directly address environmental issues and social facts, it is generally considered that their works were a source of inspiration for contemporary sociologists seeking to engage with

environmental topics, particularly in the works of Herbert Spencer, Emile Durkheim, Max Weber and Karl Marx. To a certain extent each of these sociological pioneers had something significant to say about nature and society, although this was often more implied than direct; environmental issues were clearly not their main focus of study. Some scholars deliberately adopt the strategy of extracting 'ecological' insights from the work of the classic thinkers which they viewed as having been overlooked or misunderstood in the past. Others choose to extract concepts and ideas from the collected works of the sociological pioneers, even if these were not originally used in an environmental context, and apply them to the current environmental crisis. The discourses that were closest to environmental issues in the works of these four founding fathers were varied, some which are examined here.

Relationship with the environment is implied in Herbert Spencer's concepts of organic analogy of society, the concepts of Social Darwinism and the survival of the fittest, as man seeks to survive and thrive in the physical environment. Emile Durkheim (1947) describes the evolution of modern societies from a state of mechanical solidarity, by which social solidarity results from shared cultural values, to an organic solidarity, where the social bond is a function of interdependence, arising out of an increasingly complex division of labour. Catton (2002) surmises that Durkheim's theory was an attempt to devise a solution to what is essentially an ecological crisis of rising population associated with scarce resources. As societies became larger and increased in density, it would have been practically impossible and a great disaster for everyone to have continued to engage in agriculture, which was the main occupation in pre-industrial societies. Increasingly, occupational specialization became a natural response to growth in population or moral density. Durkheim however did not pursue this discussion to its logical conclusion, which should have made it obvious to him that population growth would result in stiffer competition and increasing pressure on the ecosystem and the environment, a process that could escalate to a crisis point. It is clear why Emile Durkheim was unlikely to give environmental issues a prime of place in his discourse. This position is in the light of his deliberate decision to elevate social facts over 'facts of a lower order', such as physical, psychological, biological or environmental.

Murphy (1994) extracted what he considered as environmentally relevant issues from Weber's concept of rationalisation. In Weber's work, rationalisation is composed of several dynamic institutional components, such as radical growth in scientific and technical knowledge. Increased scientific and technical knowledge brings with it a fresh orientation in which nature exists only to be mastered and manipulated by humans. An expanding capitalist market economy leaves little room for anything beyond the calculating, self-interested pursuit of market domination. Industry and government are said to be controlled by a bureaucratic apparatus, the purpose of which is to attain a high level of material efficiency. The legal system is also said to operate like a technically rational

machine. Together, these components promote a pervasive logic whereby material efficiency reigns supreme, sometimes superseding a sensible choice of goals or alternatives. In Weberian parlance, this causes formal rationality to overwhelm substantive rationality. Formal rationality thus dictates that the most efficient action is to maximally explore the resources in the forest through agriculture and logging, even if this is in no way substantively rational from an ecological point of view (Murphy 1994). Murphy submits that the application of formal rationality, when applied to the case of nature, results in ecological irrationality. It is manifested in a wide range of destructive consequences from sensational technological disasters such as nuclear accidents to routine pollution events such as industrial dumping into urban storm sewers.

Among the early Sociologists, Karl Marx's work seems to have provoked the most extensive response from present-day environmental social analysts. Marx and his early collaborator Friedrich Engels were only marginally concerned with environmental degradation but their analysis of social structure and social change has become the starting point for several remarkable contemporary theories of the environment. As Hannigan (2006) notes, Marx and Engels believed that social conflict between the two principal classes in society, that is the bourgeoisie and the proletariat, not only alienates ordinary people from their jobs but also leads to their estrangement from nature itself. They averred that this phenomenon is most evident in 'capitalist agriculture' which puts a quick profit from the land ahead of the welfare of both humans and the soil. As the industrial revolution proceeded through the eighteenth and nineteenth centuries, rural workers were removed from the land and driven into crowded, polluted cities while the soil itself was drained of its vitality. In short, in orthodox Marxism, a single factor, capitalism, was held responsible for a wide range of social ills from overpopulation and resource depletion to the alienation of people from the natural world with which they were once united. Neo-marxists have elaborately developed the classical works of Marx in relation to the environment, and this is given a fairly detailed attention in the Political Economy paradigm of Environmental Sociology, discussed in a later section of this paper.

In sum, the extremely tangential nature of environmental issues in classical works have been explicated within what is called the Human Exemptionalism Paradigm. This view was believed to have been shaped by the leading Western worldview of the early days of Sociology and the desire for Sociology to establish itself as an independent discipline against the then popular racist-biological environmental determinism where environment was like an all in all factor. Within this paradigm, human dominance over nature was felt to be justified by the uniqueness of culture, which was considered to be more adaptable than biological traits. Human Exemptionalism Paradigm was also taken to have stressed the capacity of man to accumulate and innovate, making it capable of solving all natural problems, irrespective of environmental factors. Human beings were not conceived of as

governed by natural conditions; rather, they were felt to have complete control of their own destiny. Any potential limitation posed by the natural world was felt to be surpassed using human ingenuity.

In the 1970s, environmental sociology scholars Riley Dunlap and William R. Catton, Jr., among others, began recognizing the limits of what would be termed the Human Exemptionalism Paradigm. Catton and Dunlap (1978) suggested a new perspective that took environmental variables into full account. They coined a new theoretical outlook for Sociology, the New Ecological Paradigm (NEP), with assumptions contrary to HEP.

The New Ecological Paradigm recognizes the innovative capacity of humans, but says that humans are still ecologically interdependent as with other species. The NEP notes the power of social and cultural forces but does not subscribe to an exclusive social determinism. Rather, humans are considered to be impacted by prevailing conditions in his environment and ecosystems. The new ecological paradigm moves us to understand that the earth has a finite level of natural resources and waste repositories. Thus, the biophysical environment can impose constraints on human activity in various ways. With the emergence of Environmental Sociology, sociologists were prepared to join other intellectuals in studying the facts of environmental crisis and changing conditions in the ecosystem, through the lens of sociological imagination.

### 3. THEORETICAL SCHOOLS IN ENVIRONMENTAL SOCIOLOGY

In accounting for the causes of widespread environmental destruction, two primary approaches stood out at the early stage of environmental sociology: the ecological explanation as embodied in Catton and Dunlap's model of 'competing environmental functions', and the political economy explanation as found in Alan Schnaiberg's concepts of the 'societal-environmental dialectic' and the 'treadmill of production'.

- **The New Ecological Model**

The new ecological perspective of environmental destruction in Environmental Sociology is probably best described in Catton and Dunlap's 'three competing functions of the environment'. The model propounded by Catton and Dunlap (1978) specifies three general functions that the environment serves for human beings: supply depot, living space and waste repository. Used as a supply depot, the environment is a source of renewable and non-renewable natural resources, such as air, water, forests, and fossil fuels that are essential for living. Overuse of these resources results in their shortages or scarcities. Living space or habitat provides housing, transportation systems and other essentials of daily life. Overuse of this function results in overcrowding, congestion and the destruction of habitats for other species. With the waste repository function, the environment serves as a 'sink' for



garbage, sewage, industrial pollution and other byproducts of man's economic and existential activities. Humans with time exceed the ability of the ecosystems to absorb wastes, and this results in health problems arising from toxic wastes and other ecosystem disruptions.

Besides, each of these functions competes for space, often encroaching upon the others. Catton and Dunlap provided an illustration of how this could happen. For instance, placing a garbage landfill in a rural location near to a city would both make that site unsuitable as a living space and destroy the ability of the land to function as a supply depot for food. Similarly, urbanization reduces the amount of arable land that can be put into productive use, while intensive logging threatens the living space of aboriginal peoples. They submit that in recent years, the overlap, and therefore conflict, among these three competing functions of the environment has grown considerably. Newer problems such as global warming are said to stem from competition among all three functions simultaneously. Furthermore, conflicts between functions at the level of regional ecosystems now have implications for the global environment.

The competing functions model of Catton and Dunlap was intellectually fascinating when it was introduced in environmental sociology. First, it extends human ecology beyond an exclusive concern with living space, which used to be the central focus of urban ecology, to the environmentally relevant functions of supply and waste disposal. In addition, it incorporates a time dimension: both the absolute size and the area of overlap of these functions are said to have increased since the year 1900.

Critics have however attacked the 'competing functions of the environment' model of Catton and Dunlap for not giving sufficient emphasis to the active human element in defining and managing environmental crisis. Beck (1992) submits that explanations such as this run the risk of descending into a discussion of nature without people, without consciously addressing the issues of active social and cultural dimension of the definition of ecological problems and their possible solutions. The model of Catton and Dunlap looks like a typical work of environmental analysis in the physical sciences, rather than a sociological discourse.

This lapse 'ipso facto' makes the model to be incapable of advancing ways by which the undesirable situation may be changed, through a positive alteration of the prevailing values and power relations that might have encouraged environmental degradation and crisis in the first place.



- **Political economy Model**

Within environmental sociology, probably the most influential explanation of the relationship between capitalism, the state and the environment is found in the work of Schnaiberg (1980). Drawing on strands of both Marxist political economy and neo-weberian sociology, Schnaiberg outlines the nature and genesis of the contradictory relations between economic expansion and environmental disruption. Schnaiberg has depicted the political economy of environmental problems and policies as being organised within the structure of modern industrial society, which he labels the treadmill of production. This refers to the inherent need of the capitalist economic system to continually increase production and maximize profit by creating consumer demand for new products, even where this means expanding the ecosystem to the point where it exceeds its physical limits to growth or its 'carrying capacity'. Schnaiberg (1980) notes that one particularly important tool in expanding this demand is advertising, which convinces people to buy new products as much for reasons of fancy and lifestyle gratification as for practical considerations.

Schnaiberg portrays the treadmill of production as a complex self-reinforcing mechanism whereby politicians respond to the environmental fall-out created by capital intensive economic growth by mandating policies that encourage yet further expansion. For example, resource shortages are handled not by reducing consumption or adopting a more modest lifestyle but by opening up new areas to exploitation. Schnaiberg discerned a dialectic tension that arises in advanced industrial societies as a consequence of the conflict between the treadmill of production and demands for environmental protection. He describes this as a clash between 'use values'; for example, the value of preserving existing unique species of plants and animals, and 'exchange values' which characterise the industrial use of natural resources. He suggests that, as environmental protection has emerged as a significant item on the policy agendas of governments, the state must increasingly balance its dual role as a facilitator of capital accumulation and economic growth and its role as environmental regulator and champion.

Novek and Kampen (1992) recognize that, from time to time, the state finds it necessary to engage in a limited degree of environmental intervention in order to stop natural resources from being exploited with abandon and to enhance its legitimacy with the public. Nevertheless, most governments remain wary of running the risk of slowing down the drive towards economic expansion or decelerating the treadmill of production. In the same vein, Redclift (1986) alludes to the contradictory position most governments find themselves within the treadmill of production. They are caught in a contradictory position as both promoter of economic development and as environmental regulator. Governments thus engage themselves in what Redclift calls 'environmental managerialism', in which they attempt to legislate a limited degree of protection sufficient to deflect criticism but

not significant enough to derail the engine of growth nor effectively address the environmental crisis at hand. Most governments only enact environmental policies and procedures that are complex, ambiguous and open to exploitation by the forces of capital production and accumulation, thus reaffirming their commitment to strategies for promoting economic development, regardless of the environmental or human costs. Other left-wing scholars have even been more caustic in linking the dynamics of capitalist development to the rise in environmental destruction. Harvey (1974), the Marxist geographer, accuses capitalist power elites of deliberately creating resource scarcities in order that prices may be kept high. In the same breadth, O'Connor (1991) charge that the goal of capital restructuring in the 1980s and 1990s, which included geographical relocation, plant closures and downsizing, is to increase the exploitation of both the workers and nature.

The treadmill of production explanation has the advantage of locating present environmental problems in the inequities of humanly constructed political and economic systems rather than the abstract conflict of functions proffered by human ecologists. This brings it closer to the orbit of mainstream of sociological theory than the more biophysical approach posited by Catton and Dunlap. It is a model within the neo-Marxist/critical theory milieu, which Buttel (2004) describes as the single most important sociological concept and theory to have emerged within North American environmental sociology, up until that time.

Buttel however identified what he considered as the conceptual weaknesses of the political economy model. He surmises that political economy, especially that with a neo-Marxist leaning, has been somewhat overshadowed in recent decades by other theoretical positions, notably postmodernism and cultural sociology, more so with the fall of most socialist/communist regimes around the world, and the tempering of the orthodox Marxist positions of the few that remain, such as China. Buttel also avers that the treadmill theory has remained somewhat static, not giving adequate cognizance to the fact that a neo-liberal economic eras seems to have developed in Western nations, which has shifted from an exclusive focus on manufacturing, towards new information technologies, financial services and entertainment. Besides, it also shares the same weakness with many of earlier models in that it does not say much about how the situation will be transformed, towards a more congenial system for humanity and for the ecosystem. It is apparent that if the environmentally destructive treadmill of production is to be halted or slowed down, this would not happen as a dialectical, inevitable process. It must be through a deliberate action, which is unlikely to voluntarily happen through the efforts of the state and of the reigning economic powers. This must necessarily involve major and sustained political mobilisation, a process that would be sharply resisted by politicians, government agencies and the corporate powers. This is besides the fact that if shutting down the treadmill of production were at all possible, the people that would be most hurt would be the

poor masses, the interest of whom the neo-marxists are trying to protect, thus throwing up the implicit contradiction of the political economy model in this respect.

Two recent models surfaced in the 1990s to the early part of the new millennium, both of which expect that an environmentally conscious states would emerge, or indeed was already emerging in the Western nations, as the new millennium was dawning. These two models are Beck's risk society thesis' and Mol and Spaargen's ecological modernization model.

- **Risk Society Theory**

Though modernization is undeniably associated with relative prosperity, individualism and human conquest, there is a sense in which Ulrich Beck is critical of modernity and its attendant risks. Beck (1992) opines that modern society, particularly Western nations have moved from an 'industrial' or 'class' society in which the central issue is how socially produced wealth can be distributed in a socially unequal way to reduce such side effects as poverty and hunger, to a risk society in which the risks and hazards produced as part of modernisation, such as pollution and environmental degradation, must be prevented, minimised, and positively managed to reduce their grave deleterious impact on humanity. Beck submits that the risk associated with underdevelopment, such as poverty and hunger are overwhelmingly evident in the lives of the low-class people of the society, while the environmental risk posed by modernization is considered to be more evenly distributed. According to Beck, whereas hunger is hierarchical or class-based, smog and the negative effect of environmental pollution is 'democratic', as it is universally distributed irrespective of race or class. He however admits that there are cases where the two risks overlap, where industrial pollution or the pillaging of natural resources take place in residential areas already inhabited by the poor.

Beck's work has the strength of moving the theoretical discourse in environmental sociology from the human ecology and political economic terrain, whose arguments had become popular and obvious, to the realm of social reflexion. The aim is that environmental crisis would be seen in a new light that makes the issues at stake more universally applicable and thus galvanize positive action towards addressing the emergent crisis. Beck anticipated a post-materialist value which would move state powers to start taking decisive actions towards consistently addressing and ameliorating the environmentally destructive tendencies of human activities in the ecosystem, which risks have become universally shared.

Beck's work has been criticized on different fronts. Bluhdorn (2000) advanced the charge that Beck seems to be undecided whether ecological risks have to be conceptualised as objective empirical realities or as subjective perceptions and social constructions. Beck has also attracted considerable critical heat for his assertion that class-

based rancor over the distribution of goods has abated in favour of new and shifting patterns of coalition and division. This interpretation is flawed, however, in that powerless economic actors at the lowest rung of the material ladder are frequently compelled to support polluting technologies and policies in order to survive. In this vein, Lockie (1997) cited the case of Australian broad-acre farmers who have come to accept chemical-dependent styles of agriculture as rational approaches to environmental management, for the purpose of survival, thus demonstrating that it is possible to be both a 'victim' and a 'perpetrator' at one and the same time. That is, the farmer as perpetrator contributes to global pollution through engaging in chemical-intensive farming practices even as the farmer as victim is exposed to toxic materials that may be the source of chemically-induced illness, ranging from headaches to cancer

Furthermore, Alexander & Smith (1996) and Seippel (2002) surmise that Beck overstates the potential for ecological rationality, ignoring the cultural embeddedness of social interaction, which causes latent resistance to the kind of change that Beck anticipates would occur through reflexive modernisation. There is little reason to expect that a society obsessed with celebrities and shopping will suddenly change direction and start making choices solely on the basis of new, post-materialist values.

- **Ecological modernization**

Spaargaren and Mol (1992) propounded an Ecological Modernisation Theory (EMT), to capture what they saw as an ecological switch of the industrialisation process in a direction that takes into account the maintenance of the existing sustenance base of the environment. Ecological modernization model entertained the possibility of a sustainable development that would overcome erstwhile environmental crisis without leaving the path of modernization. The model is an attempt to push the work of the German writer, Huber into the space of sociological relevance. Huber (1985) had analyzed ecological modernization as a historical phase of modern society. In Huber's scheme, an industrial society develops in three phases: (1) the industrial breakthrough; (2) the construction of industrial society; and (3) the ecological switchover of the industrial system through the process of 'super-industrialisation'. What makes this latter phase possible is a new technology, such as the invention and diffusion of microchip technology.

Spaargaren and Mol's Ecological modernization rejects the 'small is beautiful' principle in favour of large-scale restructuring of production-consumption cycles to be accomplished through the use of new, sophisticated, clean technologies. The main focus of the theory was the economy of Western nations which is to be 'ecologised' through the substitution of microelectronics, gene technology and other 'clean' production processes. Ecological

Modernisation Theory does not view capitalism as inherently ecologically destructive; it indeed suggests that a market economy coupled with technological innovation offers the best hope of solving environmental problems and moving toward a more sustainable future. Mol(2010) further surmises that new forms of collaboration between industry, government, and civil society becomes a process of institutionalized ‘ecological rationality’ driven by science and technology, which would not only temper environmentally harmful decision making, but would also stimulate a ‘green capitalism’ that marries the power of the market with the pursuit of environmental quality.

Simonis (1989) submits that the ecological modernisation of industrial society contains three main strategic elements: a far-reaching conversion of the economy to harmonise it with ecological principles, a reorientation of environmental policy to the ‘prevention principle’ (seeking a better balance between stopping pollution before it happens and cleaning it up later on) and an ecological reorientation of environmental policy, especially by substituting statistical probability for ‘prove-beyond-a-doubt’ causality in legal suits against polluters.

Sutton (2004) avers that ecological modernisation thinkers are to be commended for attempting to stake out a reasoned position between ‘catastrophic’ environmentalists who preach that nothing less than de-industrialisation would suffice in saving the Earth from an ecological Armageddon and exploitative capitalist apologists who prefer a business-as-usual approach.

In evaluating Ecological Modernisation Theory, Foster (2012) observes that the model became popular in both academic and policy circles in Western Nations, partly because it sees the capitalist economic system as friend rather than foe of environmental progress, a position that would sooth the nerves of powerful economic and state interests in an era of hegemonic free-market ideology , and partly because it embodies optimistic projections tackles the pessimistic views of both the political economy and human ecology perspectives. Much of Western nations have consequently entertained the model as a workable approach that holds the possibility of achieving significant change in the current economic system. Based on evidence from Northern European nations, Ecological Modernisation Theory appeared to offer a welcome alternative to dominant perspectives in the field.

The model has however been criticized for not giving sufficient consideration to the social and political barriers that are likely to be faced in trying to implement their touted strategies, especially in countries other than Germany and the Netherlands where the environment has been a major priority. Ecological modernization perspective has also been attacked for exhibiting an exaggerated sense of technological optimism. They have assumed that all that is needed to achieve environmental sanity is to fast-forward from the polluting industrial

society of the past to the new super-industrialised era of the future. Mahon (1985) had noted much earlier that the silicon chip revolution, which is the basis of the super-industrialisation era, is by no means environmentally neutral, as the theory of ecological modernization would later imply. Also, we are reminded that the nuclear power was also touted as a ‘clean’ technology until its more undesirable features became known.

Spaargaren and Mol have further been accused of saying little in their original theory about the power relations that characterize environmental processes, assuming that somehow good sense must automatically triumph, to usher in the new environmental-friendly economic/industrial era. Sustainability, the guiding concept behind ecological modernisation, is as much a political–economic dimension as an ecological one: what can be sustained is only what political and social forces in a particular historical alignment define as acceptable. Jorgenson and Clark (2012) have submitted that their flaunted ‘success stories’ were indeed selective and that there are other data that have resulted in contrary conclusions. As a wrap up, whether one regards environmental modernisation as visionary or deluded is ultimately a measure of one’s degree of faith in gradualism as against the necessity and possibility of more radical solutions.

- **The Constructionism/Realism Debate**

One aspect of hot controversy in environmental sociology arises from the disagreement as to whether environmental crisis are a given, being objectively discernible, or whether they are issues of social definition and construction.

For the social constructionist, attention was focused explicitly on the ‘social construction’ of environmental problems. Social constructionists make reference to the frequently contested nature of environmental problems, and the implications of competing interpretations of the sources, impacts, and solutions of the problems. The realists on the other hand accused social constructionism of perverting the force of sociological understanding and ignoring the ‘reality’ of environmental crisis. For example, as Soule & Lease (1995) have noted, Michael Soulé, a known conservation biologist, and his co-author, have condemned social constructionism as an academic ‘fad’ whose rhetoric justifies further degradation of the ecosystem for the sake of economic development’ and whose relativism can be just as destructive to nature as bulldozers and chainsaws. In the same vein, environmental ethicist Crist (2004) places constructionist analyses of nature in ‘the comfort zone’ of zestless agnosticism and non-committal meta-discourse where it is vainly striving to interpret the world at an hour that is pressingly calling for us to change it.

Social constructionists have tried to restate their position, thus apparently bringing them and the realists closer to each other. Hannigan (2005), an unabashed social constructionist, maintains that social constructionism has been greatly misrepresented. What constructionists are actually saying, according to Hannigan, is that we need to look more closely at the social, political and cultural processes by which certain environmental conditions are defined as unacceptably risky, and therefore, contributory to the creation of a perceived 'state of crisis'. As Thompson (1991) has also noted, environmental debates reflect the existence not just of an absence of certainty but rather of contradictory certainties: several divergent and mutually irreconcilable sets of convictions both about the difficulties we face and the available solutions.

Constructionists argue that bestowing absolute certainty solely on the basis of a scientific head count is surely perilous. After all, scientific consensus once dictated that the Earth was flat and that the primary source of disease was 'vapours'. Thus, while not denying the validity of concern over pollution, energy shortages and runaway technology, social constructionists nonetheless insist that the central task ahead for environmental sociologists is not simply to document these problems but to demonstrate that they are the products of a dynamic social process of definition, negotiation and legitimation. As Yearley (1992) observes, demonstrating that an environmental problem has been socially constructed is not to undermine and debunk it, since 'both valid and invalid social problem claims have to be constructed'. Social constructionists maintain that just because something is socially interpreted does not mean it is unreal. Pollution does cause illness, species do become extinct, ecosystems cannot absorb stress indefinitely, tropical forests are disappearing. But people can make very different things of these phenomena and – especially – their interconnections, providing fertile ground political dispute and academic debate. In short, social constructionism does not deny the considerable powers of nature or the reality of environmental crisis. Rather, it asserts that the magnitude and manner of this environmental impact is open to various human constructions.

While the social constructionism/realism debate is likely to continue, the clarifications of the social constructionist position seems to be gradually bridging the gap and lessening the heat of the debate between the two theoretical poles. One is of the opinion that given the nature of sociological imagination, social constructionism, as clarified by Hannigan and others in the school, is likely to continue to thrive within the sociology discipline, while many natural scientists and social action groups will stick to the realist end of the debate.



- **Application of the Theories to Developing Economies**

In our view, three of the theories appear to be directly applicable to the Nigerian situation – the Political Economy Model, the Risk Society Model and the Ecological Modernization Theory. The Political Economy Model and the Risk Society Model jointly explain the rapacious drive of the capitalist class and the ruling political group to keep pushing the exploitation of the nation's natural resources, particularly its oil and gas reserve, but also to some extent industrial production, without serious consideration for how these destroy the environment, promote class exploitation and increases the poverty level of the low class people. While it is true that the dangers caused by environmental degradation in Nigeria is shared, the common man suffers most, as the destruction of the environment through oil spillage, dumping of industrial waste and erosion, directly destroy their means of livelihood.

The Ecological Modernisation Theory is relevant to the Nigerian situation because no one is advocating that the push towards higher level of industrialization and economic development should stop or be reduced, but rather that our government agencies at all levels and the private sector should construct and implement strategies by which economic modernization and development can be pursued and driven while the safety and sanity of the environment are at the same time ensured. This will not be a simple task, and will require the active support of all environmental stakeholders – government, private sector, NGO, affirmative groups and the low class people who are most affected by the undesirable environmental conditions.

#### **4. EMPIRICAL RESEARCH WORKS IN ENVIRONMENTAL SOCIOLOGY**

Environmental Sociology has not all been about abstract conceptual and theoretical discussions; scholars within the field have also focused on empirical research. Dunlap and Jones (2000) have noted how early work on public opinion evolved into efforts to carefully conceptualize environmental concern. Research interest and activities usually cover such areas as: attitudes and behaviours relating to various dimensions of the environment and associated crisis; environmental concerns among individuals and groups in society, including key demographic predictors of environmental concern, with the goal of developing theoretical models that can predict and explain both the attitudinal and behavioural components of such concern; studies on values, behaviours and structures for managing and responding to environmental emergencies and crises.

Scholars such as Diekmann and Schmidt (1998) and Stern et. al. (1999) have variously contributed to clarifying key demographic predictors of environmental concern such as age, education, and political orientation. There

have also been studies that seek to examine the relative impact of such individual characteristics as income, affluence and values on participation in efforts to confront environmental degradation and crises.

Numerous studies have documented the inequitable manner in which toxic wastes and other environmental hazards are distributed across racial and socioeconomic strata, with minorities and lower socioeconomic levels being disproportionately exposed to them (Mohai et al., 2009). Debates have continued in respect of the extent to which race or class is the crucial factor in determining who is at the receiving end of environmental crisis, and increasingly sophisticated studies have helped clarify the complex interplay between these factors as well as the role of historical factors in influencing contemporary patterns of inequitable exposure (Pais et al., 2014). Hannigan (2002) submits that the increasing methodological sophistication of many practitioners and the ever-growing bodies of data on ecological conditions is yielding unprecedented advances in our understanding of the driving forces and impacts of ecological problems, and the process is bound to continue, as the field gains increasing prominence, eventually extending to developing nations.

## 5. ENVIRONMENTAL WORKS IN NIGERIA AS A DEVELOPING NATION

We are concluding this paper on the throbbing note that Environmental Sociology has been largely underdeveloped in academic institutions of developing nations in general, and in Nigerian higher institutions in particular. A modestly significant volume of works have been done in environmental studies in Nigeria, with concentration on the environmental conditions created in the Niger Delta area, where almost all of the oil exploration in Nigeria is taking place. Akpan(2014) recognizes that environmentalism is the tendency to emphasize the relevance of physical, biological, psychological or cultural environment as factors determining the structure or behaviour of animals, including man. Environmentalism is seen as a level of consciousness or awareness that tends to attribute virtually all human and non-human behaviour to developments in the environment. Alison-Maduekwe(2014) submits that since the discovery of energy resources such as crude oil, natural gas and coal in Nigeria, which have been put into various applications and uses, the exploration and exploitation of these resources have impacted positively on the growth and prosperity of individuals, organisations, and nations, especially in the areas of employment, technology acquisition, capacity building, wealth creation and community development. She however notes that despite their positive contributions, energy resources constitute undeniable sources of environmental pollution and other hazards, particularly where there is weak legislative monitoring and enforcement. In other words, in the absence of adequate legislation, control and management, energy and other resources are capable of bringing serious misfortune to individuals, communities, states, regions and nations.

Akpan(2014) is even more pungent in establishing the link between energy sector and the environment. He notes that the exploitation of energy resources creates employment opportunities, brings about empowerment, stimulates local and national demand and encourages the development and application of relevant technologies. It also strengthens international relations and enhancement of a nation's presence in the global space, particularly through the formation and membership of international economic organisations such as the Organisation of Petroleum Exporting Countries (OPEC). He however warns that energy is not only for good, that it can also be for evil, and that virtually in every continent, traces abound to illustrate that, like some other sectors, the energy sector impacts directly and negatively on the environment. Akpan notes that onshore energy exploitation can lead to deforestation, erosion, poverty and hunger, following destruction of farmlands. It often results in the pollution of the air, sea and land as well as destruction of aquatic life in the environment. Oil spillages often lead to unquantifiable losses, regardless of any attempts to pay monetary compensations. Severe gas flaring also causes acid rain that does not only affect the health of people but also the houses that shelter them.

Bamidele (2007) has given some attention to the environmental problems being created in what he calls 'the back barrier island forests' along the Nigerian coast. According to him, there is gradual degradation of these important ecosystems due to non-sustainable use. These forested islands are being flooded and salt intrusion is becoming a common phenomenon. The greatest loss is attributable to the construction of canals/slots which have been built for access and transportation of oil and gas, which have been continuously extracted from the Niger Delta since the late 1950s. Bamidele makes a strong advocacy for a sustainable resource use in this region, through the conduct of relevant environmental impact assessments before projects are initiated in order to preserve these sensitive ecosystems. He also recommends a restoration approach which would involve backfilling of canals once they have been abandoned by the companies, as well as the use of best available technology such as cluster drilling, to minimize damage to the ecosystem.

Some efforts made by government institutions and policies to address the environmental crises created through exploitation of energy resources in Nigeria have been alluded to. Akpan makes reference to the establishment of various institutions, such as the Niger Delta Development Commission (NDDC) established to formulate policies and guidelines, plan and execute projects and programmes, cause the region to be surveyed, identify factors inhibiting development and tackle ecological and environmental problems among others, submitting that these initiatives have already made some impact. According to him, NDDC is well positioned to make far-reaching impact in salvaging the environment and improving the quality of life of the people, given the massive resources within its control. The Commission is said to receive 15% of the total monthly statutory allocation due to

member states of NDDC from the federation account, three percent of yearly budget of oil firms, fifty percent of monies from the ecological fund, gifts, loans, grants and proceeds from assets, among others. NDDC has ostensibly carried out researches, studies and implemented projects and programmes, in the pursuit of the aims and objectives for its establishment. The main aim is to prevent and manage environmental challenges in the region. Akpan also makes reference to other similar institutions across the nation, set up to carry out functions relating to the enhancement of the lives of people in the oil producing areas and reducing damages to their environments. Such other agencies include: Ministry of Niger Delta Affairs, Ondo State Oil Producing Areas Development Commission, Imo State Oil Producing Areas Development Commission, and the Edo State Oil Producing Areas Development Commission – all of which were established at different times to perform several functions relating to the provision of basic infrastructure to the people and tackling environmental challenges in their areas of jurisdiction. Much hope has also been placed on the impact of the Petroleum Industry Bill, which when passed, is expected to make monumental positive impact in controlling, stemming and addressing the degree of damages done to the environment, as well as enhance technology and skills transfer in the industry and generally augment the quality of life of the people. Unfortunately, the bill has been in its foetus stage for several years now, without being passed and implemented, due to various ethnoregional and political factors.

Aina (1991) had rightly pointed out that environmental crisis is unlikely to be eliminated in a short term. According to him, the inability of man to develop the energy industry in environmentally sustainable manner has resulted in severe environmental degradation and devastating ecological damage of different magnitudes around the world, but is most apparent in developing nations in general and in Nigeria in particular. Environmental neglect is also one of the several negative testimonies of poor and irresponsible political leadership, where powers are sought and wielded by political and bureaucratic elites for personal aggrandizement, rather than for far-reaching and sustainable development that would positively impact the quality of life of the people and enhance present and future sanity of the physical environment.

More work still needs to be done in documenting the extent of damage that exploitation of the energy resources has caused to the environment, and by other economic, industrial and existential activities in Nigeria, such as the location of industries in residential areas, unhealthy and uncontrolled waste disposal and the problem of erosion.

## **6. ADDRESSING OTHER ENVIRONMENTAL CHALLENGES IN NIGERIA**

A big gap that is currently discernible in environmental works, studies, programmes and advocacy in Nigeria is that the major focus has been on environmental degradation in the Niger Delta, to the neglect of other equally

alarming and important environmental challenges in all parts of the country, calling for urgent attention. Although Halidu(2009) made some strong reference to these other environmental challenges, they are yet to receive the dire attention they require at all levels-policy, advocacy, positive action – in Nigeria. Other environmental problems that should receive equally crucial attention in Nigeria are as follow:

***Deforestation resulting from uncontrolled logging:*** In the tropics, the age-old practice of shifting cultivation (“slash-and-burn) still persists. As soil fertility declines after a few years, the farmers move to another portion of land, thus decimating large parcels of land that could have been preserved. Unfortunately, we do not have enough of farmer education and encouragement to massively move them to modern techniques of agriculture. Also, the survival of rural dwellers and urban poor depends on finding enough wood to cook their meals. At present, fuel wood consumption, our forests may soon be converted to savannahs and grassland. Further still, the global demand for tropical timber is increasing daily. High intensity of logging and illegal exploitation of tree species has continued to pose serious threats to the country’s forest resources and the environment.

***Desertification:*** Halidu(2009) notes that Between 50% and 75% of Bauchi, Borno, Gombe, Kano, Jigawa, Katsina, Kebbi, Sokoto, Zamfara and Yobe States are under threats of desertification. These ten states, with a population of about 27 million people, account for about 38% of the country’s total land area. In these areas, population pressure, resulting in overgrazing, over exploitation for fuel wood of marginal lands and aggravated drought due to global warming has accelerated the rate of desertification. Entire villages and major access roads have been buried under sand dunes in the extreme parts of Katsina, Sokoto, Jigawa, Borno and Yobe States.

***Soil Erosion:*** In many parts of Nigeria, people have observed with astonishment that due to flood and erosion, some small rills which were crossed with a single footstep some 30 or 40 years ago are now so large as to expose the foundation of their own houses and causing gorges in their neighbourhoods. Although erosion is one of the most critical environmental problems affecting different parts of the country, it is particularly severe in areas of the country underlain by sandy formations. Classical erosion features are found in the states like Edo, Anambra, Imo and Enugu. The degradation caused by erosion in Nigeria is occurring at an increasing and alarming rate, aggravated by such factors as increased agricultural activities, civil construction works, deforestation, bush burning, over grazing, drainage blockage, poor water management, urbanization and increased population pressure.

**Coastal Erosion:** Most of Nigeria's 853km coastline is prone to coastal erosion. This is of grave ecological concern because a large part of Nigeria's population and economic activities are located within the coastal zone.

**Improper Solid Waste Disposal:** Municipal and industrial pollution is a major environmental problem in Nigeria, as most cities lack proper solid waste management schemes and the monitoring and control of industrial waste is inefficient. Even with its relatively low level of industrialization, industrial waste pollution is a major problem in Nigeria. In many cases, effluents from industrial processes are simply allowed to flow into public drains and rivers where they can percolate into surface or ground water. Solid waste management has gained notoriety in Nigeria today because of its visibility and the embarrassment it has constituted to the image of the nation. Only few state capitals have been able to put in place fairly sustainable urban waste management programmes. It is therefore a common site to find mountains of waste scattered all over our cities for days or even weeks with no apparent effort displayed at getting rid of them, even with the attendant risk of air and ground-water pollution.

**Mining Waste Land:** In many parts of the country mining wastelands have now become very hazardous for people in neighbourhoods where open cast activities have taken place. When mining pits are filled with water from tailings, they become stagnant pools and thus constitute a significant environmental threat as they become breeding grounds for mosquitoes and other pests.

**Environmental Pollution:** Environmental pollution is the release of toxic harmful substances into the environment through natural forces or by man and his resources; these harmful substances are called pollutants. There are four major types of environmental pollution, which include: air pollution, land pollution, water pollution, and noise pollution. Air pollution is a pollution that affects the air around us. Its sources include: burning from vehicle exhaust, coal mining and cement factory, industrial processes such as electric plants that use radioactive substances, burning of fuel in cars, other combustion engines and some industrial processes. Land pollution is the pollution that affects our land. Its sources include: refuse from homes, offices, industries and markets; sewage from homes and offices; chemical waste from industries; and oil drilling or oil spillage. Water pollution is the pollution that affects our water. Its sources include: sewage from city sewage city system; chemical wastes from industries and ships; faeces from humans and animals; oil spillage, and pesticide washed by erosion from farms. Finally, we have noise pollution. Its sources include: noise from factories, thunder noise, aeroplane and car noise, generator noise and noise from loud music from various sources.



All these types of environmental dangers and challenges in Nigeria must be studied more carefully and addressed, as we seek to build enough capacity and mobilization to address them, while private organisations and advocacy groups contribute their major part in the process. The nation must overcome the present tendency of only focusing on environmental problems in the South-South part of the country, perhaps due to pressures caused by militancy and international interventions.

## **7. RECOMMENDATIONS ON BUILDING ENVIRONMENTAL SOCIOLOGY IN DEVELOPING NATIONS**

Having said all these, it is worth being stressed that, as is evident in our discussions so far, environmental sociology goes much further than documenting the extent of environmental damages and efforts being made by various social actors and agencies to address them. It is disheartening that serious works in environmental sociology is yet to assume a noticeable place in Nigeria's academic environment. The relative recency of the emergence of the discipline in Western nations, the lethargy about environmental issues in the political environment, the inclination of the public to ignore this subject except in the Niger Delta, and perhaps the challenge of recruiting skilled and knowledgeable faculty in the field – all provide a probable explanation for the scant attention given to environmental sociology in the higher institutions of Nigeria and other developing economies. However, this situation of neglect should not be allowed to continue. It is expected that sociologists in Nigeria and other African countries will take particular interest in such study areas as: the extent to which environmental crises have actually affected the lives of the people in measurable, specific terms; the effects of ethnoregional and political factors in the discernment, definition, and identification of environmental crises and the efforts to address them; the nature of social action and collective behaviours directed at tackling environmental problems; and the social characteristics and profile of the main actors in the push for environmental sanity. Other areas of interest would include: the nature of emergent social actions during environmental crisis: including the values, agencies and organisation structures involved, and their relative efficacy; a socio-political assessment of the effectiveness of the agencies and commissions set up to address environmental issues, including the social forces at play to either enhance or hinder such functional efficacy.

## **8. CONCLUSION**

In this paper, we have examined the origin and scope of environmental sociology, as well as aspects of the classical works of the founding fathers of sociology that appear to be of relevance to environmental discourse before the actual emergence of environmental sociology as a distinct field within the discipline. We proceeded to examine the key theoretical models in environmental sociology after its emergence in the 1970s, taking a



developmental, progressive transformational approach in our review. These distinct theories include: the New Ecological Paradigm, The Political Economy Model, the Risk Society Theory, and the Economic Modernisation theory. In a different mode, we examined the social constructionism/realism debate that cut across many of the theories already examined, with the conclusion that though the debate seems to be abating, it may not come to a quick end. We also averred that given the nature of sociological imagination itself, social constructionism is likely to continue to occupy a prime of place in intellectual discourse in Sociology.

We reviewed the key areas of empirical research interest in environmental sociology and ended our discussion on the note that not enough works have been done on environmental studies in developing nations in general, while environmental sociology seems not to have taken off in any significant way in developing economies in general and in Nigeria in particular. It is hoped that there will be a mutual, symbiotic drive in increasing government efforts to create a saner environmental system, of collective behaviours and social action groups to galvanize that change process and in the development of a vibrant environmental sociology to create needed intellectual and academic support for the expected environmental transformation.

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