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Review Article

The Law in Cameroon and the Vexing Problems of Ground Water Pollution

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Abstract

In Cameroon, due to the weaknesses of institutions and inadequate laws, many agro industrial plantations which are in most parts of the country extensively apply fertilizers, pesticides and discharge their untreated waste into nature. These attitudes are consistent for industries, hospitals and individuals. Consequently chemicals are found in ground water. Artisan mining of gold in the South eastern and Eastern parts of Cameroon release substantial quantities of arsenic in to ground water. All these leads to ground water pollution .The ramification of this pollution of ground water is water borne diseases (such as typhoid, cholera and amoebic dysentery which are recurrent in most of the urban cities in Cameroon). This paper investigates why the laws regulating ground water are not enforced and the lacunae of these laws. The paper does so through a reading of records mainly from documentary and internet search. The data thus collected constitutes the sources from which the law is drawn, stated and analyzed in the light of the stated aim of the paper. The results *inter alia* show that the law that regulate ground water pollution are not well enforced. The said results also highlight the limitation of the available laws regulating ground water pollution in Cameroon. The results are significant as they expose gaps in the current laws regulating ground water pollution and conclude with suggestions on where the law should go.

Keywords: Ground water, Surface water, pollution, Water quality, corruption, Fertilizer, pesticide.

INTRODUCTION

Ground water is a source of water to millions of people over the world. It is the water that has percolated down through surface layers of soil and rocks to join the aquifers until it reaches the impervious layer and eventually rest there until exploited. Water is arguably one of the most abundant natural resources on earth [1]. It has been part of the existence, tradition, religion [2] and sacred beliefs that has characterized and dominated the history, identity or culture of most modern and traditional communities and societies of the world. Water is essential to life, protecting water quality and controlling its pollution is a key concern. Its varied uses at home, in industry and agriculture make it vital to the sustainable development of human kind [3]. But through out history, man has been ravaged by plagues and epidemics as a result of poor sanitation and polluted water [4]. Water pollution is the most pervasive environmental problem on the planet [5]. Nearly one

[1] UNESCO water portable weekly update no 122, published in December 2005, p. 15.

[2] In Buddhism, water is used in funerals. It is poured and over flows into a bowl placed before the monks and the dead body. In Christianity, water is intrinsically linked to Baptism, a public declaration of faith and a sign of welcome into the Christian church. In Baptism, water symbolizes purification, the rejection of the originalsin. What is imbued with powers of spiritual purification for Hindus, for whom morning cleansing with water is an everyday obligation. For Muslims, water serves above and beyond all for purification. The first and most important involves washing the whole body and recommended before Friday prayers and before touching the Koran. Jews use water for ritual cleansing to restore or maintain a state of purity.

[3] John and Sharron E (2010) Environmental Law 1st Ed. Long man Print, p,265

[4] The typhoid epidemic that swept London in the mid 19th century underscored the peril of water pollution and launched the first organized steps to combat it. See Sloan, J.J (1979) Environmental law 1st Ed. Ocean pub. Unc. New York ,P. 19

[5] Hunter , D (1998) International Environmental law and policy 1st Ed new York foundation press P.9

third of the world's population lack access to proper sanitation facilities. More than one billion persons lack access to clean water [6]. There is no doubt that the need to prevent water born diseases is a major thrust as efforts aimed at stemming the decline of the environment. Ensuring water quality and protecting water resources through pollution controls are central to any effective system of environmental protection [7].

It is discernible that apart from air, water is the most essential requirement of all living beings and breathing things. It is for this reason that most governments will strain every sinew to provide and maintain a reliable water supply to meet the multifarious domestic, industrial and social needs of the citizenry without which the adage "water, water everywhere, none to drink" will be true [8].

In Cameroon many rivers especially those in urban centres and ground water are known to be polluted and they are becoming more so everyday. It was in an effort to prevent this possible disaster that the Cameroon government decided to put in place several pieces of national legislation. For instance the 1996 [9] environmental management law and the 1998 [10] law which regulates water resources .Under these instruments, the minister in charge of water resources and energy is charged with the duty of ensuring that proper provision is made for the environment through the supply of water for drainage, the safe disposal of sewage, effluent, and water borne wastes, and the control and prevention of pollution [11] and also the protection of inland and estuarine, fisheries, flora and fauna [12].

What Is Ground Water

The water law [13] of Cameroon does not give a vivid definition of ground water. It states in its section 3(1) that "it is infiltration water". The 2001 decree on the protection of ground and surface water against pollution defines it as "any water found under the surface of the soil in a saturated zone in direct contact with the soil or sub soil" [14]. These definitions are not explicit, so reliance will be made on other definitions. Ground water is defined by the Advanced Learners Dictionary of current English as "water in the sub soil or water below the ground which includes wells and aquifers" [15]. Thornton further defines it as "water which percolates through or under land, as opposed to flowing in a defined channel above or beneath it is known as ground water" [16]. It is gathered from the various definitions given above that ground water is water below the ground. Ground water resources have always played a critical role in meeting the water demands of traditionally water short areas of the world [17].

About half of the people in Cameroon including about 50% of those in rural areas, depend on ground water [18]. This vital resource is threatened in many areas by over-use, pollution and by a wide variety of industrial, agricultural and domestic contaminants. For decades now it was widely assumed that ground water was impervious to pollution because the soil would bind chemicals and cleanses water as it percolates through. That is no longer true in many areas [19] as will be seen below.

Sources or causes of ground water pollution

A wide variety of activities, someone thought harmless, have been identified as potential sources of ground water contaminants. Infact, possible sources of human Induced ground water contamination span every facet of social, agricultural and industrial activities. Once ground water pollution has occurred it is extremely difficult to remedy. Pumping underground water and treating it is very slow and costly. A much better way to deal with the issue of ground water pollution is to work very hard to prevent the pollution

[6]Ibid

[7]McEldowney and Sharon J (2010) Environmental Law 1st Ed. Long man printing press P. 265.

[8] Ibid

[9] Law no. 96/12 of 5th August 1996 relating to environmental management.

[10] Law no 98/005 of 14th April laying down regulations governing water resources in Cameroon, Decree No 2001/64/ PM dated 8th May 2001 regulatory the utilization of water resources and Decree no 2001/165/ PM dated 8th May 2001 on the protection of water resources.

[11] Ibid section 4(1)

[12] Ibid

[13] Law no 98/005 of 14th April 1998 laying down regulations governing water resources .

[14]Decree no 2001/165/pm of May 8th 2001 specifying the modalities for the protection of surface and underground water against pollution.

[15] Hornby A.S (2009) Oxford Advanced Learners Dictionary of Current English, Oxford University press P.480.

[16] Thornton J and Beckwith S (2004) Environmental Law 2nd Ed. Sweet and Maxwell. P.242

[17] Bockman A and Isakson, M (1994) Storm Water Management in Kenya, Botswana Uppsala, Swedish University of Agricultural Sciences, International Centre P.73(working paper International Rural Development Centre, Swedish University of Agricultural Sciences246)

[18] « L'Environnent Au Cameroun (Octobre 1990) Problèmes Environnementaux dans le Région Au Nord Cameroun » Centre de Coopération –Cameroun Canada P.80

[19] UNICEF/UNESCO post graduate training course in Environmental management held in presden University of Technology Vol. 1994. P. 145.

from occurring in the first place. Major sources or causes of ground pollution include:

Ground Water Pollution by Agriculture

There is no gainsaying that access to food which is second only to drinkable water remains the greatest priority of man [20]. In other countries, food requirements have required expansion of irrigation and steadily increasing use of fertilizers and pesticides to achieve and sustain higher yields [21].

Agriculture is a dominant component of the economy of Cameroon as it is elsewhere in the world [22]. With the rapid population growth after independence, there has been pressure to produce more food both for local consumption and as a cash earner. This has resulted in the expansion of agricultural activities to various areas, which had hitherto not been under cultivation. The end result being pollution arising from intensive use of fertilizers, organic manure and pesticides.

Pollution by Fertilizers

The strive for high yields and the restoration of the impoverished soils due to poor agricultural practices has pushed agro-industrial concerns and local farmers in Cameroon to resort to intensive use of fertilizers and organic manure. A fertilizer is defined as "a substance added to soil to make plants grow more successfully" [23]. The 2003 [24] law regulating fertilizer use in Cameroon defines it in its section 2 as "any substance or matter containing one or more nutritive elements for plants which are recognized and used as such with a view to enhancing plant growth and yield".

Fertilizers are therefore artificial manures used with the sole aim to increase or enhance plant growth as stated by the two definitions given above.

In Cameroon, any individual or corporate entity is free to produce, import and distribute fertilizers throughout the national territory subject to the laws and regulations in force [25]. This is one of the aims of the bill [26] instituting the fertilizer law which is to liberalise the producing, importation and distribution of fertilizers in compliance with the laws and regulations in force. The condition for producing, importing, packaging, storing and distributing fertilizers or any other related activity shall be fixed by Joint order of the minister in charge of agriculture and rural development, the minister in charge of trade, the minister in charge of environment, nature protection and sustainable development and the minister in charge of public health [27].

However it is stated clearly in the fertilizer law that, before a fertilizer is used in Cameroon prior assessment of the physical and chemical state of the soil must be carried out to see whether the soil is fit for it [28]. The modalities and content of such assessments shall be laid down by regulation [29].

Furthermore, any individual or corporate entity, whether public or private which owns a farm and intensively uses fertilizers shall be bound to regularly conduct an impact assessment of such fertilizers on the environment [30].

From the foregoing discussion it is clear that the 2003 law regulating the importation and use of fertilizers is out to prevent indiscriminate importation of and use of fertilizers with the objective of preventing water and soil pollution. This is the precautionary principle [31] which is adumbrated in the environmental code of Cameroon which unfortunately is not well enforced. The question which demand an answer is why is there the precautionary measure to prevent water pollution by fertilizers, yet fertilizers still pollute water?

The inadequate enforcement of the fertilizer law by the ministries [32] in charge of that is the first reason of water pollution by fertilizers. For example individuals who use fertilizers intensively do not carry out an impact assessment [33] of the soil to verify whether it can stand fertilizers, that is, the quantity it can take before applying it. Secondly, most of these individuals are not trained on how to use a fertilizer and therefore often use wrong ones or use overdose, which, the plants, cannot completely absorb thus having a residue on the soil which when washed away by rain leads to water pollution.

[20]Ongly, ED (1996) "Control of Water Pollution from Agriculture FAO irrigation and drainage paper 55. EMS water collaborating Centre Canada-Centre for Inland water's Burlington Canada. P. 11.
[21] Ibid.
[22] Etudes pour une Gestion Durable des Écosystème Marin et Côtier du Cameroun. Rapport Final (PNCE), 2008, p. 61.
[23]Hornby A.S ,op cit p. 566.
[24] Law N°.2003/007 of 16th July 2003 to regulate Activities of the Fertilizer Sub-section in Cameroon.
[25] Ibid section 4
[26] Bill No; 755/PJL/AN to regulate activities of the fertilizer sub-sector in Cameroon.
[27]Section 5 of the 2003 law regulating the fertilizer sub-sector.
[28] Ibid, section 6(1)
[29] Ibid, section 6(2)
[30] Ibid section 7(1)
[31]Section 9(9) of the Environmental Code.
[32] The Ministries include, the ministry of Agriculture and Rural Development, the ministry of Environment, Nature Protection and Sustainable Development, and the ministry of Public Health
[33]For more on environmental impact assessment section 17 to 20 of theEnvironmental code.

Furthermore, section 9(2) of the fertilizer law states that fertilizer quality control shall be ensured by sworn officials working in the government services of the competent authority. Such employees shall have free access to fertilizer production, storage, packaging and distribution facilities but this is not often executed because the Ministry of Agriculture and Rural Development (MINADER) does not have enough trained officials, who are obliged to go into the field and teach farmers how to use a fertilizer, the quantity to apply and how to find out which mineral is lacking in the soil.

This lack of trained personnel is exacerbated by the absence of regular capacity- building. Even where it exists, it is not done thoroughly because MINADER does not have enough experts to build their capacity. In addition, MINADER does not have sufficient finances to install enough laboratories which are used to test whether there is a fertilizer residue in the soil. The absence of enough laboratories increases pollution because farmers who administer the chemical go unpunished since the residue cannot be dictated.

Judgments in courts of law are based on facts and evidence. Once there is no evidence, an accused will be set free. This also applies to the violation of the fertilizer law. Since laboratories to prove the residue of fertilizers are few or are generally inadequate, many individuals and corporate bodies who use fertilizers indiscriminately or wrongly in Cameroon go unpunished. It is therefore difficult to prove violation or the law by a court of law as stated by section 17 and also to institute punishment on the offender as stated by section 18 of the fertilizer law. Apart from the legal difficulties of filling such a claim, the major stumbling block is establishing a casual link between the presence of pollutants (nitrates) in the water and the presence of its effects (cancer) on the plaintiffs.

Lastly, an enabling instrument of the fertilizer law which is supposed to contain the authorized list of fertilizers as well as the authorized quantities, terms and conditions for their use so that the substance does not endanger water or other receptor environment is still to be enacted. The absence of such an enabling instrument is very unfortunate, because it means the indiscriminate use of fertilizers which may lead to the endangering of the water environment [34]. This explains the lack of an efficient enforcement of the fertilizer law.

Ground Water Pollution by Organic Fertilizer

This is natural manure produced by cattle, pigs, poultry and decomposed litter. The impact and major problems of environmental pollution associated with organic fertilizer deserves special attention. In Cameroon, the problem is particularly acute in the northern regions where cattle rearing are most important. A single cow produces about 30kg of manure per day as much as that produced by ten people in Cameroon [35]. The runoff from a cattle ranch into rivers, streams and lakes is rich in viruses, bacteria, nitrates phosphates and other contaminants. Although this is controlled in many western countries, it constitutes a serious problem for water quality in much of the world. There is an increase in the pollution of water in Cameroon by organic fertilizers because the fertilizer law is not well enforced for the same reasons discussed above under chemical fertilizers.

Ground Water Pollution by Pesticides and Insecticides

Thousands of different natural and synthetic organic chemicals are used in the chemical industry to producepesticides. The term "pesticides" is a composite term that includes all chemicals that are used to kill or control pests. What then is a pesticide? Section 30(f) of the law regulating phytosanitary protection [36] in Cameroon defines it as "any substance or combination of substances used for warding off, killing or fighting ravages, vectors of diseases and undesirable plant or animal species that are destructive or otherwise harmful during production, processing, storage, transportation or marketing of food products, agricultural products timber and non-timber forest products". The use of pesticides in Cameroon and other developing countries is extremely variable from nil in large parts of Africa to extremely heavy dosage in intensive agricultural areas of Brazil and plantations of central Africa [37]. As part of its agricultural policy, the government of Cameroon has for several decades made great efforts to control pest and diseases. During that period all phytosanitary operations were exclusively under state control. With the liberation of the productive sector of the economy, the state withdrew from providing direct support to agricultural production, particularly with regard to the supply of inputs and phytosanitary treatment. Consequently, there was an uncontrolled circulation of agricultural pesticides. The misuse of this pesticides and their packaging led to several cases of poisoning and

[34] An example is seen in the western highlands of Cameroon where fertilizers are mostly used by farmers to improve crop yield. For more on this see Etude pour unegestion durable des ecosystems. Marin etCotierdu Cameroun.Rapport final (PNGE) 2008 at p. 70.

[35] Neckmen NS (1999) National Policy Standards and Enforcement Procedures on Industrial and Urban Pollution Control.The case of Cameroon. A project sponsored by theMinistry of Environment and Nature Protection and Sustainable Development, Yaoundé-Cameroon.

[36] Law N° 200/003 of 21st April 2003 regulating phytosanitary protection

[37] Fonja Julius A (2018) Legal and policy mechanisms for Urban pollution control with particular reference to selected cities in Cameroon.(Unpublished) PhD thesis of the Faculty of Law and Political science.university of Yaoundé II, P. 232.

environmental damage in order to provide an appropriate law regulating physosanitary products, the 1990 [38] law bound to be repealed in 2003 [39]. Despite this new law, individuals and corporate bodies still indiscriminately use pesticides which results to water and land pollution. Why? Two of the objectives of the new law stated in the Bill [40] establishing this law are the laying down of rules for the use, inspection and control of phytosanitary products and increasing the punishment for infringing the law in force. It must be made clear here that the world in general and Cameroon in particular cannot survive without pesticides. This means that pesticides pollution can only be reduced. How then can this be done .The strict enforcement of the phytosanitary law will sort out the problem. Section 25 of the law provides that "only individuals or corporate bodies who have the permit to import pesticides should do so". On the contrary this is not what obtains in practice because people who have no permits smuggled pesticides from Nigeria and other neighbouring countries into Cameroon. The off short is (consequences) that these products are sold indiscriminately to farmers who know little or nothing about how to use them. An overdose use of the chemical leads to increased land and water pollution. Furthermore, only persons who have professional license should be allowed to administer pesticides as stipulated in section 20(1) [41] of the phytosanitary law. This is not the case in practice. Most people whether farmers or not buy these chemicals and apply them on their farms without knowing the recommended quantity to use.

In addition only pesticides which are accepted by MINADER should be imported [42]. It is noted that some types of pesticides that are no longer used in Europe because of their toxicity are still imported and used in Cameroon because of their low prices. Section 24(2) of the law supports section 21 by stating that outdated pesticides should no longer be used. Yet the section is not enforced. The reasons why pesticides pollute water are the same like those already discussed under the pollution of water by fertilizer. Furthermore, the reasons why controllers and inspectors of pesticides are not doing their job are the same like those equally discussed under pollution of water by fertilizer. In addition the punishment meted out against defaulters in section 33 is too paltry to discourage an infringer from doing so again. For instance, the section provides that any person who violates the 2003 law on pesticides will pay a fine of 50.000frs. Many defaulters can pay this amount of money but if this amount were say 500.000frs to 5000.000frs it will act as a deterrence because few farmers or companies will easily pay it. Section 34 further states that, "where a pesticide is imported by an individual or company without a licence he will be fined to pay between 100.000 to1000.000frs. It is normal that this amount of money will obviously discourage an individual farmer because it is much but will not deter a company which violates this law because any company can pay 1000.000frs with ease.

Even with this, just like the fertilizer law it is difficult to prove pollution of ground water by pesticides because there are few or no laboratories to test the residue of pesticides on crops, ground water and land

Lastly, no text of application of the photosanitary law exists yet. Section 12 of phytosanitary law states that "The minister in charge of agriculture shall fix as, and when necessary, the list of plants parts and plant products whose importation shall be prohibited or restricted in Cameroon according to their origin". Thus as long as the minister has not enacted an order (arrêté) to list these chemicals, importers will import any chemical. The decree can take, months or years to be enacted. This is a flaw in enforcing the photosanitary law.

Underground Storage Tanks

An underground tank is a tank in which petrol and kerosene are stored for sale in a fuel station. After a certain lapse of time, small holes might develop in these tanks because of rusting through which petrol and kerosene might leak. This pollute the water underneath .This is why after some time these tanks are dug out from the ground for repairs. Such contamination of ground water contravenes section 29 of the environmental management code [43]. The problem of leaky tanks has been solved in America by removing the single walled underground storage tanks and replacing them by modern ones. It is suggested here that, the environmental management code should be modified and a section added stating that fuel stations should use modern tanks which do not leak. If this is done, the environmental code will not be violated any more.

[38] Law N°.2003/3 of December, 1990 relating to phytosanitary protection.

[39] Law N° 2003/003 of 20th April 2003 laying down the law that regulates phytosanitary prevention.

[40] Bill N°.730/PJA/AN relating to phytosanitary protection.

[41] The section states that "all person whether physical or moral who wish to administer pesticides with a professional license must have the authorization of the competent authority".

[42] Section 21 of the phytosanitarylaw.

[43] It states that "direct or indirect spill incidents , discharges, dumping of any kind, and more generally any act likely to provoke surface or underground water degradation through the modification of their physical, chemical, biological or bacteriological characteristics shall be prohibited"

Wells

A well is defined as "a hole or shaft sunk into the earth to obtain a fluid such as water, oil or natural gas" [44]. In recent years; many Cameroonian cities have undergone unprecedented growth in population through natural population growth and through migration from rural areas [45]. Population rise has led to the growth of cities into sprawling "illegal cities" with large areas of unplanned site stand and housing with few services [46]. The main source of portable water, in many cities is ground water commonly gotten not only from shallow hand dug wells but also from deeper water supply boreholes [47]. In Cameroon, wells are used to draw water, while in Europe and America; wells are used mostly for the purpose injecting liquid waste into the subsoil [48]. Direct infection of liquid waste such as oilfield brine, effluents from chemical plants and treated sewage down wells into deep aquifers is much less concerned than in the past. It is still allowed in some circumstances however, to the dismay of some cities [49]. These types of wells do not exist in Cameroon and they are clearly forbidden by section 29 of the environmental code and section 4(1) of the water law.

Wells are common in most towns of Cameroon because most of the populace cannot afford pipe-borne water. When these wells get old, they are abandoned. Abandoned wells represent another source of ground water pollution. The high use of wells exposes arsenic, a contaminant in drinking water that poisons millions of people around the world. It occurs mostly in ground water and is exposed when a well is dug in the ground to fetch water. Arsenic poisoning is appearing now because of the increased dependence on well water. Chappell [50] observed that excessive withdrawal now lowers the water table during the dry season, exposing arsenic bearing rocks to the air which converts normally insoluble salts to soluble oxides. This is common in the Northern regions of Cameroon where most of the wells dry up during the dry season and become refilled only in the raining season. Some domestic wells lack grouting to prevent surface contaminants from leaking into acquitters that they penetrate. When these wells are no longer in use, they are not often adequately capped, and people forget where they are. They can become direct routes for drainage of surface containments into acquitters. This problem is serious because there is no law regulating where and how a well should be dug. In other words, the environmental code and water law are all silent on that. This explains why wells are dug indiscriminately. The construction of wells should be regulated as is the case in Nigeria [51].

Land Fills

A land fill is defined as "an area of land where large amounts of waste materials are buried under the earth" [52]. In other words, it is a hole dug in the ground to deposit waste. In some cases, the hole is covered after each deposit, in others it is not. Although, recently constructed landfills have special liners and water collection systems approximately 90% [53] of the landfills in North America have no liners to stop leaks of underground water and 96% [54] have no system to collect the leachate that seeps from the land fill-60% [55] of the landfills place no restrictions on the waste accepted, and many landfills are not inspected even once a year. If the waste is solid, it decomposes and emits a liquid or if liquid, the landfill will seep into the ground and pollute ground water. In Cameroon, this is not very common because most people do not know that they should or can bury waste in the ground. This explains why most people dump their waste but on the ground. In some towns, for instance Bamenda, natural landfills are used to deposit liquid wastes.

However, it is worthy of note here that HYSACAM [56] dumps its waste in a landfill dug by the company at the Nkolfoulu neighbourhood in Yaoundé [57]. Section 51 of the environmental code state clearly that, waste shall only be buried in the sub-soil with the prior joint authorization of the competent administration which shall lay down the technical prescriptions and special rules to observe. Section 5 (2) states that, the burial of waste without the authorization provided in sub-paragraph (1) shall lead to an excavation of the waste by the person who buried it or after a charge to

[44] Bryan A G(ed) Black's law Dictionary 9th Ed. Minnesota west group. 1732

[45] Lambi, C.M.(2001(Environmental Issues Problems and Prospects 1st Ed ,Unique Printers, p. 55

[46] Ibid

[47] Ibid P.56

[48] Evaluation of urban pollution of surficial and ground water Aquifers in Africa. A project sponsored by UNEP and UNESCO,September (2002) P.9.

[49] Ibid

[50] Chapell, J (1995) "Coastal Change: Determination of Historic and Holocene Trends as a Basis for AssessingHuman Impacts". In Intergovernmental Oceanographic Common Workshop. Report No.105 pp,79-91

[51] In Nigeria, the Lagos State Environmental Pollution Control Edict, 1989, section 19 prohibits indiscriminate digging of wells and boreholes for industrial purposes without the written approval of the Ministry Environment and the Lagos State Water Corporation , Atsegbua, L &Akpotaire , V. Op.cit P. 81

[52] Hornby A S ,op .cit , P. 861

[53] Nazrul et al(2001)"Environmental Law in Developing Countries Selected Issues" IUCN Environmental Policy and Law Paper No.43 P. 35

[54] Ibid.

[55] Ibid.

[56] It is a garbage cleaning Company hired by Cameroonian Councils.

[57] BOSANGI, le Magazine trimestriel de la propriété. Juillet, Aout, Sept. 2006. NO 007 p. 30.

pay from the competent administration, in collaboration with the other administrative authorities concerned. Regrettably, this provision serves little or no purpose since individual or groups scarcely bury their waste in Cameroon. The few who do, do not obtain this authorization [58].

Septic Tanks

Septic tanks are large containers, usually underground, that hold human waste from toilets until the action of bacterial makes it liquid to be absorbed by the ground. Most modern houses in Cameroon have flushing toilets. These toilets empty their wastes into septic tanks. If the walls and floor of the tanks are mot well sealed, the liquid waste will seep into the ground and pollute ground water. Poorly designed and inadequately maintained septic tanks systems have contaminated ground water with nitrates and toxic cleaning agents. There are over one million [59] septic tanks in use in the Douala andYaoundé urban centres. About a third have been found to be operating improperly [60]. The implementation instrument of the water law of 1998 [61] states in its section 6 that, the Minister in Charge of Water Resources and Energy will state the technical methods which are supposed to be used to build septic tanks and latrines so that they do not pollute the environment. This provision is not respected in practice. Furthermore, the officials do little or nothing to enforce the section and this is why the technical specifications in their construction are simply ignored. For example, a septic tank's walls are supposed to be plastered and lined with a substance which will prevent the waste from leaking into ground water [62].

Pit Latrines

This is a toilet made by digging a hole in the ground. They are common in Cameroon because of the rapid population growth. Effluent from these toilets may leak into rivers and ground water [63]. The end result is that the leakage from the toilets contaminates wells. This accounts for the regular cholera outbreak in congested and slum clearance zones in Douala, Yaoundé and the North Regions [64].

Industries

Industries is used here to include manufacturing and mining industries. Manufacturing industries produce toxic and hazardous waste which is dumped untreated into nature in Cameroon. This leads to surface and ground water pollution. Some of these wastes especially that which is liquid seeps to the ground and pollute ground water. An act which has a considerable impact on achieving drinking water quality standard. This is especially the case in the northern regions of Cameroon where there is a heavy dependence on aquifers for public water supply. Mining industries equally dumped untreated waste into nature. Some of the waste is solvent while some is solid. Much of the liquid waste leaches into ground water and pollute it. This is very common in the East region of Cameroon where most of the mining companies are found. This is exacerbated by the fact that the quantum of damages levied on a polluter according to the polluter pays principle is too derisory to deter big companies from polluting.

Domestic Waste

Wastes from households in no small way contribute to ground water pollution. The quantity of waste produce by an individual in towns such as Douala and Yaoundé is much. When this waste is not collected by HYSACAM it decomposes and the leachate from it seeps into the ground the end result being the pollution of ground water.

It should be noted here that there is an important nexus between ground water and surface water. Ground water recharges surface water from springs and seepages into rivers and maintains wetland ecosystems. Any decline in the quality or quantity of groundwater has a subsequent impact on surface water and the achievement of river water quality [65]. Remediation of ground water is often technically complex and expensive; ideally this precious water resource should be adequately protected from contamination.

Effects of Ground Water Pollution

Water pollution is a national problem and may come from many sources. It is most acute in densely settled or industrial centres.

The most widespread danger in water is lead, which can cause high blood pressure and an array of other health problems. Lead is especially hazardous to

58 HYSACAM, which does so, has obtained this authorization else she would have been asked to excavate the wastes.

59 Awum, D (2000) "Urban Pollution and Solid Waste in Cameroon" A news letter for the Network for Environment and SustainableDevelopment issued on the 9th May – June 10,published in ECOFLASH

60 Ibid

61 Decree No. 2001/165/ prescribing the method to protect surface and underground water

62 What obtains is that most people just dig a hole and build the walls without plastering them. This promotes the seeping of the waste into underground water leading to its pollution.

63 This problem is aggravated because section 6 of the enabling instrument of the water laws is not respected. This explains why pit toilets are dug anywhere, any how even near wells.

64 This includes quarters such as Mabanda, and New bell in Douala, Mvog-Ada, Briqueterie and Elig-Ejua in Yaoundé and Balaji in Ngaoundere.

65 John and Sharron E.op.cit p.270

children, since it impairs the development of brain cells [66].

Nitrate levels in Cameroon have grown because of too much use of pesticides and fertilizers to the point where more than 10 percent [67] of the population is exposed to high level nitrate in drinking water which is above the 10mg [68] guideline. The high rate of nitrates is caused by excessive use of fertilizers and pesticides. When these two chemicals are used the residue is soaked by rain water and as a consequence the chemicals dissolve and sinks underground thus polluting ground water. A consumption of this water leads to cancers in humans [69]. This type of pollution is very common in the south west and littoral regions because that is where most of the plantations of Cameroon are found. A case in point is the product of a water bottling company called "Tangui" [70] whose products' consumption has been discouraged because it is located in one of these regions. The source of its water is not clean because of the infiltration of these chemicals into ground water.

Furthermore in farm countries or villages especially parts of the south west region of Cameroon where a greater number of Cameroonian's plantations are found fertilizers and pesticides commonly contaminate aquifers and wells. Nitrates from fertilizers often exceed safety standards in rural drinking water. These high nitrates levels are dangerous to infants |Nitrates combine with haemoglobin in the blood and result in blue body syndrome). They also are transformed into cancer- causing nitrosamines in the human gut.

In addition many cases of water -borne diseases such as typhoid, cholera, bacteria, enteritis, polio, infectious hepatitis, schistomasis, and amoebic dysentery are recurrent in most of the urban cities in Cameroon and hydric diseases; intestinal helminthiasis touched more than 10 million Cameroonians between 2003 and 2006 [71]. These diseases were associated to water and sanitation systems. The examples that come to mind are the recent cholera outbreak in Garoua [72] and Douala [73] a few days ago. Additionally, between 1984-1993 for example, 8000 cases of cholera, 11500 cases of typhoid and 46400 [74] of dysentery were recorded. At least 25 million [75] deaths each year are blamed on these water-related diseases. Nearly two-thirds of deaths in children below 5 years are associated with water borne diseases [76]. According to World Health Organisation (WHO), as many as 4 million [77] children die every year as a result of diarrhoea caused by waterborne infections. This is very common in Douala and Yaoundé urban towns because that is where most of the industries in Cameroon are located. In the northern part of Cameroon, towns such as Garoua and Maroua are highly hit because most of the inhabitants of these towns rely on ground water which they access through wells.

The Role of Councils

The 2004 law [78] regulating councils define a council in its section 2 (1) as "a decentralized local authority''. Section 110 of this 2004 law stipulates that a council has the duty to manage city lakes and rivers. It is due to the lack of effective execution of this duty by councils that we have water pollution in most towns of Cameroon [79]. Due to lack of constant cleaning of towns and the education of the population on how to clean their premises by council officials [80] most households turn to dump most of their waste into streams and rivers. Some build their pit latrines too near their houses. A fine is supposed to be levied against the defaulters but this is not often done [81].

[66] Enger ,D.E and Bradley,F.S (2000) Environmental Science 7st Ed. Mc Graw Hall , p.263

[67] Fonja J.A. op.cit p. 281.

[68] ibid

[69] FAO Control of Water pollution ,op cit p.13

[70] It is water produced and bottled by a company called Brassieres du Cameroun.

[71] Ngatcha, N.B,and Djoret, D (2910) Nitrate Pollution in groundwater in Two Selected Areas from Cameroon and Chad in Lake Chad Basin. Water Policy 12(5(722-733

[72] The Herald News PaperNo. 1678 Yaoundé, Monday 1-2 April2019 ,p.7

[73] Interview a la Nouvelle Expression No.1491 du Jeudi 26 Mars 2019, p.8

[74] Celestin , D and Bernard, P(2016) Current Conditions of Ground water Resources Development and Related Problems in the Republic of Cameroon, West Africa. European Water 54;43-68,EURA publications

[75] Cunningham, W.P and Saigo, B.W op cit, p.449

[76] Ibid

[77] FAO Control of Water pollution, op. cit p. 12

[78] Law N° 2004/018 of 22nd July laying down the rules applicable to councils

[79] These towns include Douala, Yaoundé, Bafoussam, Bamenda and many others.

[80] Most workers of councils of big towns mostly execute only jobs that fetch them money. For example in Douala and Yaoundé where parking in the heart of the town is paid, any wrong parking attracts a penalty of 25000 in the case of Yaoundé. Most often some of them are bribed when they are about to affix the chain on the wheel of the car in the owners presence. A bribe of about 5000frs settles the matter than going to pay 25000frs tothe council. It should be noted that the bribe goes into the pockets of the council worker not the coffers of the council.

[81] For example the Government Delegate to the Yaoundé city council passed an order in 2006 forbidding the throwing of dirt or waste of any type and at any time of the day into public places Or streams. Thus order is

In the 1970s, in Bamenda [82] for example, there were sanitary workers who came from the Ministry of public Health and worked in collaboration with the Bamenda Urban Council. Their duty was to visit neighbourhoods and houses to make sure their surroundings were clean and equally that toilets were built 100 [83] metres from the house and waste was not dumped into rivers. Anybody who violated this order was levied a fine of between 2000 to 5000 frs. This kept the town of Bamenda clean. Unfortunately all this has disappeared today because of lack of funds to pay these workers from the Ministry of public health.

Another reason is the lack of personnel. Most councils do not have sufficient personnel to execute this job. Section 74 of the law regulatory councils states clearly that the mayor shall recreate, suspend or dismiss workers governed by labour laws and collective agreements. The mayor does not perform this function because of lack of finances. Employing more workers entails paying more salaries but because councils do not have enough finances this function cannot be executed.

The impact of corruption may not be completely discounted. One of the reasons why it is prevalent in Cameroon is because mayors donot have a stated salary paid by the state. These allowances are voted by the councillors which can be high or low. Where the salary is low the mayor may be tempted to take a bribe and once this happens he closes his eyes to many problems in his/her council area. The work mayors do is enormous but the salary they receive is not enviable. This accounts for the lack of total commitment to their duty. In some countries [84] mayors are paid by the state which put them on a comfortable salary.

In addition the decentralization process is yet to be effective in Cameroon .Until complete competence is transferred to councils; they will not have enough money to manage their affairs independently. For example, giving their mayors a good salary or allowances will motivate them to do their work effectively [85].

Lastly, money is needed to pay or motivate chiefs and "quarter heads" to call their populace and educate them on how to clean their environment and not to throw garbage into streams. If these quarter heads and chiefs are not tipped after about one or two meetings they become tired to carry out this exercise then.

This explains why the council does not effectively fight underground water pollution in Cameroon.

The Challenges of the Control of Ground Water Pollution

Ground water pollution is on the increase because of a number of reasons which will be discussed in the paragraphs below.

The punishment or fine levied on a polluter of ground water pollution is derisory and therefore not sufficient to act as a deterrence to polluters. The penalties imposed on persons (moral or physical) that pollute water are enshrined in the environmental code [86] and the water law of Cameroon. By the provision of section 16(1) of the water law, a penalty of between 10.000.000 and 20.000.000cfa frs or an imprisonment of between 5 to 15 years is imposed on any person who pollutes water. A keen look at the sanctions levied against a polluter indicates that the draftsmen wanted to achieve the most desired deterrent objective but this law is not often implemented. Besides, most judges rather tend to apply section 82 of the environmental code instead which carries a paltry penalty of 1000.000 to 5000.000frs compared to the 10.000.000 to 20.000.000frs provided for under section 16 of the water law ..Such meagre fines would hardly deter big companies from continuing to pollute water. For the deterrence objective to be achieved, the fine would have to be reasonably heavy or significant. From the foregoing it is discerned that two problems plague the fight against water pollution in Cameroon namely most of the laws are not enforced and there is confusion as to which law should be applied. In the midst of this, it is suggested that the water law should be the applicable law against those who pollute and not the provisions of the environmental code since the water law is a sectorial code. The law regulating water forbids the dumping of waste in water. Furthermore, section 4 of

violated daily in Yaoundé because the city council workers in charge of sanitationand hygiene do not go around to make sure the order is respected and bring to book those who have violated the order.

[82]Tazong Abel Ndeh, was the Government delegate to the Bamenda urban council then in 2008 when this discussion took place. He regretted the disappearance of these sanitary workers.

[83]Section 4 of the Municipal orders no. 05/1999/BUC regulating Health Hazards and Nuisance within the Bamenda Urban council municipality.

[84]In Gabon the salary of a mayor is 900000frs a month, in Britain it is determined by the code that regulates councils. In Algeria his salary is determined by the law that regulates councils. For more on this see DYNAMIQUES LOCALES. No. 001 October. December 2011. p. 10.

[85] This will help to resolve the problem of bribes from the public by the major and by workers to a great extent.

[86] Section 82(1)(2) of the code.

the Prime Ministerial Decree of 2001 [87] states that the authorisation of the deposition of pollutants in underground water can only be gotten from the minister of water. Most often polluters do not do so. They dump their untreated waste into nature and use pesticides indiscriminately. This leads to underground water pollution.

Instability of laws is also an aspect of uncertainty of laws. Laws in Cameroon are very volatile in nature. This is caused by constant modifications and/or repealing of laws shortly after they are enacted The Cameroonian legislature never seem to address the future by trying to foresee subsequent societal changes and adopting laws and in consequence thereof. Contradictions and instability of laws do not only choke the legal framework for the treatment and eventual protection of the environment in Cameroon but also equally cause stagnation in cases where the law is awaiting authentication by subsequent enactment. This can only encourage regulatory hurdles in particular and confuse the legal framework as a whole [88]. As discussed in the forgoing there is a conflict with the environmental code and the water law with regards to the penalty levied on a polluter of underground water.

The Almost Monolingual Nature of Laws

Cameroon is a bilingual country with French and English being its two official languages. All legal texts should be published in these two official languages in the national gazette. However most often, this is not what obtains. Texts are often conceived in one of the official languages (usually French) and so have to be translated into the other language. Quite often, an English version never sees the light of day. This is contrary to the constitution of Cameroon which makes it clear that English and French are the two official languages of equal status applicable in the country [89]. This lack of all texts in both languages disturbs victims of ground water pollution in the regions of English expression. They might not know that there is a law regulating ground water pollution or if they know, they cannot translate the text well to know the procedure for an action against a polluter.

Jurisdictional Issues

"Jurisdiction" is a term which is used contextually. It may refer to the competence of a court to hear and determine a matter. For a court to have the power to hear a case, the court before which it has been taken must not only be in position to decide the point in issue, it also must have jurisdiction over the subject matter of the case and jurisdiction over the parties to the case. It is important to note that the new 2006 law [90] regulating Judicial Organisations in Cameroon seeks to eliminate conflict of jurisdiction. It provides a stabilization clause with regards to actions pending before the High court, prior to its entry into force, to avoid problems of competence between the High court and Court of First Instance. Since the latter's financial competence has been upgraded to encroach on the former financial competence of the High Court, it means that either the Court of First Instance would claim jurisdiction over a pending matter (on entry into force of the law) because the amount of damage claimed is less than 10 million francs, or the High Court would simply desist its jurisdiction because the amount is less than 10 million Francs in conformity with its new competence. Even with this modification, a problem is still posed because sections 79-84 [91] do not state a fixed amount of fine which is supposed to be meted out to the defaulter. It gives just a range [92]. There should be a fixed amount; this will enable the victim to be able to determine the court that has jurisdiction to entertain his or her complain.

The complexity and cost of litigation

One of the chief functions of any legal system is that it should provide an effective mechanism for the settlement of disputes between members of the society that the system serves. Litigation is a judicial process by which national and international courts determine and enforce the rights and obligations of the parties. The idea of litigation is to accord parties the opportunity to

[87] Décret n° 2001/165/PM du 08 Mai 2001 précisons les modalités de protection des eaux de surface et d'eaux souterraines contre la pollution.

[88] This is in support of Francis Bacon when he stated that « he that will not apply new remedies must expect new evils » see Simpson, S and Fagbohun, O op.cit, p. 101.

[89] Section 1(3) of the 1996 constitution as revised in 2008.

[90] Law N° 2006/015 of 29 December 2006 on Judicial Organisation in Cameroon as amended in 2016.

[91] Of the 1996 Environmental code

[92] For example section 83 provides that any captain of a ship who is guilty of dumping hydrocarbons or other Marin waters under Cameroonian jurisdiction in violation of the provision of this law and its enabling instruments or international conventions relating to the prevention of marine pollution to which Cameroon is a party shall be liable to a fine of from 10000000 (ten million) to 50000000 (fifty million) CFA francs and a prison sentence of from 6months to 1(one) year or only one of these two sanctions. When a ship captain breaches this provision he or she warrants punishment. The quantum of damages is given by the judge. The court that will have the jurisdiction to entertain this matter will be determined by the quantum of damages awarded by the judge and this can only be done after hearing the matter. So if the matter was taken to the court of First Instance and after hearing, the court awards20000000frs as damages and this is above the competence of the court of First Instance, what will happen? Will the matter be transferred to the High Court. This is a grievous problem that plagues the Environmental code.

resolve their disputes before a neutral arbiter. Such resolution is, however, not so simple, yet most Cameroonian do not go to court when they suffer environmental damage because of a number of reasons namely: they do not have the required finances to file a law suit, secondly, most do not know their environmental rights and lastly most do not know that environmental law exist. Even those who know that the law exists do not have the zeal to go to court because they know or feel they may lose the case [93].

The question is how then can environmental law be enforced to fight ground water pollution. Even those who have the zeal to litigate (individuals and companies) must have *locus standi.*

Locus Standi

It is an elementary but most fundamental principle of virtually all adjectival jurisprudence that a party who commences an action must have the *locus standi* to do so. The plaintiff must show that he has sufficient interest [94] in the matter and not a mere busy body parading the corridors of the court for the fun of it. What then is *Locus Standi*? Jovitts [95] Dictionary of English law, defines the term to mean "a right to appear in court and conversely to say that a person has no *locus standi* means that he has no right to appear or be heard in such and such a proceeding." The lack of *locus* therefore means that there is no case for the court to hear, much less for the other party to respond. In other words, it is only where it could be shown by a person that the discharge of polluting substances is unreasonable in that it has specifically interfered with his use and enjoyment of his land that he would be entitle to compensation for the harm caused to him [96]. Even in such situations where the harm sustained is to all members of the public at large, a plaintiff would be denied standing to object the polluter's behaviour unless he can show that he sustained specific or special damage that was distinct from the damage that all members of the public at large sustained [97]. This issue of *locus standi* is a major problem when it comes to bringing actions for environmental damage (underground water pollution) even though it has been resolved to a lesser extent in Cameroon. Any individual can bring an action in court on behalf of the public at large if "public interest" is affected because of underground water pollution as was held in the case of *FEDEV v China Road and Bridge Corporation* [98].

Inadequate qualified judicial personnel

Judicial personnel serve *inter alia*, the function of interpreting and applying the law, peaceful settlement of disputes and upholding the rule of law. From environmental perspectives, these are the benchmarks of sustainable development.

In fact judges are at the cutting edge of the development and handling of underground water pollution problems [99]. The role which judges have to play in upholding and enforcing environmental rights against the pollution of the environment is even more crucial and is grounded on the argument that majority of cases coming before the court maynot be well handled by judges because most of them are not well trained in this area of the law. Consequently, judges have problems handling such cases when they come

[93] Mr. Ngwa is a worker of Foundation for Environment and Development (FEDEV) an NGO located in Bamenda. He made this comment at a workshop titled Strengthening Capacity for Effective Access to Environmental Justice". A workshop organised for environmental Lawyers by FEDEV on the 20th to the 30th of July 2010.

[94] For the test of sufficient, see generally *Hon. Justice Ovie-whysky and Ors v Chief OLawayin and ors* (1985) 5 NCLR 156. *Chief Ojukwuv Governor Lagos State and Ors* (1985) 2 NWLR (p+10) 806 *Prince Madara v MilitaryGovernor Oyo State* (1986) 3 NWLLR (p+27) 125

[95] Jovitts Dictionary of English Law (1994) 2nd Ed. Cambridge University Press. P. 225.

[96] *Green peace v EC commission* 1998 EVR.

[97] The principle theory in use is that of nuisance and this is in most time distinguished as either private or public and in some jurisdiction statutory. It is private when the unreasonable use of one's property causes substantial interference with the enjoyment or use of another's land. On the other hand, public nuisance arises from some act which causes inconveniences or damage to everyone. This under the common law remains the closest of private efforts being used in a bid of environmental problems of pollutions. It allowed for limited private actions in the area of public rights.

[98] Judgement No. CFB/004/09 (unreported). In that case, the appellant (FEDEV) brought an action against the respondent in the court of First Instance in Batibo. The judge intimated that the applicant had no *Locus standi* to access justice in the case. She based her argument on section 8(1) (2) of the environmental code. The judge argued that as per section 8(2) of the code, the applicant ought to have liaised up with a grass root organization proximate to community directly affected by the environmental nuance envisaged there in relying on section 8(2) of the code it was held that, the appellant has *Locus Standi* to institute this action as per 8(2). The court deemed it expedient to state that public interest litigation is an efficient tool to seek judicial address and subsequent government actions to the socio-economic challenges of the powerless segment of the society who due to their financial constrains and ignorance are unable to access justice. The question of who can sue in public interest litigation was partially addressed relating to the appellant.

[99] Justice Weeramontry, CO (2002) "Sustainable Development and the Role of Law, in Report of the Global Judges, Symposium and the Role of Law" Vol. 11 UNEP, Nairobi, p. 46.

before them for the first time [100]. However, for an effective discharge of their duties in this regard, the judges need to be seised of the matter. They need to attend capacity building seminars and refresher courses on environmental law.

Unfortunately, there is still need to build a culture of litigation in most Cameroonians who, for some reason have been reluctant to adopt judicial enforcement mechanism for the protection of environmental rights.

Lawyers on their part are not too different from judges. Lawyers are auxiliaries of justice. Without them environmental law cannot be enforced [101]. The scarcity of environmental lawyers is Cameroon is another contributing factor to the inefficient enforcement of environmental law. Amongst the reasons for this, one may cite the following: Firstly, environmental law is a new discipline on the university curricula. So few have a mastery of the subject. Secondly, most lawyers are not always enthusiastic about attending capacity building workshops or seminars on the subject. Lastly, environmental law litigation is not lucrative because the fine levied against a defaulter is paid to the state and not to the lawyer. Few lawyers are willing to do *pro bono* work [102]. Even the five percent (5%) deposit [103] necessary to file a petition for an environmental harm in court is sometimes heavy for the lawyer to raise.

Corruption

Corruption is one of the worst and at the same time most widespread forms of behaviours, which is inimical to the administration of public affaires [104]. This situation does not leave anyone indifferent .Both the government and civil societies in Cameroon with the help of some NGOs are making efforts to combat corruption [105]. Corruption does not only affect the economic propensity of Cameroon but also the Judiciary. Corruption hinders the smooth enforcement of environmental laws in Cameroon.

Inadequate resources on the part of Enforcement Authorities

The availability of finances is of utmost importance in the running of any organisation, institution or the carrying out of acertain activity. Resources play a key role in the enforcement of laws. For instance councils need money to enable them recruits more workers. The additional workers will carry out the most desired objective of the councils namely the movement from one neighbourhood to another to make sure that waste is not dumped in wrong areas such as streets, gutters and streams. The ministry of the Environment, Nature Protection and Sustainable Development also needs finances to recruit and train more controllers because there is an acute shortage of them. Finances are equally needed to enable the workers to move from place to place or to the *locus inquo* to verify why and who has caused the pollution so that sanctions should be levied against defaulters.

Lastly, the cost of bringing an action for environmental damage, including the cost of procuring technical evidence and the remoteness of institutions for redress deter even those who are aware of the environmental damage [106]. For example the five percent (5%) deposit needed to file an action (suit) for environmental damage is often difficult to raise by the appellant or lawyer. This problem of lack of finance contributes immensely to many environmental pollution cases not to be taken to court.

Lack of information and Environmental consciousness

There is so much ignorance and apathy [107] on the part of the people in the area of environmental damage. It should not be so. The greater proportion of the citizenry of Cameroon is oblivious of the environmental damage surrounding them, especially when the damage is caused by "intangible" process, and the action they should take. The main reason is that many Cameroonians are illiterate and thus know little or nothing about environmental laws. Even the literate ones know little about this because of the general poor reading culture within the society. In consequence, there is a general lack of awareness on the part of society in respect to environmental litigation. The problem is aggravated in this county because there is no sensitization of the population by stake holders. The solution to this problem is by educating the people of their legal rights in the area of environmental damage and litigation. This can be done either on radio,

[100] Fonja A. op. p. 395

[101] Judges and Environmental Law in Judicial Handbook on Environmental Law (2005) UNEP, Nairobi p. 24.

[102] This means giving of free legal advice and services for public good

[103] NJamshi, B.A. Nchunu, J.S. Galega, T.P. Chili CP op. cit P. 20.

[104] See Explanation Report of thecouncil of Europe's criminal law convention on corruption (ETS No .173) explanatory report p.1 paragraph 1 Strasbourg 27/1/1999

[105] The Government has created a commission of governance with no real powers and transparency recently provided the civil society with a document titled "Budget Tracking" on how to monitor the budget.

[106] See Vabi, MC, Ngwasiri, CN, Galega T.P., Oyono, R.P (2000) The Development of Forest Management Responsibilities to Local communities. Context and implementation Hurdles in Cameroon p. 29.

[107] Otolo, T.B. (1994) Effects of pollution on the Environment.Department of Soil Science.1st Ed. ObafemiAwoLowoUniveristy press, Ile Ife, Nigeria, p. 25.

television, newspapers, market squares and even churches and mosques. The moment the people are enlightened not only on their rights but the importance of caring for the environment they will be prepared to protect it not only by applying simple rules of hygiene and sanitation but also commencing actions in case of abuse [[108]]. Again it suffices to state that, if an individual is conscious of his right and the law guaranteeing it, he is likely to ensure that the law is enforced.

The Cost of Filing A Suit

In Cameroon the cash deposit of 5 per cent of the amount of the claim as a condition for filing a civil claim for damages is a serious setback to access justice especially by victims who most of the time do not have the means. In human rights context this is a classic case of violation of state party obligation to respect, protect and fulfil individual rights as spelt in the international covenant on economic, social and cultural rights.

Fear

Fear is equally an aspect which disturbs the enforcement of environmental law in Cameroon. Some workers are afraid that if they enforce the law they can lose their jobs. For instance, there are some companies which are owned by prominent and well-connected citizens in Cameroon. Attempting to close them down or levy a heavy fine on them might lead to their closure and thus invite trouble from the owner which can result to the dismissal to the said worker.

Burden of proof and other evidentiary difficulties

Evidence is of utmost importance in an action for environmental damage or pollution. The burden of establishing a claim would almost always be on the plaintiff who has suffered loss as a result of the activity of the defendant which impacts on the environment. He must show that he has suffered damage, there may be need to establish certain facts scientifically in order to establish the impact of certain pollutants on the environment. Quite often the poor farmer or villager affected by pollution may not be able to afford the services of experts who may need to carry out a long and detailed study of the environmental impact of chemical substances on the area, put against the polluter, who usually (although not always) a multinational which has several departments with highly skilled professionals who can readily come to court and defend the plaintiff by showing that the pollutant does not have the kind of impact on the environment which the plaintiff alleges [[109]]. This standard of proof required puts a lot of claims beyond claimants in environmental matters. For example in the Nigerian case of *Ogiale v Shell British Petroleum Development Co Ltd* [[110]] the plaintiffs lost their case both in the High Court and in the Court of Appeal simply because they could not match the quality of the expert evidence given on behalf of the defendant in the case.

An average spill of oil and waste affects water and land to establish such a claim the court might need the opinions of experts in different fields such as bio-chemistry, microbiology, geology, experts in marine ecology etc. It is difficult to have law firms in Cameroon specialising in these areas of litigation which may be able to go into contingency fee [[111]] arrangement with their clients only to share the proceeds of litigation if the claim is successful at the end of the day, in which case the firm will take care of the expenses of procuring the services of the experts to testify on behalf of the plaintiffs in the suit.

Furthermore, it is difficult for an individual to have access to evidence relating to most environmental wrongs or offences. For instance, it is not often easy to enter a factory to gather evidence. The private individual is also limited in gathering evidence because resources are needed to hire an expert. Evidence relied on could therefore be limited to secondary evidence. It must be emphasized here that it is more complicated if the defendant is a multinational with its head office abroad, the victims may find it difficult to sue them. This is what obtained in the *Bhopal* case in India [[112]].

[108]Section 6(I)(2) of the Environmental code states that "public and private institutions shall within the context of their competence, sensitize all the populations on environmental problems. The institutions shall consequently include programmes in their activities to provide better knowledge of the environment.

[109]Akpomudje Albert expressing this problem noted that "unlike other claims in court, proof of environmental claim generally, is scientific; you are expected to prove the effect of crude oil or gas flaring on the soil, water, environment, crops and other properties of the affected communities. It is not only difficult and tedious but very expensive. To prove an environmental claim due to pollution, a plaintiff must show that he is the owner of the land and for in possession of same and that the pollution has adversely impacted the land, crops, water there on or that the pollution has contaminated the air, water and food of the plaintiff in such manner as to cause real or potential harm to human health or wellbeing or damage or harm to non-human nature without jurisdiction" Akpomudje A.S (2005) Environmental claims resulting from oil Exploration and Exploitation in Nigeria". Being a paper presented at the NBA Annual Conference at Enugu on the 27th of August

[110] [1997] NWLR (Pt 480) 148

[111]This obtain mostly in t he USA but is not allowed in Cameroon.

[112] In that matter, an American multinational company, Union Carbide subsidiary pesticides plant releases 40 tons of MethylIsocyanate gas, on the 3rd of December

CONCLUSION

It is noted from the foregoing discussion that the availability of laws, policy standards, guidelines and practices do not provide an efficient solution for the scale of ground water pollution if these legal norms are not enforced. We need a positive change in public attitude and practices in addition to strict compliance with environmental regulations. It is due to this that some recommendations are put forward.

A proper framework law in the right sense of the expression, governing ground water pollution and its enabling decree should be instituted and enforced. Furthermore, the postponement of vital issues within laws to subsequent enactments (such as enabling decrees) should be left at the barest minimum and within a limited time frame. Unstable and uncertain legislation have far reaching negative consequences on the fight against ground water pollution.

Laws pertaining to ground water should be made accessible to all and sundry. In other words, the ordinary citizen should be able to find, understand and apply simple regulations governing ground water in both languages.

People should be educated about their legal rights in the area of environmental litigation especially ground water pollution. The issue of *locus standi* which hampers this right should be jettison completely.

The moment the people are enlightened as to their legal rights on their immediate environment, they will be prepared to protect it, not only by applying simple rules of hygiene and sanitation but also commencing actions in case of abuse. Courts or judges on their own part should punish promptly and severely all the breakers of the laws governing environmental management. This will enable punishment to achieve its most desired objective of deterrence if the punishment levied against defaulters is stepped up.

Furthermore, it is recommended that a central sewage system be put in place in all our industrial cities and towns in Cameroon for the treatment of domestic wastes before discharging them into water causes.

Recycling and re-using material, although not yet common place in Cameroon, should however be encouraged because it also eliminates hazardous waste and pollution.

The use of pesticides and fertilizers should be reduced drastically. The use of mechanised and biological alternatives of pesticides should be encouraged as in Europe. The use of pesticides should be prohibited within 10 meters of lakes, water courses, wetlands and conservation areas and prohibited within 10 meters of drinkable water reservoirs.

Lastly, MINEDEP and councils should recruit more staff who should be assigned the tasks to move from industry to industry and around neighbourhoods to make sure that hygiene and sanitation rules are respected and defaulters punished.

If these recommendations are adhered to ground water pollution will be reduced drastically.

1984 killing approximately 38000 people 200000 injured and many with irreversible deformities. Attorneys for the Indian government and for victims of the toxic gas leak favoured US, courts and sued in New York. The 143 law suits that were fired in US court and consolited were dismissed. The Federal judge held that victims of the 1984 Bhopal chemical disaster should seek justice in Indian and not American courts. The decision was a victory for union Carbide Corporation, which had fought to move the case to India. Two decades later, more than 100000 people had permanent injuries, light or severe. The ground water around the plant area remains contaminated, and the question of cleaning up the area is still unsolved. The cases are still pending in court after over twenty years because access to evidence by the victims is difficult.