IMPLEMENTATION STRATEGIES OF POLICY ON INDUSTRIAL WASTE DISPOSAL AND ENVIRONMENTAL EDUCATION IN NIGERIA

by
CHRISTIE O. OKOYE
Centre for Development Studies,
University of Jos, Jos.

INTRODUCTION

The need for environmental education touches every citizen and therefore touches the government. The world is being threatened by environmental pollution and degradation resulting from industrial activities. Consequently, several agencies like United Nations Organisation, the Global Environmental Facility Council (G.E.F.) have met at different times to initiate policies and guidelines to guide concrete actions towards achieving better managed environment.

The Global Environmental Facility Council met in Weashington D.C. in November, 1995 and agreed to carry out a series of information session on global environmental facilities in the developing world (University System News, 1995:2). The Global Environmental Facility is a World Bank financial outfit that provides grants and programmes aimed at protecting the global environment. In 1972, United Nations organised a conference in Stockholm on "Problem of Human Environment. This conference addressed the need for greater environmental awareness and concern (Stockholm Conference 5th—6th June, 1972). Also, in 1987, the World Commission on Environment and Development (Brundtland Commission) issued its report "Our Common Future" which was eventually discussed by the United Nations General Assembly. They concluded that environmental management should be integrated into economic planning, that public participation and the involvement of all parts of the developing communities are required, that economic growth, alleviation of poverty and sound environmental management are in many cases mutually consistent objectives.

Back here in Africa and Nigeria in particular, governments (both federal and state), agencies like Federal Environmental Protection Agency (FEPA) and some Non-Governmental Organisations (NGOs) have come out with laws, regulations, Decrees and pronouncements on how to improve our environment. For example, sections 16 and 17 of Decree 58 of 1988 by Federal Government of Nigeria, establishing Federal Environmental Protection Agency, mandates the agency to

protect, restore and preserve the ecosystem of the Nigerian environment.

It may be admitted that despite these moves for the improvement of our environment in many international fora around the world, actual action on the matter still lags far behind the resolutions and declarations of governments in many parts of the world. Unfortunately, Africa and Nigeria in particular falls within this group. One is now left with the following questions—were the resolutions and declaration implemented as specified in the programme design? if so, were the strategies for implementation strictly followed? What are the obstacles to effective implementation of the environmental policy? Answers to these questions will be of great help to this paper.

PROBLEM OF INDUSTRIAL WASTE DISPOSAL

Industries are important life-wire of our economic development. They are therefore necessary for the upliftment of our standard of living and of our well-being (Kontagora M.T. 1992:11). According to National Directory of Industries, Nigeria has developed significantly towards industrialisation over the last three decades. Over five thousand (5,000) industries are sited all over the counrtry and this covers industries at different levels-primary, secondary and tertiary. The issue of whether the apparent socio-economic gains have not been at the expense of resource depletion which is irreplaceable, when a cost-benefit analysis of our environmental problems vis-a-vis our industrial development is measured, should be given a rethink.

According to Aina (1992:14), available data from various environmental research studies carried out in the country and his personal experience arising from interaction with industries in the country show that environmental degradation and pollution are serious problems requiring urgent remedial action. In most industries, waste treatment is virtually non-existent, few industries have installed the simplest pollution control equipment such as sedimentation, sand filtration or oil and grease traps for effluents, scrubbers particularly traps or precipitators for gaseous emissions. Unfortunately, most of the treatment facilities, where they exist, are grossly inadequate to cope with the volume and type of waste generated. Some are poorly maintained or are parked up. This means that the treatment facilities we have in most of our industries are environmentally not acceptable.

In some industrial urban towns like Lagos, Port Harcourt, Kaduna, Kano, Jos, industries deposit the untreated effluents through canals into rivers, streams and sea. The resultant effect of these is water pollution problem. These wastes contain toxic substances, acid and alkali, solid inorganic matter etc which are dangerous to aquatic life, vegetation and human being. This also, posses some danger to human

race since a good proportion of the populace obtain their drinking and household water from these unacceptable sources.

Quite a good number of people rely on fish consumption as the major source of animal protein and fishes are known to harbour toxic metal pollution in their organs. Human consumption of these fish posses some danger for human lives. The Itai-itai disease and Minimata disease, both in Japan, have remained classical example. The Itai-itai disease in the 1960s affected Japanese population that consumed fish and other marine foods harvested from coastal waters into which cadmium-containing industrial effluent was being discharged. The disease was characterized by, among others, brittleness of bones, muscular weakness and loss of appetite. Minimata disease which occurred during 1953-60 was the fish. This resulted to serious damage of nervous system of the victims. Another case of widespread mercury poisoning as a result of consumption of contaminated fish was reported in the Thana district of Bombay, India. The victims consumed fish obtained from the polluted Kalu river. The major symptom exhibited by the victims is paralysis. In Africa, Nigeria in particular, similar cases might have been happening but we would be ignorant of the source or cause.

Disposing solid waste by industries on land causes land pollution. Solid waste can become toxic especially if they contain chemicals like polychlorinated biphenylis (PC.Bs) and toxic heavy metal as already reported in dumpsites in Nigeria.

Crops grown on soils polluted by industrial chemicals accumulate varying concentration of these chemicals. The same applies to meat and dairy products from livestock grazing on polluted pastures or drinking from polluted waters. Solid waste are dumped within or on the outskirts of our major cities. Dissolved toxic metals and toxic organic compounds pose serious health problems on animals and human populations using either the surface or ground water and eating the vegetables grown on such lands. Here in Jos, industrial wastes are dumped in the hilly zone of Bauchi Ring Road. Rain falls and washes the waste to nearby houses. Most inhabitants of these areas are ignorant of the adverse effects of these waste on them.

Air pollution can be as deadly as previously mentioned ones. Hazardous chemicals like PC. Bs and mercury are released into the atmosphere through open incinerator. We must be aware that some high risk of polluting industries abound in our country. For instance, vehicle assembly plants, asbestos, paints, thermal power station, pulp and paper, petroleum and petro-chemical, iron and steel, cement, sugar mill etc are some of them. Also, some toxic and hazardous chemicals like heavy metal, asbestos, fluoride ions are released into the atmosphere causing danger to human being and property. Continuous inhalation of cement dust by people residing close to the cement factories is

dangerous with inevitable adverse health problems like Asthma, bronchitis etc. Continuous emission of primary atmospheric pollutants, sulphur dioxide result to acid rain. This acid rain—(rain with P.H. 5.6 or less) has been known to cause deforestation, loss of soil fertility and destruction of fishery resources through acidification of lakes.

In 1984, the Bhopal disaster in India was caused as a result of a pesticide manufacturing plant which accidentally released toxic gas into the environment. This killed over two thousand (2,000) people and causing health problem to more than one hundred thousand (100,000) people in that neighbourhood.

We can see from the above that industrial pollutants may contain substance which are hazardous. Plants or livestock grown in the vicinity of the pollution site accumulate excessive amount of these chemicals which may be toxic to human consumers. Government being aware of this, set up a body (FEPA) that came up with policy statements and implementation strategies on how to tackle these problems for sustainable development. This paper believes that the policy statement is good but the problem lies with the implementation strategies.

STRATEGIES FOR IMPLEMENTING INDUSTRIAL POLLUTION CONTROL

According to FEPA's National policy on the environment backed by Decree 58 of 1988, the strategies for implementation include:

1. making it mandatory for new industries to incorporate pollution control facilities in all new points.
2. making old industries install pollution control facilities as may be practicable and reasonable from technical and economic stand point.
3. making old industries with inefficient and faulty pollution control facilities review the situation, resuscitate such plants and install anti-pollution facilities.
4. possibility of changing less-efficient existing industrial processes of more modern efficient ones.
5. substitution of toxic raw materials or chemical compound with less toxic ones.
6. recovery and recycling of wastes as material imputs (especially if the value of the recovered materials is greater than the cost of recovery).
7. locating or relocating high pollution industries in an environment with greater capacity to assimilate pollutions e.g. pulp and paper factories are normally located on the banks of the rivers or estuaries.

8. making periodic Environmental Audit mandatory for existing industries.
9. making Environmental Impact Assessment (EIA) mandatory for new industries.

IMPLICATIONS FOR ENVIRONMENTAL EDUCATION

The importance of environmental education for industrial waste control in Nigeria must be brought to the knowledge of every citizen. This will go a long way to creating awareness over the hazardous risk industrial waste poses on our lives, structure and environment.

However, in Nigeria, certain issues (economic, political and social) either consciously or unconsciously are brought to bear on environmental education. When we talk of environmental education, we mean educating the masses both young and old on the need for pollutant free environment. The poor constitutes majority of this masses. Poverty is so strong that the suffering they go through would cause them not wanting to be carried along.

Politically, most locations where industrial waste are dumped are near poor peoples' settlement. For instance, the toxic waste that was dumped in Koko Village in former Bendel State of Nigeria some years back. This should not have been dumped in Ikoyi, Lagos State or any Government Reservation Area (G.R.A.) in any urban city in the country.

The socio-economic position of people pre-disposes them to either accepting dumped waste or picking from the waste like the case of expired macaroni that was dumped in Jos, along Bauchi Ring Road. Poor and less privilege members of the society were struggling for them. Even the driver of the van was packing his own.

Also, socially deprived people are so disadvantaged that they cannot resist dumped waste even if they are aware of its dangers. Being poor, they and their children have little or no access to formal education which could have enhanced their awareness. Environmental education as important as it is must be given along side with efforts to reduce peoples' level of poverty.

CRITICAL EVALUATION OF IMPLEMENTATION STRATEGIES

In assessing the strategies for implementing industrial waste control policy, the following loopholes have been observed.

Strategy two, does not explain how the old and new industries will go about the acquisition and installation of pollution control facilities. It is expected that the strategy would have taken into consideration the fact that all industries are not the same both in size and

financial capacity. The strategy would have gone a step further to classify the industries and recommend the types of pollution control facility suitable.

Strategy five does not tell us how high toxic raw materials would exchange with less toxic ones. Also, this strategy does not take into cognisance the fact that the so called less toxic raw material may not be suitable enough for the right product. Emphasis would have centred on how to handle the toxic waste.

Strategy seven does not take into consideration the convenience of citing industries near the source of raw material. Locating industries far way from raw material source will not be to the advantage of that industry considering the uncertainty and the unreliability of transportation in Nigeria.

Strategy nine, restricts the Environment Impact Assessment to only the new industries leaving the old ones behind. The Assessment should be applied to both categories.

The strategies are silent over the monitoring of implementation strategies. There is need for one since stopping at recommending implementation strategies is not enough. Also, no mention was made on the need for intending industries to acquire a certified industrial waste treatment kit. This will serve as a pre-requisite before new industries are allowed to get registered. Finally, and most importantly is the non-inclusion of environmental education in our schools' curricular.

This should involve primary, secondary, tertiary and formal and informal adult education institutions. The need for the awareness (through this strategy) of the harmful effects of industrial waste on human beings should be reflected in our school curricular. The subject/courses will be made compulsory for all students at the above mentioned levels. This is by far, a better way of getting people to be conscious of their environments than the usual use of electronic and print media. Some Nigerians cannot afford to acquire radio, television or even daily newspaper.

RECOMMENDATION

With the foregoing, the paper recommends—that the mode of implementation strategies should be clearly stated for effective application.

— That environmental education should be included in the curricular of our primary, secondary, tertiary, formal and informal adult education institutions. This makes for progressive study of this course from primary school to university level.

— Industrialists intending to set up one must acquire and install a certified industrial waste treatment kit.

National Orientation Agency in collaboration with private non governmental agencies (NGOs) should map out comprehensive effective strategies for information dissemination on how to tackle the problem of industrial waste disposal in Nigeria.

CONCLUSION

The role of policy implementation strategies is crucial in knowing why policy on industrial waste disposal has not convincingly achieved its objectives. When policy is enacted and suitable implementation strategies are not mapped out for use, that policy may not be effectively implemented. For sustainable development, environmental education is necessary to make people aware of the dangerous effects of industrial waste in their environment, structures and lives. This is confirmed in the word of Boyers (1989:333) "when the people became well educated and well organised, then they will be able to say no to industrial waste pollution of our environment. Even, some industrialists or their staff members are ignorant of this stand and as such they do not care much about the recommended implementation strategies.

REFERENCES

Aina, E.O.A. (1992). Halting Industrial Pollution in Nigeria which way FEPA? in *FEPA Monograph (Two) Towards Industrial Pollution Abatement in Nigeria*—EOA Aina and N.O. Adedipe (Eds.) Ibadan, University Press.

Boyers, B. (1989). *A World of Ideas,* New York, Doubleday.

Federal Government of Nigeria (1988): *The Federal Government Harmful Waste Disposal.* Decree, No. 58 of 1988.

Federal Environmental Protection Agency (1992): Manufacturers' Co-operation, A Message in *FEPA Monograph I— Towards Industrial Pollution Abatement in Nigeria* (Eds.) E.O.A. Aina and N.O. Adedipe Ibadan, University Press.

Federal Republic of Nigeria (1989): *National Policy on Environment.*

Kotangora, M.T. (1992): Industrial Pollutant Abatement: A Difficult but Noble Mission in *FEPA Monograph 2 — Towards Industrial Pollution Abatement in Nigeria.* E.O.A. Aina and N.O. Adedipe (Eds.) Ibadan, University Press.

National University Commission (1995): *University System News: A Quarterly Publication of the National University Commission* (N.U.C.) vol. 5, No. 4, p. 2, Abuja.

Stockholm (1972): Report of the United Nations Conference on the Human Environment held in Stockholm (5th-16th June).

Husain, J. (1991): Environment and Development: Implementing the World Bank's New Policies in *FEPA Monograph I—The making of Nigerian Environmental Policy.* E.O.A. Aina and N.O. Adedipe (Eds.) Ibadan, University Press.