

## Mitigating the Niger Delta Environmental Problem through Sustainable Development

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### **ABSTRACT**

*Niger Delta region of Nigeria is one of the foremost concentrations of biodiversity on the earth. The major environmental problem in the region is closely associated with its petroleum and industry. Oil spills, loss of mangrove forests, depletion of fish population, water hyacinth invasion, natural gas flaring and biological remediation constitutes the problem. Their impacts on the environment puts the future generation of the region in dilemma. Thus, the aim of the study is to examine sustainable development as panacea in mitigating the environmental problem of the Niger Delta. The major question this paper seeks to address is what are the means through which sustainable development might mitigate the Niger Delta environmental problem? The study is significant as it contributes to making available relevant information on securing environmental sustainability in the Niger Delta amidst global environmental challenges. The paper offers two perspectives to sustainable development. It argues that, taken as a development method, sustainable development serves as panacea for the environmental problem of the Niger Delta because it offer arrays of hope for the future generations of the region even when oil may have finished.*

**Keywords:** *Sustainable development, environmental sustainability, global environmental challenges, Niger Delta*

### **INTRODUCTION**

The major environmental problem in the Nigeria's Niger Delta region is closely associated with petroleum and industry (Albert, Amaratunga & Haight 2018). Composed mainly by way of sediments' deposits within the wetlands of 70,000km<sup>2</sup>, the Niger Delta makes up 7.5% of the total landmass of Nigeria. It covers 20,000km<sup>2</sup> with over 40 ethnic groups and a population of more than 20 million. The ecological nature of the region's environment can be divided into coastal barrier islands, lowland rainforests, freshwater swamps, and mangrove swamp forests.

In 1983, the Nigeria National Petroleum Corporation (NNPC) submitted an uncanny report long before current widespread unrests. In the report, they were already witnessing slow poisoning of waters, destruction of vegetation, destruction of agricultural lands, and destruction of good water sources. According to Vidal (2010), these weird occurrences were caused by oil spills during petroleum operations. The NNPC further submitted in the report, "Since the inception of the oil

industry in Nigeria there has been no concerned and effective effort on the part of the government, let alone the oil operators, to control environmental problems associated with the industry” (Vidal 2010).

Forlornly, since the inception of oil production in Nigeria, the negative impact of petroleum and industry on the Niger Delta region cannot be overemphasized. Agricultural lands are destroyed, good water sources are poisoned, and vegetation are destroyed. This is the result of oil spillage, gas flaring, dredging of larger rivers, and reclamation of land. Where the problem is not curtailed, these occurrences would have further impacts on the future use of the coastal area especially for agriculture - a major occupation of the region. This calls for sustainable use of the environment.

There is a connection between sustainable development and effective environmental control. According to the United Nations General Assembly (UNGA), sustainable development is defined as “development that meets the needs of the present without compromising the ability of the future generations to meet their own needs” (UNGA 1987, p.43). It follows that, in the event oil operators in the Niger Delta follow sustainable development principles, environmental challenges may have been minimized to barest minimum. It implies that sustainable development makes available a potent underlying principle for environmental protection (Emas 2015). In view of this, sustainable development supports securing environmental sustainability in the midst of growing global environmental challenges. This is significant to resolving the delta region’s environmental problem.

Therefore, the aim of the study is to examine sustainable development as panacea to mitigating the environmental problem of the Niger Delta. The question this paper seeks to address is what are the means through which sustainable development might mitigate the Niger Delta environmental problem? What are possibilities the entire region might be well-maintained from further destruction due to petroleum operations?

The study is significant to academic, researchers, policymakers, environmentalists, and development workers as well as the general public as it contribute to providing relevant information on securing environmental sustainability through sustainable development model within any given community amidst global environmental challenges.

The method adopted in the study is that of critical analyses of scholarly peer-reviewed articles, conference reports, and other relevant materials available on the internet. These materials were collected using keywords search like environmental sustainability, sustainable development, the Niger Delta environmental challenge, and global environmental challenges. While there was no date limits introduced on the searches, attempts were however made to focus on more recent but relevance discourses on the topic.

## **SUSTAINABLE DEVELOPMENT**

As pervasive as the concept of sustainable development has become over the years, it is observed by a number of scholars that literally, sustainable development is defined as the qualitative and quantitative improvements of living conditions with a capacity to be persistent ad infinitum or over a period of time (Lele 1991; Dambach 1998, 2003; Stoddard 2011). Despite its pervasiveness, in international development, sustainable development remains a key concept in global development agenda (Abubakar 2017). It provides machinery for global interactions to improve standards of living across the globe without posing environmental challenges like deforestation, climate change, and pollutions (Browning & Rigolon 2019). Meanwhile, pollution is the hydra-headed Niger Delta environmental problem.

Nevertheless, sustainable development can be examined from two different perspectives namely; on the basis of relevance and as an approach to development. Examined on the basis of relevance, sustainable development is a contemporary relevant paradigm shift to achieving an enduring development. The argument against this perspective holds that, the popularity of sustainable

development may soon wane because “The population keeps increasing but the natural resources available for the satisfaction of human needs and wants do not” (Mensah 2019). Agreeing with Mensah (2019), Anand (2019) argued that many observers have cited overconsumption as major reason for depletion of resources in the First World. So, to strike a balance between social well-being, economic growth and environmental integrity in the future, Hát et al (2016) argued that, relating to the thoughtful use of accessible resources in a sustainable manner, it is a general concern and that efforts are underway taking this possibility into consideration.

On the other hand, examined as an approach to development, sustainable development is a method by which development may be achieved at any level where available resources are used in manners that the resources will continue to exist in the future (Mochieldin 2017). The reality of the resources continuing in the future though not guaranteed, yet it is an organizing principle to meet development goals at different epochs (Everr 2017). Consequently, as an approach, sustainable development campaigns for the support of environmental harm principle. Inferred from J. S. Mill’s harm principle, environmental harm principle states that the ground on which the global community should impede the development agenda of any community is if that agenda will harm the future generation of the given or global community.

Therefore, sustainable development is a process of meeting present development needs without harming the possibility of future generations meeting theirs too. Corroborating this submission, Mensah (2019) identified three strands of sustainable development. These include economic sustainability, social sustainability, and environmental sustainability. The strand which this work focuses on is environmental sustainability, which of course, affects other areas.

## **ENVIRONMENTAL SUSTAINABILITY**

According to Goodland (1995), environmental sustainability is defined as “The maintenance of natural capital.” Though ambiguous, it suggests that environmental sustainability is closely associated with economic as well as social sustainability. In close association with ecosystem integrity (Bodhag & Taliere 2006), Goodland and Daly (1996) argue that natural capital ought to be used for trade and industry purposes in a sustainable way. For Moreli (2011), environmental sustainability is a green condition of resilience, interconnectedness and balance that gives room to a community to satisfy its wants and preserves that of the future generations.

In further development, there exist arguments between scholars who supposed that environmental sustainability is about the economy, society, and the environment benefiting simultaneously; and others who argue that, it is a human society and nature relationship (Moreli 2011). Notwithstanding perspective, foundational to any socioeconomic system is the availability of clean water, clean air, and productive land. This is the dearth in the Niger Delta natural environment; water, air and land are all polluted and destroyed by the economic activities of petroleum and industry.

There are oil spills, loss of mangrove forests, and depletion of fish population. There is also water hyacinth invasion, gas flaring and biological remediation. Unfortunately, these issues are borne 75% by local communities (Ayanalde, 2015). These issues are nevertheless, part and parcel of the global environmental issues identified by the United Nations Environmental Programme (UNEP 2012).

## **GLOBAL EMERGING ENVIRONMENTAL ISSUES**

According to Anand (2013), global environmental issues is defined as a “phrase to the effect on the climate of human actions, the on fire of fossil (coal, oil and gases) and large scale deforestation, which cause emission to the atmosphere” (1-9). In 2012, the UNEP acknowledged several key emerging environmental issues that should be taken into consideration in any attempts to mitigate

any environmental problem. This will help avoid unintended consequences. In 2019, UNEP further identified some of these key emerging issues as new problems for national and international agencies as well as advocates for sustainable development (Valavanidis 2019).

Examples of the key emerging global environmental issues abound. Cross-cutting issues such as the struggles in governance to support challenges of global sustainability, reconnecting science and policy, and coping with migration caused by new areas of environmental changes are some of the examples. Others are considered land, biodiversity and food issues. Of course, these include ensuring food safety and food security, integrating biodiversity across the environmental and economic agenda, boosting resilience and urban sustainability and responding to national and international new rushing for land.

Corroborated by UNEP Frontiers reports of 2012, 2016 and most recent 2019, Valavanidis (2019) further identified freshwater and marine issues. These include shift in the management paradigm of water-land interactions, shortcutting the degradation inland waters in developing country, potential collapse of oceanic system and addressing increasing pressure on coastal ecosystem with adaptive governance. Climate change issues were likewise identified. These include managing new challenges posed by unintended consequences of climate change mitigation and adaptation efforts, acting on the signal of climate change and managing the impacts of glacier retreats.

Furthermore, energy, technology and waste issues have been acknowledged as global environmental challenges. These include environmentally-friendly renewable energy system implementation, minimizing risks of novel technologies and chemicals, solving the impending scarcity of strategic minerals and avoiding electronic wastes, and the environmental consequences of discharging nuclear apparatuses. The above revealed global issues directly or indirect affects the Niger Delta region of Nigeria for the reason that the region is one of the highest concentrations of biodiversity on the earth (Albert 2017).

Sequel to the UNEP identified global issues as relates to mitigating the challenges, there are environmental sustainability principles that might mitigate the challenges in any part of the world (Morelli 2011). The principles may suffice on the Niger Delta environmental problem, as well as applicable to any society in lieu of the global emerging environmental issues. These principles are examined later.

## **THE NIGER DELTA AND THE FUTURE GENERATIONS**

In 2018, Albert, Amaratunga and Haight acknowledged that the foremost environmental problems in the Niger Delta region of Nigeria are closely associated with its petroleum and industry. These issues have been identified as oil spills, loss of mangrove forests, and depletion of fish population, water hyacinth invasion, and natural gas flaring amongst others.

On oil spills and gas flaring, a United Nations Development Programme (UNDP) report reveals that between 1976 and 2001 about three million barrels of oil were lost to 6,817 oil spills. The distributions of this spillage were recorded as off-shore 69%, swamps 25% and land 6% (UNDP 2006). That, oil spill has major impact on the ecosystem is not new thing. It has almost destroyed agriculture in the Niger Delta causing extreme poverty, extreme hunger, and loss of livelihoods for peasants. Life expectancy is reducing on regularly basis. Unclean air is causing severe health challenges to residents in the region (Ronwen 1999). The unclean waters are killing aquatic life. These damages so far, have left little or no room for future generations in the region to meet their own health, aquatic, and general well-being needs in the future.

On loss of mangrove forest, large areas of vegetation are wiped out. In the Niger Delta, vegetation extensively includes brackish swamp forests, rainforests and mangrove forests (Nwilo & Olusegun 2007). Oil spills on mangrove makes the soil acidic and wastes away roots of energetic

oxygen (Limson 2002). There is little no wonder the increase in deforestations in the region. Meanwhile, forestation is very importation to achieving a sustainable environment.

All the scenarios above present a very unsmiling future for the unborn generations of the Niger Delta.

## **HOW SUSTAINABLE DEVELOPMENT MIGHT MITIGATE THE ENVIRONMENTAL PROBLEM OF NIGER DELTA**

The austere outlook of the future of the unborn generations in the delta region might be mitigated through the agency of certain environmental sustainability principles. The many efforts aimed at environmental problem mitigations might continue as mirage except reliable information to guide policies and actions in response to given issues are made available to national and international government agencies as well as nongovernmental organizations.

Over the years, UNEP have contributed tremendously to support developing countries in “implementing environmentally sound policies and practices” (Valavanidis 2019). The UNEP efforts are geared towards achieving sustainable environment (Mensah 2019). Morelli (2019) had opined that certain sustainability principles may be applied to mitigating any global environmental challenges. These principles include societal needs, biodiversity preservation, and reuse and recycle.

According to the social need principle, the nature of crude oil production in the Niger Delta may have to be reviewed and environmental sustainability made a major prerequisite for future exploration activities in the region. Anand (2019) supports this view arguing that condition monitoring and maintenance is critical. In the event this is put in place, the damaging effects of previous pollutions on water, land and air would be put on check. In addition, reasonable success rates can be recorded in the efforts to clean the environment, and future pollutions are prevented. This would offer sustainable opportunity and hope to future generations in the region. In other words, economic importance may not be considered at the expense of the environmental preservation. When economic activities are considered against environment sustainability, efforts targeted at cleaning the environment will always be squashed. Corroborating this submission is the global sustainability principle (2010).

Global Sustainability Principle (2010) argues that when attributes of raw material in an environment are reviewed and environmental sustainability are made a key yardstick in the selection of new products and services sustainable development goals of maintaining clean environment are achievable (Morlli 2019). Where social need principle is put in place, it presents a policy guide for helping the situation where livelihoods of peasants were damaged and millions of others impoverished who owe their living to land and water use in the region. In this way, sustainable development may be a viable therapeutic tool to the damaging effects of petroleum and industry in the Niger Delta.

Furthermore, according to the biodiversity preservation principle, the petroleum and industry as well as government may need to consider investing into improvement of energy productivity alongside sustainable energy sources and use them responsibly in the delta region. Corroborated by the global sustainability principle (2010), it summits that we “Use environmentally responsible and sustainable energy sources and invest in improving energy efficiency” (Morlli 1-10). No doubts, several efforts are underway in this area but in principle, more needs to be done to put it to practice. Ironically, the Niger Delta is one of the worst affected regions in terms of energy in Nigeria.

In addition, rural-urban migration is putting more demands on biodiversity. This will in no wise decline, instead rural-urban migrations are constantly on the increase within the delta region. This migration is basically in search of livelihoods since there are no energy sources for their desired usage. Valavanidis (2019) argued that urban migration is triggered by desires of rural populations to take part in the advantages and enjoy those stunning stuffs urban areas offers. Some of these

advantages include energy supplies, employment, schools, entertainment, and transportation among others. Therefore, biodiversity preservation principle may contribute to securing sustainable migrations and sustainable energy for rural community dwellers by making available in the rural areas some of urban attractions.

Also, according to the reuse and recycle principles, it argues that petroleum products ought to be recycled and reused for other purposes. Gases burning away can be converted for other domestic and industrial purposes thereby cleaning the air and saving rainforests. It has the capacity to improve standard of living and life expectancy. Globally, life expectancy is major area of focus for policymakers. Cleaning the air, water and land also has the capacity to increase life expectancy in the region. It has the potential to drastically decrease the risks of health challenges due to gas flaring and oil spillage. Supporting this principle is Sustainable Living 101 (2010). It says “design for re-usability and recyclability.” In this way, environmental resources are duty-bound to be consumed in a sustainable manner.

In a null shell, sustainable development ought to be taken as a paradigm shift approach to the development of the Niger Delta region and as panacea to the environmental problem of the region. With this approach, sustainable development paradigm offers sustainable hope for the future generations in the Niger Delta even when oil has finished. It will prevent the entire land, air and water resources in the region from destruction beyond mending.

## **CONCLUSION**

In conclusion, the Niger Delta region is one of the highest concentrations of biodiversity on the earth. The major environmental problems in the Niger Delta region are closely associated with its petroleum and industry. These problems chiefly are oil spills, loss of mangrove forests, and depletion of fish population. There is also water hyacinth invasion, natural gas flaring and biological remediation.

However, taken as ‘an approach to development’, sustainable development is panacea for the environmental problem of the Niger Delta because it offers arrays of hope for the future generations of the Niger Delta even when oil is no more. It mitigates the environmental problem through societal needs, biodiversity preservation, and reuse and recycles principles of environmental sustainability.

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