

## Bioterrorism Warfare in Helon Habila's *Oil on Water* and Kaine Agary's *Yellow Yellow*

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### Abstract

Nigeria's Niger Delta issue regarding oil exploration and oil exploitation has been a global one. This is owing to the serious damage being done to the environment and the lives of the people in the region. It is crystal clear that crude oil is made up of different mixtures of organic compounds, which are poisonous to both aquatic and terrestrial lives. They constitute serious bio weapons that can access the body through contact, breathing, and gastrointestinal means. This research therefore examines the oil companies (the Shell, Agip and elf), the government and the militants' roles to ascertain how they constitute potential bio terror threats in the Niger Delta region. It analyzes Helon Habila's *Oil on Water* and Kaine Agary's *Yellow Yellow*. This is a qualitative research. The method used was direct lifting of information from the texts after thorough reading. The research is anchored on trauma theory. Preliminary investigation in the two texts reveals conscious bio warfare is being carried out against the Niger Delta people periodically by the oil companies in the region, the government and the militants. Moreover, the paper posits that environmental sustainability is the way out of the bio-convulsions going on in the region.

**Keywords:** *Terrorism, Bioterrorism, Bioweapons, Niger Delta Region, Environmental Sustainability, Trauma Theory.*

### INTRODUCTION

The world today faces several problems threatening the life and existence of man on earth. One of them is terrorism. It is a global monster that needs to be fought with all the fibre of strength. A cursory look at it reveals that it is really an ill wind that blows nobody any good. Therefore, it should remain odious to every Dick, Tom, and Harry that loves peace, progress, and stability in the globe.

However, there are different types of terrorism. They are narco-terrorism, racial terrorism, dissident terrorism, bioterrorism, and state terrorism, among others. The focus of this discourse is on bioterrorism in the Niger Delta region of Nigeria using Habila's *Oil on Water* and Agary's *Yellow Yellow*. The two novels are used to reveal how the oil companies in the region (such as Shell, Agip and elf), the Federal Government of Nigeria, and the Niger Delta militants terrorize the region through bioweapons from biofuels in pursuit of economic, political or social advantage.

One thing about bioterrorism is that it is lethal. It affects the lives of the public extensively. It unleashes fear, threat, panic, danger, and death in the people. Terrorism, according to Mathur (2011) cited in Ekoko (23) becomes bioterrorism when biological weapons are used to kill people. Biological weapons can access human internal organs through breathing, contact, and the gastrointestinal system. It can bring about chronic societal concerns, anxiety, and health issues as well as environmental damage. All these are evil phenomena in society that the literary texts under review unveil at the doorstep of our conscience. That is why literature is not only an expression of society but also the report of changes in the social conditions of the people which both *Oil on Water* and *Yellow Yellow* captured.

Another vital piece of information about bioterrorism is that it is intentional. It is an attack or suffering that occurs through a deliberate release of viruses, bacteria, or other germs (agents) that can cause illness, or death in people, animals, or plants (Ekoko, 2016:23; Omicsonline, 2015; Mathur 2011; Wikipedia; 2015; CDC, 2014). Agents responsible for bioterrorism attacks are: anthrax, plague, botulism, and tularemia. Others include epsilon toxin, glanders, melioidosis, ricin toxin, water safety threats, as well as hantavirus, among others.

On the other hand, the Niger Delta region, otherwise known as the oil-rich region of Nigeria, metaphorically has its bioterrorism agents which are the oil companies mentioned before, the Federal Government, and the Niger Delta militants. The oil companies explore and drill oil in the Niger Delta area. The oil drilled is moved from one point to the other with a high risk of spillage here and there on the environment. The oil spill is hazardous in nature. Syed Tahmid and Yeasin Arafat (2017:1) describe oil spill as the discharge of liquid petroleum into the environment mainly in marine areas which is a dangerous disaster that hits the marine and coastal ecosystem. The destructive properties of this oil on the surroundings are life-threatening. Honestly, oil is the economic engine of any nation that has it. However, it can breed poison and terror (Hussein et al 2008; Annunciado et al, 2008 and Lutz and Lutz 2013). When oil spills on land and water, it becomes poisonous as its substance is capable of causing illness or even death of a living organism. So, through spillage, pollution, and gas flaring, every living organism in the Niger Delta, including the biosphere is jeopardized by the oil companies, causing both human and ecological havoc in no small measure. Of course, it is patently discernible that environmental pollution from petrol hydrocarbons is highly noxious to all kinds of life in both aquatic and terrestrial biosphere. This is because petroleum products contain different mixtures of organic compounds. These compounds range from xylene, benzene, toluene, ethylbenzene, branched chains, tars, asphaltene, resins, waxes, and bitumen to naphthalene, anthracene, and phenanthrene (Ismail Saadoun, 2015). All these constitute hazardous waste during oil pollution. In view of this, the World Health Organization estimates that about 12.6 million people died as a result of working or living in a hazardous environment in 2012. This equates 23% death rate to adults and 26% to children owing to exposure to both fatal and terminal diseases in their environment. The pollution from oil activities can occur through tanker accidents, leakages from petrol refineries, tanks, pipelines, exploration, and drilling activities. These thereof are common incidents in the Niger Delta region of Nigeria which the oil companies have been drawing a veil over probably to avoid their sickening consequences. The implication is that the ecological footprint in the region is in blatant disregard. In other words, it is really a bioterrorism act against the people of the area and the entire ecosphere because they are left at the mercy of killer ailments from a contaminated environment. This stems from the fact that oil spills, gas flaring, and pollution could be a receptacle for bacteria, viruses, and fungi to release all kinds of poisons and diseases such as toxins, ricin, fever, severe diarrhoea, fever, hepatitis, gastroenteritis, noisy breathing, cholera,

among others. With this, it is obvious that the oil companies operating in the Niger Delta region of Nigeria are all agents of bioterrorism metaphorically. They are being driven by economic interest since Nigeria is a petro-capitalist country. In order to protect this interest, they deliberately endanger lives to grow.

This apart, the Federal Government on its part is complicit in all these with the oil companies. The government is supposed to regulate the activities of these companies through several policies and programmes. Instead, they support the exploitation and despoliation of the environment and the locals of the Niger Delta through military conquest. They adopt an ostrich policy and derail in what is known as Regulatory Capture (Bonn Obiekwe Godwin Nwanolue et al, 2022:5). The result is worrisome. Oil spill frequencies have increased since 1979 Forcados terminal oil spillage in Rivers state, Nigeria because the government downplays such an incident each time. According to report under the institutional framework, the constitution of Nigeria makes it clear that oil exploration, drilling, and mining activities are the exclusive reserve of the government. So, in order to have a total grip on oil activities in the country, the federal government initiated several legal frameworks to ensure regulation and reduction of pollution rate from the petrol industry in 1963. Some of these include the Mineral Oil Safety Regulation Act of 1963; the Petroleum Regulations Act of 1967; the Petroleum Decree of 1969, Federal Environmental Protection Agency Act of 1988, among others (Adati Ayuba Kadafa et al, 3). In addition to this, the Federal government takes a step further by establishing the National Oil Spill Detection and Response Agency (NOSDRA) through the Ministry of Environment just to oversee the National Oil Contingency Plan (NOSCP). Despite these and many other efforts to ensure a breath of fresh air in the Niger Delta region, the government is inert in applying and monitoring these legislations and regulatory bodies to ensure strict compliance by the oil companies. This is a serious dereliction of duty and tragedy, too. One of the tragic parts of it is a report from Aljazeera media in 2019 that about 16,000 newborn babies in the Niger Delta died within the first month of their lives in 2012 owing to oil spills. The government displays a petro-capitalist attitude here. This attitude toes the line that every environmental impact that creates economic venture is separate and therefore must not be accounted for.

In other words, the government sees the entire Niger Delta region as only existing for the provision of resources for their consumption and a conduit for hazardous wastes. The government is driven here by both political and economic interests. Owing to this, restiveness in the people sets in. To stem it, the region is fractionalized into three groups by the government viz: the youth, the elite, and the elders thereby creating room for a struggle for survival among them in the name of divide-and-rule. It eventually opens the door for sociopolitical crisis, crime and disillusionment, unemployment, injustice, oppression, exploitation, poverty and misery, avarice, corruption, violence, kidnapping, activism, military action and killing of innocent people in the region.

All these are elements of terror on the people and the land. Moreover, they are social vices that encourage bioterrorist acts of the oil companies. Therefore, the government which is supposed as an obligation to protect the citizens is now unleashing terror on them under what is called state terrorism. So, it is not out of place that these woes above are embedded in the texts under review by their writers as part of the people's heart-breaking story. In view of this, Marder describes literature as one of the ways we tell one another about aspects of human experience that cannot be contained by ordinary modes of experience that may even exceed human understanding (3).

Then, the militants as agents of bioterrorism on the other hand in the Niger Delta region cannot be ignored by any stretch of imagination. They take up arms against the sea of trouble in the Niger Delta creeks in protest against losing their means of livelihood to oil pollution and degradation. They engage in violence, kidnapping, and even in a gun duel with the military, resulting in deaths and casualties. They also engage in oil bunkering and pipeline vandalism. These militants were involved in these violent activities according to Olatunji Basit (12) for wanting to get some benefit out of the pipelines that have brought nothing but suffering to their lives, leaking into the rivers and wells, killing the fish, and poisoning the farmlands. They believe that the only language that can force both the oil companies and the government to do what the region expects from them is violence of all kinds, not minding the consequences on the common people, land, and the biosphere. They are driven by social interest. However, while justifying the instrument of violence as a means to an end by these militants, James Ngugi Wa Thiong'O states that "violence, in order to change an intolerable, unjust social order, is not savagery: it purifies man. Violence to protect and preserve an unjust, oppressive social order is criminal and diminishes man" (28). A close look at Ngugi's assertion above reveals that the first part of information about violence is attributed to the militants while the second refers to the federal government that uses military might against the militants. In view of this, Olatunji (9) submits that the brutality and terror meted out to the people indicate that the government is illegally encroaching on their lands, forcing them to shut their mouths and equally restraining them from stirring up any violence aimed at disrupting the activities of the oil companies. In view of this, Fanon Frantz (2008:35) states that a subaltern revolt that ends in violence and public strife against the government is largely sociopolitical and economic. According to him, it is not simply a revolt with hostility for violence's sake, rather the violence here is cathartic—a violence which remedies the disempowered of their inferiority. To the militants, it is true that the squeaky wheel gets the grease. Oil bunkering and pipeline vandalism are both unwholesome acts. They constitute both health and ecological threats. By extension, they are bioterrorism acts under dissident terrorism as each oil bunkering leads to oil spillage. Therefore, it is not shocking that in 2021, the United States Greenpeace report declared that globally, petroleum accounted for 41.0% of the carbon dioxide emissions from fossil fuels and oil bunkering releases carbon dioxide into the atmosphere, contributing to the warming of our planet, fueling climate change, polluting priceless landscapes and costing billions of dollars (Orisa-Ubi and Eleberi, 2023; 29). Carbon dioxide can cause hypercapnia, dizziness, and cardiovascular discomfort, among others. In California, another report has it that oil spills had long-lasting effects as dead fish and birds were washed up on the sand and that toxic chemicals remain in the ocean for years, often sinking to the seafloor and poisoning the sediment. What is more, some of the human health challenges of oil bunkering as listed by Orisa-Ubi and Eleberi (30) include; diarrhoea, sore eyes, itchy skin, occupational injuries, shock, acute renal failure, extensive epidermolysis, conjunctivitis, mucositis, esophagitis, chemical pneumonitis, and so on. These are examples of bioweapons. From this above, one could see clearly that man is a destroyer of nature. The consequences of his destructive actions are forest disappearances, rivers' dryness, wildlife extinction, climate change, land infertility, and so on. This act is environmental terrorism. It is the deliberate use of force and violence on the environment for selfish ends which could be social, economic, or political. In the Niger Delta region of Nigeria, this environmental terrorism is a brother to bioterrorism because polluting the environment with crude oil hydrocarbon and gas flares unavoidably leads to an outbreak of both mortal and terminal diseases. It is launched against the people, plants, and animals, as well as the ecosphere in the Niger Delta region by the oil companies, the Federal government, and the militants as causative agents through oil exploration and exploitation.

However, many literary writers have written a lot about the Niger Delta region's ecological pollution and degradation in different perspectives but none has focused on them from bioterrorism angle, through oil spills, gas flaring, and pollution. Being mindful of this and with a passionate interest in ensuring a hazard-free ecosystem in the region, the paper, therefore seeks to examine closely the activities of the oil companies, the federal government, and the militants, to ascertain the extent the people of the region and their ecosphere have suffered, been maimed, mangled, battered and ravaged from untold diseases and ruin of oil spill, gas flares and pollution. This is done through an examination of both Habila's *Oil on Water* and Agary's *Yellow Yellow*. The research is anchored on trauma theory. Preliminary investigation reveals that there is a catalogue of bio-convulsions in the Niger Delta region, which in the opinion of the paper, is a bioterror act, due to oil activities by the oil companies, made possible by the petro-capitalist attitude of the government and rebellious act of the militants. Moreover, the paper posits that environmental sustainability is the way out of the ecological warfare going on in Nigeria's oil-rich region.

### Theory Used

The research is hinged on trauma theory. This theory is an interdisciplinary one. The word trauma is found in medicine to refer to physical injury. In this context, damage could be a synonymous word for it. In Psychology, trauma is an emotional response to a horrific occurrence such as a mishap, rape incident, or natural catastrophes. It is a long emotional response to dangerous or unhealthy practices in education. It is associated with pains (whether physical or mental) and agony, mounting on feelings and emotions. The agony will always culminate in knowledge and understanding.

Trauma could be caused by nervousness and uncertainty. Other causes of it are violence, war, betrayal, swindling, bullying, brutality, rape, discrimination, and so on. With this, one can see that it is plausible to hear that trauma is traced to the events of the World War of 1919. Following this, Caruth argues that the impact of the traumatic events lies precisely in its belatedness, in its refusal to be simply located, in its insistent appearance outside the boundaries of any single place or time. She adds that a belated event is a trauma which is an "absence or missed encounter" (1996:9). Owing to this, Marder stresses that there is a longing today about "the importance of finding new ways to acknowledge the impact of events that can only be known belatedly and of listening to the power of experiences that can only be expressed indirectly" (2006:2).

Trauma involves disastrous events. According to Sigmund Freud (1919/1920), trauma is essentially any event that is overwhelming or overpowering that the conscious mind is unable to accept it, and thus forgets it. He adds that this "forgotten" trauma comes back in the form of somatic symptoms. It is an abrupt entry of fresh knowledge into the mind of somebody owing to an unexpected confrontation with violence or death. Freud confirms that when this occurs, such a person is confused, disconnected, and terrified because traumatic neurosis is caused by real experiences like accidents, combat, death, and so on. It creates a scar sort of in the mind. Dipak Kumar and Sukhdev Singh (2022:1) in view of this define trauma as a "psychic wound" caused by undesired events through someone's unpleasant thoughts, words, and actions. However, the notion of trauma resulting from somatic harm is said to have been broadened to cover psychogenic disorder which begins from the experience of fear, created as a remembrance of traumatic torment.



Following the above, the Merriam-Webster dictionary (2021) explains that trauma is a “disordered psychic or behavioural state resulting from severe mental or emotional stress or physical injury”. By extension, Onderko, (2018) in Harjot Kaur and Pooja Jaggi (2023:2) submit that trauma is the response to a deeply distressing or disturbing event that overwhelms an individual’s ability to cope, thereby causing feelings of helplessness and diminishes their sense of self coupled with their ability to feel the full range of emotions and experiences. This can lead a trauma victim to be aloof and as well become dead in daily life activities. In line with this, Michelle Balaev (2008:150) toes the line of thought of Onderko when he says that trauma means a person’s emotional response to an overwhelming event that disrupts previous ideas of an individual’s sense of self and standards, by which one evaluates society. This actually empties selfhood. This is probably why both Freud and Caruth analyze the notion of trauma from the angle of psychoanalytic structure. In fact, to Caruth, trauma is an event that scatters consciousness thereby preventing linguistic depiction (Mambrol, Nasrullah 2018 in Siti Hawa Muhamad, 2020:167-168). By extension, the American Psychiatric Association (APA) in a comprehensive manner argues that trauma is:

*A direct personal experience of an event that involves actual or threatened death, or serious injury, or other threat to one’s physical integrity; or witnessing an event that involves death or injury, or a threat to the physical integrity of another person, or learning about unexpected or violent death, serious harm or threat of death, or injury experienced by a family member, or other close associate. The person’s response to the event must involve intense fear, helplessness, or horror (2000:463).*

The sense here is that trauma is a very horrific experience. In view of this, Peichl (2007:23) adds that trauma is a toxic condition that is a mixture of intense anxiety, absolute helplessness, and a loss of control.

Moreover, when one undergoes a trauma, one is likely to exhibit some mental reactions such as anger, sadness, anxiety, guilt, lack of concentration, flashbacks, dissociation, mistrust, nightmares, insomnia, panic attacks, hypervigilance, and so on as manifestations (Hendin & Haas, 1991:6, Brewin et al 2000;2015; Van der Kolk & Van der Hart, 1989; DeSilva, 2020). Apart from this, trauma can be historical, transhistorical, or intergenerational. They all refer to the next generation. Historical trauma, therefore, refers to an intergenerational trauma undergone by a particular social group that has a record of being consistently exploited. This notion of trauma is communal, and as a result, can culminate in destroying the mutual spirit of a society which will later appear as a latent shared response. This tends to be the position of a universal trauma as expressed by both Caruth and Freud. Then, intergenerational trauma according to Mavigalia (2006:1) is the transmission of the consequences of trauma from one generation to the next. What is more, transhistorical trauma can be used interchangeably with intergenerational one. All these show that trauma is transmissible. One of the channels of transmission is through somatic means. Trauma is not only of the psyche but also of the body. Therefore, Buonagurio and Napoli (2020) believe that since trauma has been found to embody itself in individuals, it has a high chance of being transmitted across generations through the human body. This apart, Elena Cherepanov (2020:127-133), states that another means trauma can transmit across generations is by ‘survival messages.’ He says that survivors of trauma of oppressive conditions may tend to communicate to their children as well as grandchildren their harrowing experiences. Furthermore, trauma is divided into two major categories by Elyssa Barbash as seen in Psychology Today on March 13<sup>th</sup>, 2017. According to him, trauma can be either the Small ‘t’ or the Large ‘T’ in line with the general understanding of it. He posits that

the Small ‘t’ trauma is the type where the events that caused trauma are not seen as life-threatening, but capable of causing severe stress, exceeding our capacity to cope, thereby disrupting our emotional and psychological functioning. So, it is experienced at a personal or individual level. Then, the Large ‘T’ trauma is the one that happens from the events that are considered to be traumatic at a universal level such as natural disasters. This trauma is considered to be universal and can be trans-historical.

From the foregoing, one can see that this theory is apt in this research because the story of oil exploration and exploitation in the Niger Delta region of Nigeria is really a trauma narrative. It is a tale of agony, anguish, pain, suffering, exploitation, death, warfare, violence, and all manners of tragedy. The situation in the region is so disturbing, distressing, overwhelming, and overpowering that no conscious mind can accept it sincerely because of oil spillage and chronic pollution damage. The activities of the oil companies have distorted and degraded their entire biosphere, causing ripple effects.

The land is hacked, the air is polluted, water is poisoned, and forests disappearing, with both humans and animals dying at a cracking pace from both mortal and terminal diseases. These breed anger, bitterness, sadness, and aggressiveness among the people. Their sufferings reach a new plateau and scatter their consciousness, and now, they are restive, and out of control. Their traumatic pain becomes harmful and harsh. In the wake of this, therefore, Freud (1920:14) rightly observes that traumas and suffering inflicted upon us by other humans leave the most powerful and painful traumatic imprint.

To sum it up, the painful traumatic imprint as described here is trans-historical or intergenerational in the Niger Delta area. The oil companies’ refusal to adopt best global practices to ensure environmental sustainability and the Federal government’s persistent failure to regulate them, have been a generational experience. This is deliberate. As a result, toxins, ricins, and aerosols, among others from oil spills cause deadly diseases with mass casualties to both aquatic and terrestrial lives in the region. This is bioterrorism in the opinion of this paper. This stems from the fact that poisons from gas flaring, pollution, and spillage could result in an outbreak of all manners of diseases such as eye irritation, shortness of breath, noisy breathing, and cholera. Others are fever, smallpox, severe diarrhoea, hepatitis, among others. The experience of all these is not only traumatic but also unforgettable.

## LITERATURE REVIEW

“Bio” in bioterrorism means “life”. Then, the word, ‘terrorism’ is a derivative of that of terror. In other words, bioterrorism could simply mean “terror of life”. Then, terror itself can be said to have its roots in several languages. For instance, the Russian word, ‘triasti’ refers to ‘shake’, which translates to terror. In Sanskrit, the word, ‘trias’ means dismay or tremble. Meanwhile, terror becomes common during the 17<sup>th</sup> century across European countries. In the English language, terror represents extreme fear, devil, fright, dread, and so on. Therefore, to terrorize is to endanger or create extreme fear through threats. On the other hand, terrorism is an act of terror. This act is illegal, and usually done by the use of threats, violence and force so as to achieve a particular aim. However, both terrorism and bioterrorism go hand in hand as one is the form of the other as can be seen in the review here.

Terrorism first, is really a dance of macabre. It is a monster that claims lives and property deliberately through force, violence, and threat thereby instilling fear in the public. To Nolan (1998) in Ameh Emmanuel Ugbedeojio (2022:81), terrorism is seen as “the premeditated

execution and use of fear to influence a political change”. In the same vein, David Whittaker (2004:2) contends that terrorism is a premeditated, politically motivated use of violence or its threat to intimidate or coerce a government or the general public to accede to demands. These definitions imply that terrorism and terrors stem from political struggles and battles to conquer and rule, a thing rampant during the ancient era. When these happen, non-combatants are affected badly. They result from organized human intercourse and interconnection. Following this, Dempsey (2006) in Ayuba Isyaku (2013:17) describes terrorism as a failure of the political process that begins with in-equalities, corruption, and injustice in a given political system, moving from frustrated attempts at reforms that breed fear and anger to political confrontation and conspicuously erupted into violence.

Moreover, Sandlers and Enders (2005) in Ugbedejo (81) submit that terrorism is the deliberate use or threat of employing violence by individuals or sub-national groups to achieve a political or social goal by intimidating a large audience beyond the immediate victim. It is the recurrent use or threatened use of politically motivated and clandestinely organized violence, by a group whose aim is to influence a psychological target to make it behave in a way in which the group desires (Drake, 1998:10). Then, according to Walter Laqueur (5), terrorism is the illegitimate use of force to achieve a political objective when innocent people are targeted. To Giacomo Luciani (2011:4), it is a tactic aimed to create widespread terror in the population with acts of indiscriminate violence and leads to pressure on the state to yield or compromise. Terrorism from these submissions here can be said to be a rational stretching of either political frustration or negligence. This results when the government is not fair and sincere. The worst of it is that it collapses both humanity and dignity of the people.

Apart from the above, the United Nations Human Rights Commission asserts that terrorism is acts of violence that target civilians in the pursuit of political or ideological aims (5). In line with this, the United States Department of Defense argues that terrorism is “the calculated use of violence or the threat of violence to inculcate fear intended to coerce or intimidate government or societies in the pursuit of goals that are generally political, religious or ideological. Then, the United States Institute of Peace concludes by saying that it is characterized by the use of violence against civilians, with the expressed desire to cause terror or panic in the population (4). However, in the opinion of the FBI (1999), terrorism is “the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives”. Therefore, terrorism as defined by these agencies above shows that it is a marauder. Its tools are fear and insecurity, violence, threat, and force, all to inflict casualties or death among the populace. In view of this, Mahatma Gandhi warns that every murder or other injury, no matter for what cause, committed or inflicted on another is a crime against humanity. In other words, terrorism is an insidious virus, (especially nowadays) and at the same time, the greatest enemy of progress to mankind. Also from the definitions given so far, it is crystal clear that terrorism is a web. It crisscrosses different areas of human disciplines such as philosophy, psychology, military tactics, history, politics, and so on. On the other hand, some of the tactics employed by terrorists include bombing, kidnapping, violence, hostage-taking, and hijacking, among others.

In another development, bioterrorism as a form of terrorism is the use of bio-weapons to create mass casualty, death, or destruction among the human population, animal, or plant. Ekoko (23) sees it as the deliberate release of viruses, bacteria or other germs (agents) used to cause illness or death in people, animals, or plants. Malthur (2011) in Ekoko (23) submits that



it is the use of biological weapons to kill people. The World Health Organizations explain biological weapons to be biological and toxin weapons that are either microorganisms like virus, bacteria, fungi, or toxic substances produced by living organisms that are produced and released deliberately to cause disease and death in humans, animals, or plants. It is sometimes called the weapon of mass destruction. Owing to this, David (117) states that bio-weapons are different from other weapons because of their ability to inflict mass destruction. He lists materials for bioweapons to include botulinus, typhus, bubonic plague, ricin, and toxins, among others.

However, bioterrorism can either be done through biological agents or chemical agents. These agents are really dangerous in inflicting damage to the entire ecosphere. According to the United States Department of Defense, Washington D.C., and CDC, bioterrorism agents are grouped into categories A, B, & C. Those of “A” include botulism, anthrax, plague, tularemia, smallpox, etc. Those of “B” are brucella species, typhus fever, epsilon toxin, food safety threats, glanders, ricin toxin, melioidosis, water safety threats, and psittacosis, among others. Then, “C” are hantavirus, nipah virus and emerging others. These agents can access the human body through inhalation, contact, as well as the gastrointestinal tract.

From the above, one can see that terrorism is a scourge, plague, bane, torment, and a grim reaper. Moreover, the use of bio-weapons such as oil spills, gas flaring, and pollution, in the opinion of this paper, to terrorize people, plants, and animals, especially in oil-producing countries, seems not to be on the front burner of literary scholarship as seen here. This is even as oil terrorism is becoming a constant reality daily in the globe today. Researchers, governments, and agencies tend to focus more on conventional terror attacks, hence the need for this research on bioterrorism warfare through crude oil. The oil terrorism can be done by militias, freedom fighters, and insurgents. Their strategies include: pipeline vandalism, seizure of oil barges, oil wells, flow stations, support vessels, kidnapping, bombing of installations, and so on. This is why Abimbola and Adesote (2012:15) posit that one of the most lethal actions of terrorists is kidnapping and bombings. These strategies of operation are carried out through violence and force. When they happen on oil installations, there will be a serious oil spill. These oil spills are harmful to both aquatic and terrestrial lives owing to chronic diseases associated with them. In the same vein, oil spills could be traced to the oil companies exploring and exploiting oil for failure to adopt international best practices. Then, this can be blamed on the state government or agency saddled with the responsibility of monitoring these companies under Regulatory Capture. All these are done to protect one interest or the other. In other words, they are all deliberate. However, since crude oil has a high content of hydrocarbon compounds, it constitutes bio-weapons capable of killing and affecting life badly through aerosols, pollution, and gas flaring. In the wake of this, therefore, the research seeks to analyze bioterrorism attack through crude oil on the entire biosphere of the Niger Delta area of Nigeria to ascertain its level of damage to both aquatic and terrestrial lives. This is done through the study of Habila's *Oil on Water* and Agary's *Yellow Yellow*.

### Analysis

One of the issues of concern in the world today is terrorism. Bioterrorism as the focus of this research is a form of terrorism that is carried out through the use of bioweapons. The use of bioweapons in the Niger Delta region of Nigeria seems to be always glossed over or consigned to the scrap heap. It stems from the laissez-faire attitude of the Federal government saddled with the responsibility of protecting the citizens. This attitude is deliberate since Nigeria is a petro-capitalist country with an interest to protect. So, they connive and collude

with the oil companies to degrade the people and their entire ecosphere. As a result, oil that is supposed to be gold to the people now becomes a poison that kills, maims, tortures, and destroys both aquatic and terrestrial lives through oil spills, pollution, and gas flaring. These are bio-weapons against the people because the oil that generates them contains different mixtures of organic compounds, ranging from hydrocarbons to hazardous compounds. These are not only toxic but also life-threatening to the environment. For instance, in Habila's *Oil on Water*, there are depictions of death, decay, desolateness, and degradation in the surroundings of the Niger Delta region as narrated by Mr. Rufus, one of the journalists in search of the missing wife of an expatriate as can be seen here:

*"A bat flying overhead, a dead fish on the oil-polluted water, a gathering of rain clouds in the sky, the atmosphere grew heavy with the suspended stench of dead matter...dead birds drapped over tree branches. Their outstretched wings black and slick with oil, dead fish bobbed white bellied between tree roots" (pp4-8).*

The bio-weapon agents responsible for this disaster are found in both categories "A" and "B" of bio-weapon material classifications. Moreover, the oil companies that operate in the region and the Federal government are also agents here by dint of their negligence. It is really a gruesome sight. Water is life, but it is obvious that the water in the quotation above is poisonous. These are a result of oil spills and leakages from pipeline vandalism and bunkering. The birds here die as a result of an oil spill that coats their plumage in adhesive, oily slime. When they decide to preen their feathers, the toxic oil mud poisons get into their internal organs, causing them liver, lung, kidney, and intestinal discomfort that eventually kill them. Moreover, it is crystal clear that when the atmosphere is filled with toxic, foul smells, lives are put at stake. By extension, the fish in the passage die because they swallow particles of oil or prey materials immersed in oil, and these affect their liver and kidneys, causing them anaemia and immune system suppression. They are unhealthy practices that are disastrous and capable of causing a "psychic wound" according to Dipak and Singh (2022:1). In trauma theory, pictures as depicted above are likely to generate anger, sadness, mistrust, and even panic attacks, as well as nightmares among the populace because they are traumatic, with fearful feeling of uncertainty. Therefore, it is not surprising that the youths take up arms as militants, freedom fighters, and even terrorists to stage what they call righteous indignation against the indifferent attitude of both the oil companies and the federal government. Their lands are fast becoming a desert, with many losing their fishing jobs due to polluted water and land. Papa Samuel feels the torment of the fishing job loss and therefore becomes traumatized, trembling with the fear of emptiness of tomorrow for the son as he laments thus: "...But see, wetin he go do here? Nothing. No fish for river, nothing. I fear say soon him go join the militants, and I no want that" (p.36). Their aquatic habitats are infected with poisons from oil spillage. As a result, they believe that violence is the answer to the bio-attacks they are suffering through the oil spill. Empirically, job loss is an agonizing thing that could result in traumatic conditions, all depending on the way it is handled. Also, in *Yellow Yellow* by Agary, Zilayefa equally complains of land loss by her mother as witnessed here:

*"...And so it was that, in a single day, my mother lost her main source of sustenance. However, I think she had lost that land a long time ago because each season yielded less than the season before" (4).*

Land infertility as seen here brings about food insecurity with severe hunger. Severe hunger causes atypical depression, hyperthyroidism, polyphagia, and so on. Meanwhile, the fear inherent in a loss of means of livelihood tears life to pieces with a giant talon. It carries

with it sometimes both pathological and psychological burdens. This is capable of opening doors for schizophrenia, anxiety, depression, bipolar disorder, and disruptive behaviour, among others. Of course, a hungry man is not only an angry man but also a mad man too. All these are the lots of the Niger Delta biosphere in Nigeria since the inception of oil exploration and exploitation. In the context of trauma theory, it is both emotional and psychological injuries, inflicting pains and agony and mounting on feelings and emotional damage.

Moreover, it is not only animals that are affected by this violence, but humans too. This is corroborated by Mr Rufus when he says: *“the river does not only smell of animal dead matter but teems of human body parts. Once we saw a human arm severed at the elbow bobbing away from us, its fingers opening and closing, beckoning”* (34). This scene can create both emotional and environmental distress. When this happens, cancer, heart diseases, respiratory diseases, and so on, will descend on the people. This is because the environment is imbued with venomous odour and also an eyesore, too. In trauma theory, this is haunting and overpowering that the conscious mind is unable to accept it and thus forgets it (Freud, 1920). As for the environmental degradation, Mr. Rufus adds that the surroundings are forsaken in ruin and deterioration. Hear him: the villages are abandoned

*“as if a deadly epidemic has swept through it...Abandoned oil-drilling paraphernalia were strewn around...behind one of the houses we found a chicken pen with about ten chickens inside, all dead and decomposing, the maggots trafficking beneath the feather”* (p7).

The picture here will breed pathogens capable of unleashing flu, meningitis, shingles, measles, norovirus, rotavirus, viral gastroenteritis, etc. With this, it is obvious that the Niger Delta region of Nigeria has been undergoing serious bio-convulsions in the hands of the oil companies for so long a time now with the Federal government aiding and abetting their bio-crime activities.

On the other hand, Zilayefa in Agary's *Yellow Yellow* paints another picture of the environmental debasement when she describes her childhood experience with an oil spill as a bioweapon:

*During my second to last year in secondary school, one of the crude oil pipes that ran through my village broke and spilled oil over several hectares of land, my mother's farm included. I was at home that day when she returned shortly after leaving for the farm. When she got to the house, she knocked on the door and said very coolly, “Zilayefa, bring me my bathing soap and sponge”. As I was wondering why she needed them, I saw that her legs were stained black* (p3).

Some of the diseases that could come from oil spills include DNA alterations, neurological impairment, endocrine toxicity, and genotoxicity, to mention but a few. All these cause slow death in humans, hence, potential bio-weapons. So, it is clear from the accounts so far that oil can eliminate animals and birds through poisoning or stifling. What is more, it ravages the land. Therefore, it is good that the oil companies should be biosafety-conscious and as well, adopt best global practices so as to halt the threats posed by the oil spill. By so doing, environmental sustainability will be achieved in the region.

Furthermore, gas flaring is another bio-weapon being unleashed against the Niger Delta people and their environs. In *Oil on Water*, Dr Dagogo Mark is used by the writer to show the evil of gas flaring. Gas flaring is the burning of natural gas during extraction. Gas flaring releases carbon dioxide and methane into the air. These two things are dangerous to health as

they kill stealthily. Gas flaring can cause stroke, damage to the eyes and liver, birth defects, hypertension, skin diseases, cough, fever, respiratory and heart diseases, among others. The people at first are joyous that gas flaring illuminates their environment at night. They call it “the fire of Pentecost”. This is massive ignorance on their part. The oil companies know the danger inherent in the flare but deliberately kept mute. Doctor Dagogo keeps warning the people about the dangers of this flaring but they do not listen until their animals begin to die in their numbers, with their farmlands scorching largely and including its attendant health challenges. The doctor collects samples and tests in the lab only to discover that the toxins in gas flaring are high. After realizing this, more number of people became sick, with some giving up the ghost with immediacy (p145). To crown it all, Rufus reports more disheartening bio-terror attacks metaphorically when he says: “Soon we were in a dense mangrove swamp; the water underneath us had turned foul and sulfurous; insects rose from the surface in swarms to settle in a mobile cloud above us, biting our arms and faces and ears...and the foul smell that clung to our hair, and the itch on our grime-smeared faces” (9-11). Honestly, this is really an ugly but unforgettable experience for the two journalists. Imagine what a society with this kind of incident will look like. The entire environment is a receptacle for endemic diseases. The question is: who is to blame? The Federal government that is supposed to activate the Regulatory Capture mechanism within its power is looking away. Yes, it is only when the head wearing a hat shakes that the hat will shake. By implication, they are an accomplice in the bio-war against the oil-rich region and its people. In the face of all these, Sule Egya rightly observes that since the Niger Deltans are predominantly engaging in petty trading, farming, and fishing as occupations, with the soils damaged, the waters polluted, the air invaded by permanent gas flares, and the debasement of the fauna and flora, the people become extremely vulnerable (62). By extension, in *Yellow Yellow*, Admiral confesses the federal government's involvement in the bio-war on the people and their environment as reported here thus: *They talked about how the oil companies are using the Nigerian armed forces as their private security details to terrorize and sometimes to kill innocent innocent villagers who questioned the inequity of their situation... (154)*. This is what the United States Institute of Peace describes as the use of violence against civilians, with the expressed desire to cause terror or panic in the population (4) under terrorism. To crown it all, in Habila's *Oil on Water*, the Federal government in order to stop the restiveness of the Niger Delta youths through the soldiers, unprecedented violence is meted out to the militants as well as the innocent people. For instance, one of the military men in the area called Major is used by the writer to show how they dehumanize and intimidate the residents. Listen to Mr. Rufus as he reports it:

*“you call yourselves freedom fighters? To me, you are just crooks and I will keep hunting you down and shooting you like mad dogs. This country is tired of people like you. Sergeant, bring the water can. The Major raised the can and started to pour the water on the head of the man on the outer right. Then, the unmistakable acrid smell reached me. Is he pouring petrol on them? The Doctor nodded. I witnessed the brutal anointing in silence, smelled the reek of petrol hanging in the air, pungent, and wondered how the men could stand it. Already I feel sick and dizzy from the fumes” (p54).*

Mahatma Gandhi describes the action of the Major here as a crime against humanity. It is an outright terrorism. It is depressing. It is one of the reasons the story of the Niger Delta area of Nigeria is a traumatic one. Major believes that violence by the militants in kidnapping oil workers and vandalizing pipelines will beget violence against them. The action of the Major above is an example of “undesired events” in trauma theory. In fact, it is a trans-historical

trauma because trauma is not only inherently somatic but also can transmit through “survival messages”. The story of environmental degradation and pollution, as well as brutality on the region and people, has been a generational thing. Zilayefa confirms this when she says “There were generations of yellows in the Niger Delta area, and each one had a different story” (p74). So, it is now obvious that oil spills, gas flaring, and pollution could be used as bioweapons. They serve as breeding grounds for all kinds of mortal and terminal diseases that ravage both aquatic and terrestrial lives as witnessed in the quotations so far.

## DISCUSSION

From the analysis above, it is unmistakable that bioterrorism is a grim reaper and *lulus naturae* in every country that has oil companies exploring and exploiting oil and gas. These extractive industries will only kill the land, air, water, humans, and animals using slow, violent, mortal, and terminal diseases through oil spills, gas flares, and pollution. It causes a severe, lasting emotional shock and pain each time the mind turns on the reports as extracted from the texts in the research analysis. This has been a nasty episode in Nigeria’s oil-rich region.

However, a lot of factors are attributed to the cause. The chief one is economic interest. The interest is profit-oriented at the expense of biotic and abiotic factors in the environment. An oil company is an instrument of industrial capitalism which cares less about sustainability. The entire biosphere is put to death and ruin through violence. This opens a wide door for all kinds of deadly attacks of endemic killer ailments with psychological, social, economic, political, and even cultural implications.

Therefore, the government and other relevant agencies saddled with the responsibility of regulating the oil companies should be proactive to end the act of using oil spills, gas flares, and pollution as potential bio-weapons against host communities of the companies. This is why the paper encourages more research on this topic to be able to register a visible, collective voice of reason on the attitudes of the extractive industries and those regulating them to see the health implications their actions and inactions expose the ecosphere to, ends now.

## Recommendation

The paper urges the oil companies operating in the Niger Delta region of Nigeria and elsewhere in the world to be guided by the principle of international best practices. They should stop sacrificing tomorrow’s needs on the altar of today which endangers lives in diverse proportions. When this is kept on the front burner, there is no doubt that environmental sustainability will be their watchword without preaching and prodding.

## CONCLUSION

To sum it up, the use of oil spills, gas flares, and pollution to terrorize the oil-rich region of Nigeria is a deliberate one. All is because of economic interest since Nigeria is a capitalist country that cares less about sustainability.

The effect is biosphere destruction. Since there are categories of bio-weapon agents, the oil companies, the Federal government, and the militants are all seen as causative agents here, killing, maiming, suffering, and impoverishing the region for the sake of economic development through exposure to both mortal and terminal diseases. As a result, both aquatic and terrestrial lives are subjected to different trauma conditions.



This is condemnable. Therefore, this paper posits that this petro-capital attitude of the government and oil companies will never stand the region in good stead, but environmental sustainability practices.

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