



JEREMY BENTHAM'S UTILITARIAN THEORY, CAPITALISM AND GLOBAL INDUSTRIAL POLLUTION

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Abstract: Market-oriented industrial capitalist production has simultaneously raised pleasurable human living standards tremendously and inflicted so much excruciating pain on humanity through pollution. Environmental Impact Assessment (EIA), is an internationally standardised tool for measuring the possible, real and subtle negative outcomes of industrial production as an integral component of the development of capitalism. This paper theorised on the global reality that industrial development comes with the indispensable contradictory effects of pleasure and pain. It investigated the negative dimensions or implications, in terms of a terribly devastated environment, of the celebrated wonders of capitalist industrial production in the contemporary world. It also argued that efforts at the mitigation of environmental pollution through impact assessment policies would not achieve much success due to the functional dynamics of the capitalist market that controls and directs global industrial production and consumption. It is an essentially qualitative study that relied on secondary sources of data with logical content analysis of available facts and records as its method of analysis. The theory of utilitarianism by Jeremy Bentham and J.S. Mill was adopted as its theoretical framework. The paper concluded that environmental impact assessment *per se* does not guarantee sustainable development and therefore recommended that peoples' environmental rights should be adequately protected despite the lure of industrial investment and development.

Keywords – Environment, Industry, Capitalism, Pollution, Development

Introduction

Three key issues this paper seeks to address are those of the innovative capacity of capitalism, the profit-motive of industrial production and the pleasure and pain nexus in utilitarian theory. They would be approached theoretically and accordingly utilised to analyse the problem of environmental impact assessment for sustainable development. The contemporary quagmire of global environmental degradation should be viewed as an indispensable component of capitalist production. Marx (1977, p.111) applauded capitalism for having “accomplished wonders far surpassing Egyptian pyramids, Roman aqueducts, and Gothic cathedrals” and “has conducted expeditions that put in the shade all former exoduses of nations and crusades. The bourgeoisie cannot exist without constantly

revolutionising the instruments of production”. Characteristically, this process of capitalist accumulation, expansion and integration is stupendously pleasurable and desirable with the sophistication, durability, portability, convenience and comfort that its products afford. Its strength is embedded in the interminable capability of its merchandise to satisfy the needs of humanity.

The development of capitalism in Europe had coincided with the Industrial Revolution from the fifteenth century, during which there was an upsurge in the growth of scientific knowledge driven by the collaboration between scientists, technologists and industries (Kemp, 1993, p. 43). Furthermore, scientific and technological inventions and discoveries made possible the widening of intellectual progress. It

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shattered the fortified walls of feudal privileges and opened up the world for new levels of connectivity in production, commerce and consumption.

However, this process of transition was not as smooth and peaceful as expected. Indeed, hopes and expectations for the emergence of a new egalitarian society were cast in the shadows of doubt as the stark realities of modernity soon surfaced. As Gamble (1981, p. 131) luridly captured it:

Liberalism and socialism have triumphed. The agricultural economy and the absolutist states have vanished; a new society and a new politics have emerged, and new ways of understanding them . . . It arrived much more slowly than its advocates wanted and its opponents feared. It is only in the twentieth century that industrialism has become dominant in many areas of the globe. In the process, first, Western civilisation and then all other civilisations have been dismembered and radically transformed. In every country this process has produced a great resistance, but nowhere has the resistance been entirely sufficient to prevent the transformation taking place . . . What originated as creeds of revolt against authority, inequality and injustice, have become the officially approved ideologies of established regimes. In their origins they were crusading doctrines rooted in the new philosophy, the new economic relationships of civil society, and new images of political association. They shared common assumptions about the power and legitimacy of reason, and the desirability of economic progress, and the possibility of transforming human societies and human beings for

the better. They were universalist and internationalist in the sense that their principles were cast in a form which applied . . . to all individuals everywhere. They were doctrines of universal humanity. Their eventual triumph, however, was not quite as it had been imagined. Industrialism triumphed, but not in a form which many of the early devotees of industrial progress would have welcomed.

Capitalism, liberalism and industrialism arrived with loads of lofty promises in their philosophical creeds to launch an egalitarian society liberated from the feudal and sacerdotal captivity of the medieval era (Sabine & Thorson, 1973). Over time, however, rather than universal prosperity they created colonial enclaves for exploitation of resources as raw materials as well as the merchandise of manacles and death; the slave trade involving the transshipment of an estimated 11,000,000 black Africans between 1600 – the 1860s (Ogali, 2014, pp. 34-64). Domestically, the new society became polarised between wealthy capitalists and impoverished industrial labourers. In their quest for primitive accumulation, first, the peasants were, through legalised violence, dispossessed and alienated from their land and the benefits of industrialism denied them. Williams (1944) has established a direct link between plantation agriculture, with the use of African slave labour in Latin America and the Caribbean for primitive accumulation which funded the development of capitalism in Europe. Marx (cited in Ogali, 2014) established that direct slavery was just as much the driver of bourgeois industry as machinery, credits, self-interest, rationalism, etc. Without slavery there would have been no cotton, neither would there be modern industry without cotton. “It is slavery that has given the colonies their value; it is the colonies that have created world trade, and it is world trade that is the pre-condition of large-scale industry”.



Thus, the lure and pleasure of industrialism also contained the pain of slavery and the exploitation and impoverishment of industrial labour. Even for the rich, the consumption of the articles of industrial production has created the health and environmental crisis that is threatening the world with extinction. Environmental pollution could be defined as any activity by corporations or individuals that compromise the health of other persons and/or environment in a localized milieu, where the causal link could be clearly established.

The Problem

Capitalism, industrialism and liberalism succeeded feudalism as a more progressive and prosperous mode of production driven by the principles of liberty, equality, human and civic rights, vast economic opportunities, hedonistic social life, etc. All these and much more it afforded humanity, without doubt, but it also concealed a dark side that systematically eroded the pleasures so vastly delivered. There was tremendous improvement in life expectancy with unbelievable advancements in medicine and health technology but simultaneously gnawed the human flesh with new diseases from a polluted environment. The advanced capitalist West created for its sustenance and accumulation a coterie of dependent, exploited, impoverished and disease-stricken satellite states sentenced to perpetual underdevelopment and political instability. Such was the complexity of the brave new world of industrial modernity.

I am convinced . . . that capitalism cannot deliver world peace. It seems to me axiomatic that the expansionary, competitive and exploitative logic of capitalist accumulation in the context of the nation-state system must . . . be destabilizing, and that capitalism - and at the moment its most aggressive and adventurist organizing force, the government of the United States - is and will for the foreseeable future

remain the greatest threat to world peace. Nor do I think that capitalism can avoid ecological devastation. It may be able to accommodate some degree of ecological care, especially when the technology of environmental protection is itself profitably marketable. But the essential irrationality of the drive for capital accumulation, which subordinates everything to the requirements of the self-expansion of capital and so-called growth, is unavoidably hostile to ecological balance (Wood, 2003, pp. 265-266).

Richard Heede, at the Climate Accountability Institute in the United States, the world's leading authority on big oil's role in the escalating climate emergency reported from a study that "the top 20 companies on the list have contributed to 35% of all energy-related carbon dioxide and methane worldwide, totalling 480 billion tonnes of carbon dioxide equivalent (GtCO₂e) since 1965 (Sobowale, Vanguard News, October 10, 2019). They include Chevron, Exxon, BP, Shell and state-owned Saudi Aramco and Gazprom. Chevron, Exxon, BP and Shell alone account for over 10% of the world's carbon emissions since 1965.

Michael Mann, one of the world's leading climate scientists said, "The great tragedy of the climate crisis is that seven and a half billion people must pay the price – in the form of a degraded planet – so that a couple of dozen polluting interests can continue to make record profits. It is a great moral failing of our political system that we have allowed this to happen" (Sobowale, Vanguard News, October 10, 2019). Pollution comes from the use of products such as petrol, jet fuel, natural gas, and thermal coal. Others are from extracting, refining and delivering of finished fuels. Environmental impact of fossil fuels globally exploited by big oil is devastating. Heede said that "Leading companies and industry associations were aware of, or



wilfully ignored, the threat of climate change from continued use of their products since the late 1950s". Furthermore, these companies "spend billions of pounds on lobbying governments and portraying themselves as environmentally responsible". They spend as much as "\$200m each year lobbying to delay, control or block policies to tackle climate change". Such is the complexity of the problem this paper set out to tackle.

Aim and Objectives of Study

The general aim of this paper is to adapt the principles of pleasure and pain in utilitarian theory to determine the possibility of capitalist industrial production achieving sustainable development based on environmental impact assessment.

1. Utilise the principles of pleasure and pain in utilitarian theory to show the contradictory outcomes of capitalist industrial production.
2. Prove that by its own internal dynamics capitalist production inevitably and directly results in industrial pollution across the world.
3. Examine how industrial pollution endangers human lives through consumption of products and exposure to the effluents of industrial productive activities.
4. Demonstrate that the struggle for sustainable development based on environmental impact assessment is not likely to achieve the desired success.

Research Questions

1. How could the principles of pleasure and pain in utilitarian theory be utilised to show the contradictory outcomes of capitalist industrial production?
2. In what ways does capitalist production by its own internal logic inevitably and directly result in industrial pollution across the world?
3. How does industrial pollution endanger human lives through consumption of products and exposure to the effluents of industrial productive activities?

4. What is the prospect of the struggle for sustainable development based on environmental impact assessment achieving the desired success?

Methodology

The research design adopted for this study is essentially descriptive, qualitative and historical and therefore depended on mainly secondary sources of data such as internet sources, books and academic journals, newspaper reports and news magazines. Data gathered was analysed qualitatively through logical presentation and content analysis of historical records and archival documents.

Theoretical Framework

Theory of utilitarianism by Jeremy Bentham and J.S. Mill is the preferred theoretical framework for this study. Bentham's utilitarianism is a consequentialist normative theory constructed on the assumption that it is the consequences of human actions that count in determining the merit or otherwise of human actions and decisions measured according to their ability to bring about the happiness of the greatest number in the society or community or organisation. Human actions are weighed against the intensity of the pleasure derivable from them and the avoidance of pain. Such is the basis for the calculation of the hedonistic value of human actions, i.e. identifying the good with pleasure, like Epicurianism. In Bentham's view the happiness of the whole community is nothing but the sum of individual human interests. Based on the principle of utility the moral obligation on citizens is to take actions or decisions that bring about the greatest happiness of the greatest number. The greatest happiness principle or the principle of utility was articulated thus:

Nature has placed mankind under the governance of two sovereign masters, pain and pleasure. It is for them alone to point out what we ought to do, as well as to determine what we shall do. On the one hand the standard of right and wrong, on the other the chain of



causes and effects, are fastened to their throne. They govern us in all we do, in all we say, in all we think: every effort we can make to throw off our subjection, will serve but to demonstrate and confirm it. In words a man may pretend to abjure their empire: but in reality, he will remain subject to it all the while (Bentham, 2002, p. 1).

Happiness is the predominance of pleasure over pain. They determine or dictate to us in all we do, all we say and how we think. They guide what we ought to do, our standard of right or wrong, as well as the chain of causes and effects of our actions, which are right only if they produce happiness or pleasure and avoid pain. Utilitarianism dissociates morality from its religious foundations. All pleasures are alike in kind and differ only in quality. In other words, everyone's happiness counts the same. Utilitarianism is characterised by impartiality and agent-neutrality.

John Stuart Mill provided an extended explanation of Bentham's utilitarian moral theory in course of responding to criticisms of the theory. According to him, happiness meant pleasure and the absence of pain, though some kinds of pleasure differ from each other qualitatively. However, only those who have experienced the two are better judges of their relative qualities. "By happiness is intended pleasure, and the absence of pain; by unhappiness, pain, and the privation of pleasure" (Mill, 2016, p. 375). He distinguished between intellectual and bodily or sensual pleasures, the former being of a higher moral quality even though they provide less momentarily intense pleasure. Intellectual pleasure should therefore be promoted above others.

Since individuals do not have the time to measure accurately at every instance the effect of our actions, they should always be guided by moral rules. Human actions should therefore be guided by secondary or minimal moral principles. What then

motivates people or companies to do the right thing? For Bentham it is socially-imposed external sanctions such as punishment and blame, but for Mill, internal sanctions like self-esteem, guilt and conscience. The issue, in relation to industrial pollution, is whether Environmental Impact Assessment (EIA) is intended or designed as a socially-imposed external moral sanction (Bentham) or an internal sanction to prick the conscience of big business or any other profit-seeking organisation. Obviously, there are moral issues that big business or any other type of business in search of huge profits must contend with, either in the face of externally imposed sanctions, or the pressure of internal sense of guilt or conscience. How capitalism, industrialism and liberalism have contended with these social-philosophical forces is the crux of this paper.

Results and Discussion

1. Capitalism and the Political Philosophy of Utilitarianism

Before Bentham, the effort to construct a political theory based on the contradictory forces of pleasure or desire and pain or aversion, had been undertaken by Thomas Hobbes. It is the thesis of this paper that the choice of the principles of pleasure and pain was a perfect description of the true nature of the capitalist, industrial and liberal society that was taking shape after the demise of feudalism in Europe. From its manner of emergence through a revolutionary process that inflicted so much pain on the citizens, as experienced in England, France, America, etc. the clear trend was the necessity of revolutionary pain before the enjoyment of the pleasures of the brave new bourgeois society. The pain of revolution is then replaced with the pain of capitalist industrial pollution, which simultaneously produces the pleasures from the use of modern sophisticated gadgets, such as the cell-phone, laptop, synthetics, cars, trucks, the aeroplane, sea vessels, etc.

That which men desire, they are also said to love: and to hate those things, for which they have aversion. So that desire, and love, are the same thing;



save that by desire, we always signify the absence of the object; by love, most commonly the presence of the same. So also, by aversion, we signify the absence; and by hate, the presence of the object (Hobbes, 1968, p. 119).

Under feudalism where lords and the clergy reigned supreme, when learning, thinking and scientific investigation of natural and even social phenomena were adjudged heretical, what was paramount in the minds of political thinkers and activists was an impregnable desire for the foreshadowed idea of liberty as the foundation of the future liberal society. Liberty and equality were pleasurable desires that gained pre-eminence above all, but the attainment of which required the inevitability of the pains of war and revolution. Hence, the Thirty-Years war (1618-1648) resulting in the emergence of the early-modern absolutist state under the Treaty of Westphalia and the various revolutions (English 1640-1660; French 1789; American 1775-1783; Russian 1917) that created the pathways, identified by Moore Jr. (1993), as the routes to modernity, were contradictory forces, with pleasure/desire/appetite representing the positive, and pain/terror/aversion/death characterising the negative exigency of change. Coming against the formidable and sturdy edifices erected by the forces of feudalism the transition was not delivered on a platter of gold. Gamble (1981, p. 130) captured it so lucidly thus:

The forces arraigned behind the Reaction - Crown, Church, and Land - seemed more than sufficient to ensure its triumph against the fragile new doctrines of the Enlightenment and the Revolution. Yet from the start the conservative forces saw themselves on the defensive, a perception that proved one of their more accurate judgements. The new doctrines were securely anchored in the great social and political transformation that had begun

throughout Europe. The French Revolution alerted ruling classes everywhere to the danger; but it was already too late. The separation between state and society already accomplished paved the way for the rise of capitalist industry, the triumph of popular sovereignty, and the inexorable spread of scientific rationalism.

From a utilitarian standpoint war and revolution may be adjudged painful and unhappy conditions, and therefore apparently morally wrong. However, as a consequentialist normative philosophical doctrine, what should be paramount to utilitarian theory is the outcome of decisions and actions, and in this context the emergent liberal society with all its nascent principles of liberty, equality, human rights, the franchise, fraternity, mass production and mass consumption would justify the wars and revolutions that liberated mankind from the shackles of feudal privileges, hierarchy and oppression. From a liberal point of view, the bourgeois revolutions in Europe brought about the liberation and, therefore, the greatest happiness of the greatest number in modern consumptive capitalist society.

Without doubt modern capitalist industrial production has transformed the earth into a 'global village', thus creating and sustaining an epoch of pleasure, happiness and comfort that humanity never dreamt to taste in the ancient and medieval worlds. The crisis of industrial pollution is only a dialectical by-product of the indispensable productive capabilities of modern industry, a necessary evil that new policy frameworks like environmental impact assessment have been introduced to address, notwithstanding the doubtful prospects of success, the previous forces of liberation having been transformed into new instruments of oppression and exploitation. As Gamble (1981) correctly observed that what started as doctrines of revolt against authority, inequality and injustice have



been transformed into officially approved ideologies of established modern liberal regimes. The liberator of the past has become the new oppressor, deploying the same instruments with which it broke down the walls of feudal absolutism. Capitalism, industrialism and liberalism had triumphed but:

Their eventual triumph, however, was not quite as it had been imagined. Industrialism triumphed, but not in a form which many of the early devotees of industrial progress would have welcomed. Popular sovereignty triumphed, but in a manner, which raised new divisions instead of leading to universal peace and brotherhood. Science triumphed, but amidst growing fears about the consequences of its methods and its practical applications for the very survival of humanity (Gamble, 1981, p. 131).

Capitalism and industrialism have created so much opulence, pleasure, happiness, comfort, desirable luxury, market freedom and success, but the challenge is how to effect or ensure Hobbes' "aversion" of the current doom, or Bentham's "pain", of global industrial pollution.

2. The Creative Pleasure of Capitalism

Marx (1971, p. 113), who never even witnessed the last hundred years of the awe-inspiring sophistication that capitalism has brought to modern industrial production in the 20th century, acknowledged that the "bourgeoisie, during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together". Defining features of capitalism include possessive individualism, self-interest, competition, free-choice, open market, free wage labour, contractualism, capital accumulation, profit maximisation, expansionary investment, etc. (Macpherson, 1972, pp. 6-8). It is a mode of production driven by the profit motive, meaning not just making profit but also ensuring that the profit margin continues to widen without which the rate of profit would fall, leading to the possible collapse of the capitalist system

(Ake, 1981, p. 17; Brenner, 1998). Without doubt capitalism is innovative, encourages rational decision-making and optimum or prudent utilisation of available resources to achieve maximum benefit. The most practical demonstration of the working of capitalism, how through self-interest and self-love the capitalist produces primarily to make profit, but in the process satisfies the needs of the society, has been provided by Adam Smith, in his pioneering work on the "Wealth of Nations".

In almost every other race of animals, each individual, when it is grown up to maturity, it is entirely independent, and in its natural state has occasion for the assistance of no other living creature. But man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favour, and shew them that it is for their own advantage to do for them what he requires of them . . . It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity, but to their self-love, and never talk to them of our own necessities, but of their advantages (Smith, 2012, p. 19).

His primary motivation for engaging in production is not to satisfy human needs but rather to make profit by taking advantage of their condition. But since it is a competitive market, he/she must constantly engage in research in order to improve on the quality of the product and thereby cut a sizable proportion of the market. He seeks not just profit but, really, profit maximisation and there lies the reason for his innovativeness, ingenuity, rationality and constant revolutionization of the means of production. Industrial production or industrialism is the driving force behind capitalism.



However, industrialism was defined and evaluated, one of its characteristics which could not be ignored was the very rapid and continuous enlargement of material wealth, and this made the character and control of the economy and the role of government within it an abiding concern of the politics and the theories of industrial societies. As industrial capitalism became established more widely, so the categories of liberal political theory came to seem inadequate and the hopes of liberal revolutionaries unrealistic. Far from communities of independent and self-governing artisans and farmers being created, the monopoly of wealth and political power enjoyed by landowners under the old order was broken in the course of the bourgeois revolutions only for new concentrations of wealth and power to arise in the hands of the new lords of industry and finance (Gamble, 1981, p. 151).

Despite its inevitable negative outcomes capitalism and industrialism have completely revolutionised the mode of living of modern man, by revolutionising the means of production. The liberal scholar, W.W. Rostow (1953) categorised the stages of economic growth under capitalism into five (5), viz., the traditional society, the preconditions for take-off, the take-off, the drive to maturity, and the age of high mass consumption. This last stage and what he terms ‘post-industrial society’

currently attained by the advanced capitalist countries, are characterised by industrial boom in automobile, petroleum, electric-powered household devices and gadgetry, suburban real estate, durable consumers goods, ICT, ports, railways, bridges, airports, computers, mobile phones, spacecraft, iPhone, iPad, cashless financial services and the ATM, biotechnology, entertainment industry, the military-industrial complex, branding and packaging, sophisticated logistical systems, , goods now customised according to buyers’ specifications, internet marketing transactions, supermarkets and the debit card, etc.

To participate in mass consumption, both white-collar and blue-collar workers now receive better packages. Where this necessity becomes a serious threat to capitalist profit credit-purchase comes to the rescue, even as the consumer is tied to the apron-strings of the producer. “When technological maturity is reached, and the nation has at its command a modernized and differentiated industrial machine, to what ends should it be put, and in what proportions . . . to expand mass consumption into the range of durable consumers goods and services; to increase the nation's stature and power on the world scene; or to increase leisure?” Table 1, shows the astronomical rise in income levels in the advanced countries in this age of industrialism and mass consumption.

Table 1 The growth progression of the service sector and GDP per-capita income for some selected countries

Country	1960		1980		2000		2009	
	Service % GDP	Per-capita Income	Service % GDP	Per-capita Income	Service % GDP	Per-capita Income	Service % GDP	Per-capita Income
Ireland	52%	\$684	57%	\$5,230	56%	\$20,300	49%	\$37,600
Spain	-	\$396	57%	\$5,640	63.2%	\$17,300	71.6%	\$29,500
Italy	46%	\$804	53%	\$6,960	65.8%	\$21,400	73.3%	\$30,700
New Zealand	-	\$2,368	58%	\$7,700	69%	\$17,400	74%	\$28,000
Netherlands	45%	\$1,115	63%	\$11,700	69.7%	\$23,100	72.4%	\$40,500
United Kingdom	54%	\$1,379	65%	\$9,110	73%	\$21,800	80.4%	\$35,100
Japan	42%	\$470	53%	\$10,400	63%	\$23,400	75.7%	\$34,200
Austria	43%	\$935	57%	\$10,210	66.3%	\$23,400	69.1%	\$40,300



Finland	49%	\$1,172	57%	\$10,680	63%	\$21,000	68.2%	\$35,300
Australia	48%	-	-	\$11,080	71%	\$22,200	71.2%	\$41,300
Canada	61%	\$2,262	64%	\$11,400	66%	\$23,300	71.3%	\$38,700
Belgium	52%	\$1,278	62%	\$11,920	71.6%	\$23,900	77.2%	\$37,900
France	51%	\$1,386	61%	\$12,190	70.6%	\$23,300	79%	\$33,000
United States	58%	\$2,881	63%	\$12,820	80%	\$33,900	76.7%	\$47,400
Germany	41%	-	49%	\$13,450	68.4%	\$22,700	71.3%	\$34,700
Denmark	58%	\$1,383	64%	\$13,120	69%	\$23,800	76.1%	\$36,400
Norway	58%	\$1,444	54%	\$14,060	71.5%	\$25,100	57.8%	\$59,100
Sweden	53%	\$1,963	66%	\$14,870	67.3%	\$20,700	72.2%	\$39,000
Switzerland	-	\$1,731	-	\$17,430	66.1%	\$27,100	71.2%	\$42,900
Singapore	78%	\$394	58%	\$5,230	72%	\$27,800	72.8%	\$62,200
Korea	43%	\$155	44%	\$1,700	50%	\$13,300	57.6%	\$30,200

Source: Hunter, Geopolitics, History & International Relations, Vol. 4, No. 2, 2012, p. 44

Aldous Huxley's (2002) satire, through a fictional dialogue, parodies the insanity of the pleasurable consumptive drive in the post-industrial society of the future. "I do love flying, I do love having new clothes . . . old clothes are beastly . . . ending is better than mending . . . The more stitches the less riches . . . Every man, woman and child compelled to consume so much a year in the interest of industry. The sole result . . . Government's an affair of sitting, not hitting. You rule with the brains and the buttocks, never with the fists. For example, there was the conscription of consumption." The excitement, pleasure and happiness derivable from the gains and achievements of capitalism and industrialism have conveniently beclouded and buried the negative outcomes, through the control and effective manipulation of the mass media. To this end there was a thing called Christianity, i.e. an institution of the past, an ideological relic, cherished in the past but a contemporary absurdity, a clog in the wheel of progress of modern society. Ending, discarding or burning is better than mending and expanding the lifespan of old vestures, a habit that promotes the ethics and philosophy of under-consumption, but which contradicts the spirit of modern industrialism. Christian ethics and values of self-restraint, discipline

and simplicity are viewed as being antithetical to the needs of the new age and accordingly vilified.

3. The Toxic Pain of Industrial Pollution

Given its defining features enumerated above, it's not difficult to comprehend why capitalism (or industrialism) is the greatest pollutant as well as the greatest beneficiary of environment pollution. Industrial pollution is a very complex phenomenon, owing mainly to the tendency of companies to conceal their culpability. As noted earlier, capitalist investment and production are driven by the profit motive, the maximisation of which is difficult to sustain to enable the company remain in business. Pollution prevention often involves the adoption of a more environment-friendly technology, which could prove to be a very costly undertaking. Many companies would rather avoid this path and focus on technology with the capacity for speedy and improved quality of products. More often than not, rather than develop more environment-friendly technology, they engage in evasive and slippery tactics to avoid sanctions or prosecution. Pollution control eats deep into the profit margins of companies. Industrial pollution is the painful and pernicious aspect of the utilitarian trajectory and aversion is accordingly difficult to achieve.



Secondly, pollution is not always visible and could involve series of technical tests before culpability could be established. Some gases might be noxious and offensive, causing respiratory difficulties that would expose the company responsible. Others may not be so easy to detect. Gases like carbon monoxide are not very offensive but cause greater fatalities within the shortest possible time. In water the solubility of gases and chemicals also varies and therefore sometimes not easily detectable. Consequently, state institutions need to develop the appropriate technology independently that could be deployed to detect subtle pollution, a requirement that is very difficult to achieve in Third World countries. In most cases they rely on the same polluting companies' EIA documents for information on potential effects of production or projects.

Some of the measures that have been put in place to control industrial pollution in the US include the Community right-to-know Act, which has two main purposes: to provide communities with information about potential chemical hazards; and to improve planning for chemical accidents. The Nigerian equivalent is Freedom of Information Act. The Toxic Release Inventory (TRI) contains information on annual releases of toxic chemicals to the environment, while the Aerometric Information Retrieval System (AIRS) is the management system of the US national database for ambient air quality, emissions, and compliance data. The Human Health and Ecotoxicity Database (HHED) contains a number of indices of toxicological potency (Hettige et al, 1995, pp. 4-8).

Most developing countries have little or no industrial pollution data (Hettige et al, 1995). The World Bank has developed the Industrial Pollution Projection System (IPPS). As the name implies, owing to the difficulty in obtaining data on industrial emissions estimation or projection methods, which are characteristically inaccurate, are usually adopted by regulatory agencies, including the World Bank. This is

indicative to the complexity of the crisis of industrial pollution and human health. The estimation is done for countries, regions, urban areas and proposed new projects. IPPS was developed due to the fact that industrial pollution is greatly affected by the volume of industrial productive activity, the sectoral differences, and the “process technologies” that are adopted during production.

This data base was created by merging Manufacturing Census file data with US EPA data on air, water and solid waste emissions. It contains complete environmental, economic and geographic information for approximately 200,000 factories in all regions of the United States. The first prototype of IPPS spans approximately 1,500 product categories, all operating technologies, and hundreds of pollutants. It can separately project air, water, and solid waste emissions, and incorporates a range of risk factors for human toxic and ecotoxic effects. It can also project emissions of some greenhouse gases and several compounds which are hazardous to the ozone layer (Hettige et al, 1995, pp. 1-2).

Air pollutants are mobile particulates in form of fine liquid or solid particles such as dust, smoke, mist, fumes or smog found in air emissions. In heavy concentrations, airborne particulates are associated with greater morbidity and mortality from respiratory diseases. Sulphur Dioxide (SO₂): Sulphur dioxide is a heavy, pungent, colourless, gaseous air pollutant formed primarily by fossil fuel combustion. It is associated with morbidity and mortality from respiratory diseases, causes acid rain which has damaged huge forest tracts and raised the acidity in numerous lakes beyond the point where indigenous



fish species can survive. Acid rain also degrades concrete, mortar, marble, metals, rubber and plastics.

Nitrogen Oxides (NO₂): Nitrogen dioxide (NO₂) and nitric oxide (NO) are oxides of nitrogen. The primary source of NO is thermal combustion of fossil fuels, which emits NO. Ecological impacts cause acid rain and affect the ozone layer. Inhaling concentrated NO₂ damages the respiratory tract, resulting in life-threatening pulmonary diseases. Carbon Monoxide (CO) is a colourless, odourless, and tasteless poisonous gas produced by incomplete fossil fuel combustion. CO binds with haemoglobin in human blood 200 times faster than oxygen. Thus, the blood's ability to carry oxygen to tissues is significantly impaired after exposure to only small concentrations of CO. High doses of CO can result in heart and brain damage, impaired perception and asphyxiation, and low doses may cause weakness, fatigue, headaches and nausea (Hettige et al, 1995, p. 36).

Volatile Organic Compounds (VOC) describes a class of thousands of substances used as solvents and fragrances. VOCs are particularly important in the petrochemical and plastics industries. Human exposure to VOCs is mainly via inhalation. Some VOCs appear as contaminants in drinking water, food, and beverages. Many VOCs are suspected carcinogens. Acute effects from industrial exposures include skin reactions and central nervous system effects such as dizziness and fainting. Organic water pollutants are oxidized by naturally-occurring micro-organisms. This 'biological oxygen demand' removes dissolved oxygen from the water and can seriously damage some fish species which have adapted to the previous dissolved oxygen level.

Suspended Solids (SS): Small particles of non-organic, non-toxic solids suspended in waste water will settle as sludge blankets in calm-water areas of streams and lakes. This can smother plant life and purifying

micro-organisms, causing serious damage to aquatic ecosystems. The loss of purifying micro-organisms enables pathogens to live longer, raising the risk of disease. When organic solids are part of the sludge, their progressive decomposition will also deplete oxygen in the water and generate noxious gases (Hettige et al, 1995, p. 37).

Toxic Pollutants - Many chemicals in industrial emissions are poisonous to humans, either on immediate exposure or over time, as they accumulate in human tissues. Humans can ingest severely damaging or fatal quantities through repeated exposure, or by consuming plants or animals in which these compounds have accumulated. Toxic chemicals may cause damage to internal organs and neurological functions; can result in reproductive problems and birth defects. Quantities and length of exposure necessary to cause these effects vary widely. Benzene and asbestos are known carcinogens linked to leukemia and lung cancer (Hettige et al, 1995, p. 37).

Bioaccumulative Metals: In bioaccumulation, relatively low concentrations of contaminants in air, water, soil and plants become far more concentrated further up the food chain. Some metals can be converted to organic forms by bacteria, increasing the risk that they will enter the food chain. Bioaccumulative metals are particularly dangerous because they are dissipated very slowly by natural systems. They may cause both mental and physical birth defects. Metals can also become rapidly oxidized and converted to soluble form when sediment is exposed to oxygen. Some of the metals which are commonly measured



and particularly dangerous are mercury, lead, arsenic, chromium, nickel, copper, zinc and cadmium (Hettige et al, 1995, p. 37).

From the above, it is scary that virtually everything used at home and in the office is a product of industry and has a negative health implication through inhalation, consumption, contact, ingestion and injection. While so much happiness, pleasure, joy and comfort is afforded by the use of these products in accordance with their utilitarian value, the inevitable pain from the negative effects remains a challenge to humanity. While the comfort prolongs life the intake from a constantly polluted environment reduces the lifespan. That is the contradiction that implores humanity in this modern age of industrialism.

4. Environmental Pollution Control Measures in Developing Countries

Developing countries today tend to focus on economic growth and development at the expense of environmental pollution controls, in much the same way as Japan acted not so long ago. Such a situation can lead to major public health problems. The standard procedure for grievances and requests for mediation over pollution issues is to apply to the relevant government agency. Mediation by a government agency may not always provide satisfaction for the affected parties, who are generally in a weaker position than both government and industry. In such cases, recourse to legal action may be taken. Victims of pollution in developing countries have often taken legal action against governments and companies and won major victories, such as the Ogoni in the Niger Delta against Shell.

There are only few existing or new political movements taking on environmental polluters, an apparent vacuum or void, a situation in which capitalism mainstreams. However, the corporate world in post-industrial society is also looking for the answers and adopting a variety of approaches such as *corporate social responsibility (CSR)*, civic

responsibility, financial empowerment, aid to the less fortunate, special projects, ethics and standards, environmental responsibility and sustainability, community development, local, national, or global citizenship, philanthropy, etc. to environmental sustainability.

5. Obstacles to Environmental Impact Assessment

Richard Heede, at the Climate Accountability Institute in the United States, the world's leading authority on big oil's role in the escalating climate emergency reported from a study that "the top 20 companies on the list have contributed to 35% of all energy-related carbon dioxide and methane worldwide, totalling 480 billion tonnes of carbon dioxide equivalent (GtCO₂e) since 1965 (Sobowale, Vanguard News, October 10, 2019). They include Chevron, Exxon, BP, Shell and state-owned Saudi Aramco and Gazprom. Chevron, Exxon, BP and Shell alone together have accounted for over 10% of the world's carbon emissions since 1965.

Michael Mann, one of the world's leading climate scientists said, the "great tragedy of the climate crisis is that seven and a half billion people must pay the price – in the form of a degraded planet – so that a couple of dozen polluting interests can continue to make record profits. It is a great moral failing of our political system that we have allowed this to happen . . . spend billions of pounds on lobbying governments and portraying themselves as environmentally responsible . . . \$200m each year lobbying to delay, control or block policies to tackle climate change" (Sobowale, Vanguard News, October 10, 2019).

Companies often support environmental protection but act differently in defence of the higher value of profit maximisation. The technology and industrial best practices are readily available to make refineries safer, cleaner and more tolerable, if not exactly safe and clean, but Big Oil's executives and their lobbying agencies, effectively utilising deregulation mantras take every possible opportunity



to fight for fewer environmental and safety requirements, less oversight, and less control, and in most cases they tend to succeed (Juhasz, 2009). The question remains the possibility of successful Corporate Social Responsibility (CSR) and Environmental Impact Assessment (EIA) in the face of global capitalist drive for profit maximisation.

Companies often support environmental protection but act differently in defence of the higher value of profit maximisation. The customised technology and best practices for saner industrial production habits have been incorporated into the current principle of corporate social responsibility more for deceptive purposes than the actual reduction of pollution possibilities. Big Oil runs a big budget not for the benefit of humanity but rather to ensure limited control and maximise profit at the expense of environmental and human health (Juhasz, 2009). The question remains the possibility of successful Corporate Social Responsibility (CSR) and Environmental Impact Assessment (EIA) in the face of global capitalist drive for profit maximisation.

Poverty and susceptibility of public office holders to being bribed, particularly in Third World countries, by foreigners, is a serious obstacle to the implementation of regulatory policies. Even in the advanced countries bribes are given because there are receivers. Leaders of host communities also compromise because of widespread poverty and the fear of politicians to relapse into poverty. Weak institutions are often weakened the more by the activities of strong men put in charge of public institutions who compromise moral standards with impunity, a trend that is prevalent in developing countries.

Conclusion

In conclusion, environmental impact assessment, driven by regulatory agencies, is necessary and expedient if the human race could hope for a cleaner environment. It is living, rather than dead human beings that can enjoy the advantages of industrial

development. Technological development is supposed to improve on the quality of life of human rather than destroy the same. As cleaner sources of energy, such as solar energy, are discovered and utilised a safe global environment is possible. But capital accumulation and profit maximisation remain the most serious obstacles to a healthy environment.

Recommendations

Based on the aforesaid this paper recommends as follows:

1. Industries must show commitment to a cleaner environment. They should thrive to develop new technology or take advantage of available improved and environment-friendly technology with a view to reducing the impact on the environment of industrial production.
2. Environmental impact assessment and corporate social responsibility must be relentlessly and vigorously pursued. Companies that flout environmental impact assessment regulations should be severely sanctioned to deter them from causing further damage on the environment.
3. Environmental laws should be strengthened for more effective regulation. Such laws, regulations and policies should be strictly enforced or implemented to protect the host communities.
4. Peoples' environmental rights should be adequately protected against capitalist profit. The drive for profit should be mitigated by environmental rights of the people in host communities, which should be given priority over the profit motive of companies.
5. Pollution Awareness Campaigns should be deployed to constantly remind both citizens and firms of the environmental implications of their activities. Environmental protection should be made a general principle of individual and communal safety as personal



- safety is meaningless in a polluted environment.
6. Improvement in the level of expertise in pollution control technology. This is where Third World countries are most vulnerable as they are technologically backward. Level of expertise in pollution technology matters because most of them work with information provided by MNCs, which may not be correct. Pollution control research and surveys should be constantly conducted to provide the information or database on which regulatory agencies can act.
 7. Environmental pollution issues have become so diverse that a ministry of environment may not be able to cover all aspects. This calls for structural differentiation and functional specificity (Ake, 1979) through the establishment of administrative bodies armed with a clear, direct and specific mandate to enforce environmental laws.
 8. Environmental standards and emission limits should be clearly established and strictly enforced by the various levels of government, including local government at the grassroots.
 9. Police prosecution and penalties for pollution offences should be strictly enforced. Communities should be granted the right to seek the enforcement of their rights through legal action. Financial assistance for pollution reduction within specified ranges could be adopted to encourage citizens embrace anti-pollution policies. Governments can also provide incentives to encourage companies to reduce pollution in their areas of operation.
 10. Environmental assessments and the training of environmental pollution control personnel should be sustained and compensation plans for pollution victims effectively executed. Public opinion and social movements, including civil society organisations should

keep both government and the industrial ensemble constantly on their toes through their campaigns for a pollution-free society.

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