LWATI: A Journal of Contemporary Research, 7(2), 13-27, 2010
ISSN: 1813-2227

The Intervention of Adult Education in Surface Water Pollution in the Niger-Delta Region of Nigeria

Felix Chaba
University of Jos, Nigeria

ABSTRACT

Surface water is undoubtedly one of the most precious natural resources that exist on our planet. The most unfortunate circumstances that man has found himself in, is the pollution of surface water bodies. In the past, the quest for wealth and to satisfy human wants and needs, man has hampered and greatly polluted the environment in which he lives in. The vulnerability of surface water in the Niger-Delta Region of Nigeria to frequent oil spills and has other pollutants have had negative effects on the fragile mangrove ecosystem, wildlife, aquatic resources and most importantly on man. It is in this regard that the intervention of adult education came into being to see that the problems of surface water pollution in the Niger Delta Region is being addressed through its various programmes such as literacy, vocational/functional literacy programmes, community education, continuing education.

INTRODUCTION

The most precious natural resources that exist on our planet are undoubtedly water, which comprises over 70 percent of the earth surface. Without the seemingly invaluable compound comprised of hydrogen and oxygen, life on earth would have not been in existence. Surface water is very essential for everything on our plant to grow and prosper. Although, we as human recognize this fact, we disregard it by polluting our rivers, streams, lakes, wells and so on. Surface water pollution is an environmental problem, which would be reviewed in high extent with its major focus on Niger-Delta Region of Nigeria.

According to Okorie (2003:43), "it is crystal clear that over 80% of the industries in the Niger Delta are oil-related ones". This also accounts for the large quantities of surface water pollution, which comes out of these oil industries and oil-related industries, found within the Niger Delta. In the quest for wealth, and to satisfy our wants and needs as human, our activities

are slowly but surely harming our planet and the Niger Delta in particular, to the point where organisms are dying at a very alarming rate.

In addition to innocent organisms dying off, our drinking water has become greatly affected. As humans we cannot live without making use of water for domestic, industrial, health, recreational purposes and so on.

The Niger Delta is blessed and adored by nature with vegetation and fresh surface water bodies, but today, the beauty of this scenery is gradually ebbing. This is as a result of the water bodies being greatly adulterated with various industrial wastes within the region. In order to combat surface water pollution in the Niger Delta, we must understand the problems and become part of the solutions.

NIGER DELTA AS A GEO-POLITICAL REGION

Niger Delta is a geo-political region with a landmass of 700,000 km^2. There are about 20 ethnic groups with Ijaw, Yoruba, Edo, Igbo and Delta Cross as the five major linguistic groups identifiable in the Niger Delta. The region has about 800 communities that associates with linguistic communities and ethnic group which extends beyond its boundaries and inhabits over seven million people (NDES, 1997:35). The Niger Delta covers the present Akwa-Ibom, Bayelsa, Delta and River States (Okoko and Ibada, 1997:57). It also lies within the Ibo Plateau and Cross River Valley (Willink's Commission, 1957:9). By extension, we can assume all the states in the South-South geo-political zone of Nigeria to be fully or partly Niger Delta.

Galloway (1975), from the geological parlance submitted that the Delta is a modern Delta as it is under 100 million years old. It occupies the 10^{th} position among the world's most prominent Deltas while Ofomata (1975) on the other hand, observed that the Niger Delta is a horizontal structure of low relief formed from aggradational materials. It lies between latitude 40 and 60 North of the Equator and longitude 50 151" and 70 361" East of Greenwich Meridian. It is bounded by the Forcados River to the West, the Atlantic Ocean to the South, and the Imo River to the East. It has an apex North of Ogu in the Ogba-Egbema-Ndoni Local Government Area of River State (Amakiri, 2003:14).

The terrain especially in the wetland is a very difficult one, mainly due to its swampy nature. The numerous tributaries and distributaries that span the area ended up sub-dividing it into smaller islands, which constitutes an impediment to easy tracing of sources of surface water pollution, measures of controlling pollution and even development in general.

Riverbanks, coastal and marine environments have been impaired by continuous discharge of pollutants, mainly from Land-based Activities (LBA) (Onokerhoraye, 1995). Such pollutants include domestic sewage, petroleum, carbons, dredged material and garbage. The effect of these products contributed to a reduction in the value of aquatic resources on which a good number of the people in Niger Delta depended for their livelihood.

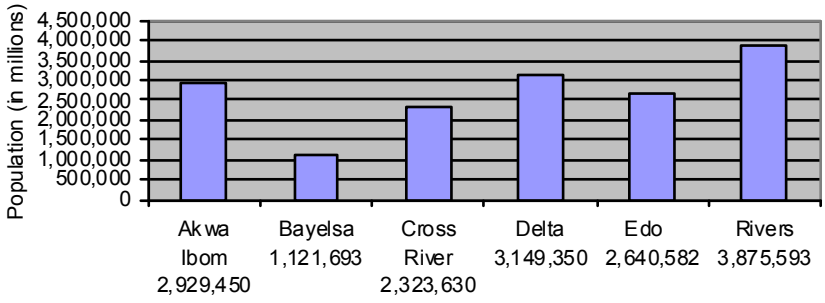
Onokerhoraye also added that the quality of near-shore and coastal surface water has been on the decline due to intensive petroleum activities in the Nigeria Delta. The vulnerability of the coastal belt to frequent oil spills has had negative effects on the fragile mangrove ecosystem, wildlife and even aquatic resources. Locally dugout well water is not often portable due to surface run-off contamination, tidal influence and the recent use of fertilizers that pollute most streams (Okorie, 2003:0).

RESOURCES IN THE NIGER DELTA

The Niger Delta is blessed and endowed with abundant and varied natural resources. Its potentials can feed the whole of West Africa and have sufficient commodities for export (World Bank Report cited in Environment Watch, April, 1998:6). These resources which are evenly distributed in the area include, crude oil, clay, timber, fishes, gas, arable land, tourist centres, water bodies (stream, rivers, lakes, wells, seas and ocean), forest and economic trees like palm trees and raffia palm. Among these resources, crude oil is the most exploited. Nigeria's position in the World's oil production ranking owes its credit to the area. Nembe creek and Gboran oil fields in Bayelsa State as well as the Okan field in Akwa Ibom State have the potential for one billion barrels of oil.

The Niger Deltans are also blessed with vast arable land, which has the capacity of expanding the agricultural base of the area but has been grossly polluted by oil spills. The activities of the oil companies have reduced the fertility, size and quality of water supply to the farmlands.

The Bar graph below shows the state wise distribution of human resources in the Niger Deltans population.



Source: National Population Commission.

Sources of Surface Water Pollution

According to Iwena (2002) defined pollution as the release of substances into the environment i.e. water, air or land in quantities or to the level that are harmful to man, animals, organisms and plants. Surface water pollution occurs when a body of water is adversely affected due to the addition of toxic materials to the water and/or makes it unfit for its intended use. The two types of sources of water pollution that exist are point source and non-point source.

- **Point Sources** of pollution occur when harmful substances are emitted directly into a body of water for example industrial waste discharge, oil spill etc. illustrates point source water pollution.

- **Non-point Source delivers** pollutants indirectly through environmental changes. An example of this type of water pollution is when fertilizer from a field is carried into a stream by rain, in the form of run-off, which in turn affects aquatic life and the quality of the water for drinking.

Technology exists for point sources of pollution to be monitored and regulated, although political factors may complicate matters. Non point sources are much more difficult to control and are majority of the contaminants in streams and lakes in the Niger Delta.

CLASSIFYING SOURCES OF WATER POLLUTION

The major sources of water pollution can be classified as municipal, industrial and agricultural.

1. **Municipal water pollution** consists of waste water from homes and commercial establishments. Over the years, the main goal of treating municipal waste water was simply to reduce its content of suspended solids, oxygen-demanding materials, dissolved inorganic compounds, and harmful bacteria. But, in these modern times, however, more stress has to be emphasized on improving the means of disposal of the solid residues and a modern process of municipal treatment from a treatment station or plant to the developed countries like America, China, Japan etc. The basic methods of treating municipal waste water fall into three stages which are the primary, secondary and tertiary treatment stages. Eziashi (2007) in turn suggested that urban dwellers need to be made more aware of the problems and shown the benefits of good solid environmental problems of waste dump but also to prevent municipal water pollution generated by these wastes.

2. **Industrial water pollution** differs considerably both within and among industries. Industrial discharges depend not only on their collective characteristic, such as biochemical oxygen demand and the amount of suspended solids, but also on their content of specific inorganic and organic substances. Okopido (2003;4) observed that "heavy metals such as lead, calcium, chromium and organic compounds such as PCB's Phenols and petrochemicals continue to be released into the environment from such activities as raw materials sourcing, solid waste disposal, discharge of untreated industrial manufacturing waste."Looking at industrial waste in Port Harcourt as a case study, a bulk of industrial waste comes from the Trans-Amadi Industrial Layout. We also have industrial waste coming from NNPC refinery and the Eleme Petro-chemical Company all located in the Eleme district of Port Harcourt city. Other places include the NNPC in Warri, oil servicing company and industries which are found in Warri. Bonny Island also generates great amount of industrial toxic waste emanating from NLNG Plants (Nigerian Liquefied Natural Gas) and other Oil Company flow stations and so on, which contributes immensely in polluting the surface water.The misuse, deliberate or accidental release of these chemicals from industries, oil related industries and other types of industries within the Niger Delta, into the water bodies has been associated with potential health risk to human and ecological hazards and disasters.

3. **Agricultural water pollution**. These include commercial livestock and poultry farming, as the source of many organic and inorganic pollutants in surface waters and ground water also. These contaminants include both sediments from erosion cropland and compounds or phosphorus and nitrogen that partly originate in animal wastes and commercial fertilizers. Animal wastes are high in oxygen demanding material, nitrogen and phosphorus, and they often habour pathogenic organisms. Wastes from commercial feeders are contained and disposed of on land, their main threat to natural or surface waters, therefore, is from runoff and leaching. Control may involve setting basins for the collection and treatments of liquids, limited biological treatment in aerobic or anaerobic lagoons, and a variety of other methods. Even though it might seem difficult because of the geographical nature of the Niger Delta, which is characterized by wetlands and lots of tributaries and distributaries.

CAUSES AND EFFECTS OF SURFACE WATER POLLUTION.

The major causes of surface water pollution and their resultant effects would be discussed in relation to man and his environment in the Niger Delta. The

causes which ranges from runoff/wash off of top soil, sewage disposal, release of toxic materials from industries, contamination from pathogens, oil spills, gas flaring etc should become one of the most crucial environmental problems in recent times owning to the fact that, the end product or aftermath effect of almost all other environmental problems is on the water bodies especially on the surface water body. Some of the ways by which surface water pollution occurs in the Niger Delta and their effects are:

a. Surface water pollution is caused when silt and other suspended solids such as soil, wash off ploughed fields, construction and logging sites, urban areas and eroded riverbanks after rainfall. On the one hand, Lake, Rivers and other water bodies undergo *Eutrophication* under natural conditions. This is an aging process that fills in the water body with sediments and organic matter. When these sediments enter various bodies of water (which is one of the major sources of livelihood) fish respiration becomes impaired, plant productivity and water depth becomes reduced, and aquatic organisms and their environment becomes suffocated. Such as the deltaic region of River Niger where coastal depletion and flooding occurs, since these areas are riverine. For example, Bayelsa State has large part of its area as riverine. Gesiye cited in Okorie (2003:74) pointed out that, "out of an area of 9695 km^2 which Bayelsa State covered, 8433 km^2 is riverine."

The effect of the Geisye's revelation is that a reasonable quantity of the coastal soil is lost to the river each year due to flooding. Seasonal flooding in the riverine areas has polluted most of the surface water bodies and made life for the people in the area very uncomfortable along sides the aquatic animals.

b. Another cause of surface water pollution is in the form of organic materials which enters waterways in many different forms as sewage, as leaves and grass clippings, or as runoff from livestock feedlots and pastures. When natural bacteria and protozoan in the water breaks down these organic materials, they begin to use up the oxygen dissolved in the water. "Many types of fish and bottom-dwelling animals cannot survive when levels of dissolved oxygen drop below two to five parts per million" (Mackenzie, 1996:240). He also added that when this occurs, it kills aquatic organisms in large numbers which leads to disruptions in the food chain.

c. Surface water pollution is also caused by oil spillage. Oil spills pollutes surface water bodies in the form of oil, resulting from petroleum. The large-scale accidental discharges of petroleum are the major causes of surface water pollution in the Niger Delta region. Oil spills had and is still causing tremendous amounts of destruction in the Niger Delta. As a result of the non-challant attitude of the oil companies in addressing most problems emanating from oil exploitative activities in the region. It is on record that 40% of oil spills that occurred in the shell facilities worldwide between 1982 and 1992 took place in Nigeria. Amakiri (2003) cited in Okorie (2003:781) informed that:

"… 4835 oil spill incidents occurred between 1976 and 1999 resulting in a spill figure of 2,446,322 barrels of oil into the land, swamp and offshore

environments of the Niger Delta. Out of this quantity of oil spilled, 1,896,930 barrels were not recovered."

The profit-driven focus of the oil companies has made them to neglect the aspect of preserving their resources such as pipelines from rupturing to cause spills. Environmental Right Action (ERA) (2002), reported that Agip's oil spill at Etiama, a community close to Ogbolomabiri (Headquaters of Nembe West Local Government Area of Bayelsa State) was traced to her pipelines that was constructed in 1972 and have never been upgraded or replaced. The people have seen many spills but nothing like that of 13th May, 2000. Bassey (2003) further observed that, the exploitative stage as well as the transportation stages is not less hurtful. Infact, these are stages that have stampled the Niger Delta so emphatically on the map as a region where life is short and unpredictable."

d. Another cause of water pollution include sewage and waste that are emitted from industries and fertilizers which contains nutrients such as nitrates and phosphates which find their ways into lakes, streams and rivers which in excess levels, these nutrients over stimulate the growth of aquatic plants and algae. Excessive growth of these types of organisms consequently clogs our waterways, use up dissolved oxygen as they decompose. These wastes emitted from the industries are as a result of neglect. This can be attributed to the dominance and absolute control of the industry by foreign nationals and their Nigerian stooges and cronies, who have no interest of cost effectiveness in project delivery in Nigeria (Onyeabor, 2006).

e. One other cause of surface water pollution is the acidification of surface water by air pollution. Gas flaring is the major form of air pollution, which in turn pollutes the surface water in form of acidic rain. Gas flaring has been going on indiscriminately in the region as well as other adjoining oil producing areas for the past forty years within the Niger Delta. The rate of gas flare in Nigeria is very alarming and the most disturbing aspect is that no urgent and drastic steps have been taken to solve the problem by either the Federal Government (FG) or the oil companies themselves. Even though, the Federal Government has placed a ban on gas flaring, with the deadline in 2008. The question still remains, would gas flaring ever be a thing of the past in the Nigeria Delta? Because according to Rowell as quoted by Bassey (2002), "Up to 76% of gas is flared in Nigeria whereas only 0.6% is flared in the United States of America and 4.3% in the United Kingdom.

The flaring of this enormous quantity of gas indicates the amount of toxicity that returns to the environment and pollutes the surface water bodies in the Niger Delta and its environs. It is on record that Nigeria flares more gas than any other country in the world. According to a World Bank Report (1995), Nigeria in 1989 alone flared 617 billion cubic feet of associated gas, releasing 30 million tons of carbon dioxide in the process.

All these gases are flared in the flow stations in the oil producing areas of the Niger Delta. Although, this region is known to have dense vegetation cover, science has proved on one hand that plants make use of this carbon dioxide in photosynthetic processes. On the other hand, it have depleted these

same forest reserves, leaving the inhabitants with the resultant environmental effect like global warming and a return of a monstrous liquid known as acid rain. With the discovery of more wells, the carbon dioxide discharged into the air must have increased tremendously over the years Bassey (2001).
"The Niger Delta has been touted as the biggest single industrial complex in the world contributing to global warming today." The table below shows the number of companies and their oil fields and production well in the Niger Delta.

Company	Number of oil field	Average number of production well
Allied Energy	1	16
Agip	20	137
Asgland	8	89
Dubril/Philip	1	1
Elf	6	116
Chevron	17	56
Mobil	17	220
Pan Ocean	1	1
SPDC	83	748
Tennaco	1	1
Texaco	4	48
Total	159	1,481

Source: Ministry of Petroleum Resources.

The adverse effects of gas flaring include acidic rain, retarded crop yield, corroded roofs, excessive flooding and lung diseases. Above all, the greatest averse effect is the acidic rain, which adulterates the water bodies and makes life unhealthy for both plants and animals.

f. Pathogen is another cause of surface water pollution that proves harmful. Pathogens include such organisms as bacteria, viruses, protozoan and so on. These pollutants enter water ways and pollute seafood and the environment through untreated sewage, storm drains, septic tanks, runoff from farms, and particularly boats that dumps sewage from oil companies. Bassey (2003) confirmed this when he stated that "there is suspicion that preponderant of certain diseases in the deltaic communities may be traced to pollution (toxic discharges) of seafood by oil companies. The Environmental Right Action ERA (2002) reported the death of eight kids in Akassa after bathing in the river which is suspected to have been contaminated by toxic chemical probably discharged offshore on 30th November, 2000 and transported by waves to the shores. The Agency – France press AFP (2000) noted that some of the children had apparently been playing in oil, which washed up on a beach near the settlement of Akassa in Bayelsa State on December, 1st and 2nd … oil industry experts suggested the slick might have contained toxic chemicals or chemicals used for cleaning out oil tanks.

Myers (1998:21) as cited in Okorie (2003:42) also unfolds that "… a full 90% of disease in developing countries is associated with lack of clean water for domestic use and the chief sufferers are children."

Most of the communities in the Niger Delta depend and dwell in the riverine areas where these water bodies are polluted, which then posse's danger to the health of the people. And so, the government owes its citizens the responsibility of providing adequate medical care as enshrined in article 25 of the Universal Declaration of human Right (UDHR).

"Everyone has the right to standard of living adequate for the health and well being of himself and of his family, including medical care and necessary social services, and the right to security in the event of sickness, disability.

The neglect of these microscopic pathogens by the oil companies and government agencies has caused great damages to the communities. Though microscopic in nature, these pollutants have a tremendous effect evidenced by their ability to cause sickness such as typhoid, diarrhea and dysentery to minor respiratory and skin diseases and other water borne diseases.

g. Finally, the last major surface water pollution is the discharge of effluents from ships at habours and the activities of speed boats and ferry transportation. Some of these speed boats and ferries have a high capacity engines that pollutes surface water through oils which drop into the water from the engines. This is particularly found in the creeks and estuary rivers, which separates the many islands in the Niger Delta

Sometimes they could carry poisonous substances or radioactive materials which are used for oil exploration from the water jetty to drilling platforms. Radioactive substances are produced in the form of waste from nuclear power plant, medical and scientific use of radioactive materials and from (oil) industries. Specific forms of waste are uranium and thorium.

THE CONCEPT OF ADULT EDUCATION

Adult education as a concept is not easy to define. This is because what constitutes adult education varied from one country to another. Because what may be considered adult education in one society may not be accepted in another society. And this is simply so with the fact that there is no single internationally accepted definition of the concept of adult education.

Despite all these misconceptions about the definition of adult education, many educational scholars are working tirelessly to ensure that adult education is a giving, a considerable definition to accord the field (adult education) a good recognition at all levels of agreements.

According to Nigerian National Council for Adult Education (1973) NNCAE defined adult education as "a process whereby men and women undertakes sequential and organized activities with conscious intension of bringing about changes in information, knowledge or skills, appreciation and attitudes or for personal or community needs.

This simply means that education be it in whatever form is meant to impact knowledge, skills, appreciation of attitudes, change in behaviour and knowledge so that we can have a better society to live in.

Webster (1953) defined adult education as a formal education and cultural courses whether by correspondence or attendance." This means that adults can learn regularly in informal school system if they wish. They also include vocational, such as mechanic, carpentry, tailoring etc and cultural which could be dancing, singing and so on during their studies.

According to Adult Education and Development (2006) Botswana Conference states that:

Adult education is often referred to as a movement dedicated to making things better as well as providing professional expertise in teaching and helping adults to learn.

It is true that adult education has some distinctive features of its own because adult education both complements and supplement formal education.

In the same vein, adult education and Development (2004) states that:

The role of adult education encompasses three main fields: Adult basic education, which provides people with opportunities to gain basic literacy and numeracy skills and progress to the equivalency of Grade 7; Extension services and continuing education which refers to all programmes designed for people who have completed the basic cycle of ten years of schooling. Examples of these programmes include distance learning, evening studies and part-time and vocational training."

There can therefore be no doubt that adult education contributes to capacity building through skill development, technology transfer, community leadership development and information dissemination. It is therefore an empowering process in terms of acquiring skills and increasing knowledge of social, political, environmental and economic issues that impact on individual and collective living. It therefore provides the human capabilities necessary to enable one to avoid or graduate from poverty and it needs to be linked to and taken as part of other development processes aimed at enhancing human welfare.

THE INTERVENTION OF ADULT EDUCATION TO SURFACE WATER POLLUTION IN THE NIGER DELTA THROUGH ITS VARIOUS PROGRAMMES.

1. Literacy Programmes: According to Adult Education and Development (2006) states that:

Literacy is about acquiring and using reading, writing and numeracy skills and thereby the development of active citizenship improved health and livelihood and gender equality. Literacy is an instrument that pays untold economic dividends to mankind. It is in this regard that Caudschinsly (1973) states that:

A person is literate when in a language that he speaks can read and understand everything he would have understood if it had been spoken to him, and can write so that it can be read everything he can say."

From the above quotation, it becomes very clear that literacy education is an important tool for national progress, peaceful existence and development generally. Literacy education is useful to the individual in his peculiar circumstances. Literacy education is very important because when the people of the Niger Delta are well educated, they will know the danger of surface water pollution, thereby making them to look to ways of preventing their water from pollution.

Through literacy education programmes, the people can be able to read and write and apart from that, they can be able to know their rights and fight for it wisely. They can also be able to identify their problems and to look for solution.

Furthermore, the people of the Niger Delta needs literacy education so that they can be better informed about the danger and causes of surface water pollution, the measures to be taken in preventing surface water pollution. Therefore, the people of the Niger Delta region need literacy education to address these problems stated above.

1. Awareness Education Programme

Apart from literacy education programme, people need to be aware of the things happening around their environment, that is why awareness education programme is very crucial and important in any community, because it makes people to be aware of the current things in which they ought to do and what ought not to be done for the betterment of the community in which they live in.

Surface water pollution in the Niger Delta region is a thing of concern and the people of that region need to be aware of it in order to prevent the pollution of surface water. The people need to be aware of the effects of these pollutants which have contributed to the reduction in the value of crop yield, aquatic resources on which a good number of people in that region depend largely on for their livelihood.

Through this awareness education programme, the people will be told about the frequent and spills and other pollutants which had negative effects on the fragile mangrove ecosystem wildlife and most importantly on man.
That is why awareness education programmes become very necessary in order to sensitize the general populace on surface water pollution so that they can be aware and enlightened the more.

3. Vocational Education/Functional Literacy Programme

Anyanwu (1987) defined functional literacy "as all educational activities which combines socio-economic and vocational training within the framework of a development undertaking. It is an exercise in literacy

education, which is integrated with development and one which becomes from its very nature a constituent part of a development. Functional/vocational literacy programmes is a kind of educational programmes which facilitates the economic development of each society, training both young and old, men and women on various vocational occupation with the sole aim of improved standards of living and self-reliant and to increase productivity to all people.

Though the perception of vocational/functional literacy varies from place to place. This is because the practice depends on the socio-economic activities that are being practiced in the area. But nevertheless, one of the most important aspects of functional literacy is that it trained people to self-reliant and becomes useful to themselves and the society as a whole. Vocational/functional literacy education empowered people, thereby reduces the problem of unemployment and idleness in the life of an individual. It also makes people to acquire literacy abilities and knowledge, which creates awareness and sensitized them on the day to day happenings of their own community. It also serves as a leading tool for empowerment.

Apart from teaching people to be self-reliant through vocational skills, functional literacy education teaches various skills such as pomade making, health and sanitation, food and nutrition, tie and dye, carpentry, tailoring etc. Through this programme, they can be taught on how to take care of their environment especially water which is very essential in life because without it man cannot exist. They can teach them on how to dispose their waste so that it will not spoil their water. They should not wash on the streams or put dangerous chemicals on the dams in the name of fishing because such chemicals have dangerous effects on man. Through educating them on vocational and functional literacy education programmes, the issue of surface water pollution in the Niger Delta region of Nigeria will be reduced to its bearest level.

4. Community Education Programme

Community education programmes can be a source of intervention to surface water pollution in the Niger Delta region of Nigeria by educating the entire community to see the need of living healthy. The community should come together as one with certain policies that will safeguard surface water pollution, thereby encouraging one another to abide by such policy.

The community needs to be educated that water pollution occurs when harmful substances are emitted directly into a body of water such as industrial waste discharge, oil spill, that is directly and the indirectly way of water pollution which they may not even know that it has effect, is through environmental changes such as when fertilizer from a field is being carried into a stream by rain in the form of run-off which in turn affects aquatic life and the quality of drinking water. The community should also be educated that indirectly source of water pollution are much more difficult to control

and are majority of the contaminants in streams and lakes where the majority of the drinking water comes from.

5. Continuing Education Programme

The society in which we live in is dynamic. Therefore, continuing education becomes very necessary to meet up with the challenges of the world. The people of the Niger Delta region should keep learning through continuing education so that they can be able to come and with new innovative ideas that will be a solution to surface water pollution which has been a thing of worry and concern in the region. They should keep on learning because learning itself is a continuous process which does not have a limit and that is what life long education is all about. You start learning new things right from the day you were born till the day in which you breathe your last.

Continuous learning is something that every individual must or should do because it makes the individual to be more knowledgeable, more current, more intelligent and even more curious, wanting to know everyday and ever ready to face the challenges of the day.

With continuing education, we can have more knowledgeable people in the society and with such people, most of our problems will have solutions because as they learn everyday, they also carry on some researches on some problems and possible solutions are made to such problems so that we can have a better society and environment to live in.

CONCLUSION

It is pertinent to note that whatever harm we do our environment automatically bounces back on our human lives. The environment is our basic life support system. It provides the air we breathe and most importantly also, the water we drink down to the food we eat and the land we live on.

If we continue to discharge waste especially liquid waste improperly, flare gases, spill oil etc, which continuously pollutes the surface water in which man and other living greatly depend on for life. A time may come when an epidemic might evolve that would wipe away (kill) great population of living being before a cure is discovered. And so this calls for a sustainable environment today.

Finally, if we continue to treat the environment badly as we have done, the damage will get worse, the cost higher and the consequences more serious.

RECOMMENDATION/SOLUTION

In as much as the cause and effect to these environmental problems have been identified, the framework of barriers suggested classification, AKTESP

i.e. Agreement, Knowledge, Technology, Economical, Social and Politics) to finding and implementing solutions to environmental problems which was based on Tudills (1990) well written "Barriers to a Better Environment" has largely drawn from Eziashi (2007) lecture note "Finding solutions to Environmental Problem". It has largely shown the major barriers to solving the Niger Delta Environmental problems in terms of water pollution.

The major point source pollution can best be checked by the three options available in controlling industrial waste –

- Control can take place at the point of generation in the plant.
- Liquid waste can be pre-treated for discharge to municipal treatment sources.
- Liquid waste can be treated completely at the plant and either reused or discharged directly in receiving water bodies.

On a general note, the following recommendations can proffer solutions to our environmental problems:

i. Government should pass a bill restricting the improper and indiscriminate disposal of waste both from individual homes, hospital, markets, industries and so on.

ii. Formation of an organization or a body under law and under the strict supervision of the Federal Ministry of Environment, that would enforce these environmental laws especially as it concerns surface water pollution.

iii. The Federal and State Ministries of Environment, Non-Governmental Organizations and all other corporate bodies should ensure to carry out a sensitization campaign to all nooks and crannies of our society, on the resultant effect of our human activities such as indiscriminate disposal of waste, bush burning, gas, dumping of materials along water course etc.

iv. Government should enforce the restriction of gas flaring to stop surface water pollution by acid rain.

v. Research findings from institutions of learning should be looked into and adopted in proffering concrete solutions to environmental problems.

REFERENCES

Adult Education and Development (2004). Botswana Conference, Poverty Reduction and Adult Education Institute for International Cooperation of the German Adult Education Association (11/2/DVV).

Adult Education and Development (2006). Adult Education and Information Technology, Education for all and literacy, informal and community Adult Education. Institute for International Cooperation of the German Adult Education Association 11/2/DVV.

Anyanwu (1981). Principle and Practice of Adult Education and Community Development. London, Nigeria.

Bassey, N. (2003). Oil and Gas Industry in the 21st Century. Paper presented at the second Nigeria Academy of Science Forum Port Harcourt, january 19th, 2001.

Environmental Right Action (2000). "Agip Millenium Fire Roast six to death" ERA Field Report No.16, May 18th, 2000.

Eziashi, A.C. (2007). Barriers to and Prospects of solving the persistent problems of solid waste in Nigeria Urban Centres (Lecture note).

Eziashi, A.C. (2007). Finding solution to Environmental Problems; Challenges of the Nigerian Geographers in the Twenty-first century (Lecture note).

Iwena, O.A. (2000). Essential Geography. Ikeja: Toned Limited, Nigeria.

Niger Delta Environmental Survey (NDES) Vol. 4 Abridge Version of Phase 1 Report, September 1979. p.35.

Okoko and Ibada (1997). Oil Spillages and Community Disturbances: "The SPDs and the Niger Delta Experience" in Nigeria journal of Oil and Politics (OPJON) Vol.1, No.1, September, 1997 p.57.

Okopido, I.I. (2003). "Environmental Pollution: An Emerging Health Hazard – The Nigerian Scenario". Paper presented at the Andem Ewa Memorial Lecture and published in the Environmental Watch. Yenegoa, Jan. 15, 2003.

Okorie, I.O. (2003). Resource control and the Niger Delta Struggles: Surulere, Isiune Press, Nigeria.

Ohokerhoraye, A.G. (1995). Urbanization and Environment in Nigeria, BSSSA, Benin City, Nigeria.

Onyeabor, S. O. (2006). The Quantity Survey or "Capital Cost Estimating of Oil and Gas Project in the Niger Delta Area of Nigeria." Nigeria Institute of Quantity Surveyors. July-September 2006. Vol.54 ISSN:116-915x.

Lindsey, T.D. and Neese, S. (1996). Pollution Prevention Water Quality International (internet).

Willinks Commission Report. Hert Majesty's Stationery Office, London, 1957, p.9.

www.umuh.edu. 11.00a.m. (3/9/2007).

www.surfacewaerpollution.htm