

Crime Prevention and Environmental Impact Assessment

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Abstract: Crime prevention through Environmental Impact Assessment (EIA) is a contemporary practice in environmental criminology. It employs the knowledge of the concern for the environment as well as theories and paradigms of crime prevention in finding solutions to criminalities. It is a managerial tool for the achievement of sustainable development. To this end, this study addresses the need to use environmental design in crime prevention and the necessity to consider alternative measures of pro-active crime prevention. The study will be invaluable to policy makers, evaluators, researchers, environmental criminologists and allied professionals, as well as those planning new initiatives of crime reduction.

Key words: Crime prevention, environmental impact assessment

INTRODUCTION

There is no universally accepted definition of crime. The subject matter of crime is within the scope of study of many areas of specialization. Among those fields are: law, sociology, psychology and environmental management to mention a few. In recent time, urban planners, architects, landscape planners, risks and hazards managers, behaviouralists, geographers and the armed forces have become equally interested in crime detection, analysis and prevention.

Furthermore, it could be viewed from various perspectives by different professionals. However, a comprehensive definition of crime was given by Curzon^[1]. He defined crime as any act or omission resulting from human conduct which is considered in itself or in its outcome to be harmful and which renders the person responsible or liable to some kind of punishments as the result of proceedings which are usually initiated on behalf of the State and which are designed to ascertain the nature, extent and legal consequence of that person's responsibility.

In another development, Mario^[2] defined crime as: 'accusation, fault, offense, or an act of omission, especially the one of grave nature, punishable by law as forbidden by statute or injurious to the public welfare; hence, serious violation of human law; as, steeped in crime, more generally, any offence, especially one of a grave character; or a serious wrong doing'.

A criminal in view of the above submission is a person guilty of a crime; felonious partaking of the nature

of a crime; pertaining to an act which violates public law^[2]. Environmental science on the other hand is equally multi-disciplinary in its perspective. It integrates many disciplines and includes some of the most important topics of modern civilization as well as some of the oldest philosophical concerns of human beings, that is, the nature of our relationship with our environment^[3]. The understanding of the environment therefore, requires a solid foundation in other fields of human endeavour.

In their own perspective therefore, environmental criminologists view the environment as a natural system that is not hostile with man, but a system capable of sustaining man and sustaining the impact of human development. In this regard, the environmental criminologists see crime as a countervailing force capable of reducing the human population or destroying the environment.

CONCERN FOR THE ENVIRONMENT

The magnitude and frequency of the contemporary problems of the environment and the threat they pose to the present and future generations have given rise to a number of pressing issues. Among the environmental problems with intercontinental range and scope are earthquake, volcanic eruption, landslide, global warming, ozone layer depletion, biological diversity loss, deforestation, environmental disasters, crime, desertification, erosion, pollution, flood and wastes.

At the international level, the following factors are considered so as to determine the necessity and urgency required in finding lasting solutions to such problems.

- The ease of problem recognition.
- The perception of the problem
- The nuisance scale of the problem
- The space and time scale of problem
- The quantitative measurement of the problem
- The possible solutions to the problem

On a global scale, the United Nations International Conference on Environment and Human Settlement held in Stockholm, Sweden (1972) geared up the global environmental awareness and the international mobilization for environmental management. This was quickly followed by Habitat I summit in Nairobi, Kenya (1976). Other international moves to save our threatened planet include the United Nations Conference on Environment and Development held in Vancouver, Canada (1986). A follow up to this was the Earth Summit in Rio De Janeiro (1992). The theme of this summit was environmental protection and sustainable development. Other important environmental landmarks are outlined below:

- Conference on Human Rights held in Vienna (1993)
- Mini-Rio Conference held in Manchester (1994)
- International Conference on Population and Development held in Cairo, Egypt (1994)
- The Social Summit held in Copenhagen (1995)
- The Beijing (China) Women Conference (1995)
- Habitat II Conference in Istanbul (1996)
- World Food Summit in Rome (1996)

In these international environmental fora, critical discussions were made about sustainable man-environment interaction. Efforts at combating environmental problems in Nigeria are concentrated towards problems like unsanitary condition, solid wastes, industrialisation, deforestation, erosion, desertification and over-grazing, whereas, crime is a serious problem with higher frequency and magnitude than the above-mentioned problems^[4].

Attempts at moderating the Nigerian environmental condition include the following: Land Development (Road) Law (1948), Town and Country Planning Law (1948), Building Adoptive Bye Law Order (1960), Oil Navigable Waters Act (1963), Petroleum Act (1963), Drilling and Production Regulation (1969), Environmental Control Protection Division (1973), Land Use Decree (1978), Harmful Waste Disposal Decree No 42 (1988), Federal Environmental Protection Agency (FEPA) Decree 58 (1988), National Policy on Environment (1989), National Housing Policy (1991), Environmental Impact Assessment Decree (1992) and Nigerian Urban and Regional Planning

Decree 88 (1992). At the state level, environmental measures include the edicts on Urban Planning and Development Boards, State Environmental Protection Authority etc.

In Nigeria, the non-governmental organisations that are interested in saving the environment from further deteriorations include: Ecological Society of Nigeria (Eco. S. O. N.), Friends of the Environment, Green Environment Movement (G.E.M.), Nigerian Conservation Foundation (NCF), Nigerian Society of Environmental Management and Planning (NSEMAP), Forestry Association of Nigeria (FAN), Nigeria Environmental Study and Action Team (NEST) as well as Centre for Environment and Management (CREM). All these organisations are studying both collectively and separately to safeguard the environment from further degradation.

THE PROBLEM

The first question a layman will like to ask is: what is the business of an environmentalist, a geographer or a planner in crime analysis? The answer to this simple question is not far-fetched. Little or no attention has been given to the development and implementation of environmental measures to prevent crimes^[5]. Such an omission calls for this study. Within the context of environmental management therefore, the motivation for this study rests on the maxim of sustainability which says that prevention is better and cheaper than cure. Based on this cliché, Marry and Cressida^[6] opined that crime is costly, damages the environment, inconveniences people and in some cases actually endangers them, hence, the necessity to prevent crimes through environmental measures.

In the contemporary time, mankind has acquired some sophisticated weapons to misuse the environment instead of making the judicious use of it for man's use and his benefit. Increasingly, the rate of crime has become a source of concern to the police and to the public and the incidence of the crimes has shown a significant increase in Nigeria over the recent years^[7]. This is a dividend of the socio-morphological revolution that is currently taking place as a result of the rapid rate of urbanisation in many parts of the country.

The trend of crime has reached a disastrous proportion for urban and rural areas. In many cases, the criminal tendencies destroy both human potentials and the environment. This is the result of unsustainable environmental monitoring. The aftermath of this has led to threat to man's life and the future of humanity. Increasingly, natural environments are being irreversibly changed by man's activities and the potential human use

of natural resources are in such ways that are not compatible with environmental protection goals.

A fundamental challenge facing every society is to create political, economic and social systems that promote peace, human welfare and the sustainability of the environment on which life depends^[8]. With the above as a background, the Ford Foundation as well as other international agencies are keenly interested in human welfare and peace. This can only be achieved in a crime-reduced environment.

The problem of crime is recognized as a critical or genuine environmental hazard as a result of the magnitude, frequency as well as the level of devastation in terms of loss of human life, materials as well as the psychological fear instilled on the associates of crime victims or the neighbours of the crime infested areas. Hence, there is the necessity to prevent crimes with the aid of environmental design, as well as to assess the environmental impacts of other measures of crime reduction.

This study is thus geared up based on the premise of evaluating a social and technological capability to carry out remedial action capable of effectively reducing the crime rate. Furthermore, the study is stimulated as an avenue to steer the level of determination and use of resources (by the government, donor agencies, non-governmental agencies as well as individuals) to make the management of crime problem succeed. This study is therefore built on the foundation of the need to develop better method for detecting, evaluating and preventing the risk of crime to man the environment.

THEORIES AND PARADIGMS OF CRIME PREVENTION

The general increment in the understanding of natural system and the applicability of theories, concepts, laws and principles have helped environmental planners in interpreting research findings and in applying the knowledge to solve environmental problems. As a scientist, the modern environmental manager needs the knowledge and application of theories and concepts of related professions like law, architecture, anthropology, psychology, economics, sociology, geography, ecology, municipal engineering and even archaeology in environmental criminology.

Environmental Criminology is the scientific application of environmental measures in the understanding of crimes. It goes further to use such knowledge in the prevention of possible occurrence of crimes. This skill has enhanced our sensitivity to the consequences of actions as well as how to protect the

planet earth from further destruction. On this note, this reaction to environmental crimes means that the crimes may be easily prevented.

The measures of crime prevention include laws, regulations, personal actions, as well as environmental impact design. The application of environmental measures in tackling crime becomes necessary as a result of the following considerations:

- The ways and manners in which man is destroying his environment is rapidly increasing-study Homo Vandalous.
- Environmental crimes that were once locally confined have become regional problems or even global problems-Globalisation of Crime.
- As metropolitan regions have grown, the environmental destruction that had been confined to the centers has spread-Spread Effect of Crimes.
- The complexity, magnitude and frequency of crime is skyrocketing-Environmental Impact Assessment of Criminal Tendencies.
- The uncertainty of relating cause to effect is much greater than ever-Environmental Awareness.
- The fear of crimes is ever-increasing-Psychological Effect of crimes.
- Crime itself is a hazard as well as a risk in environmental context-Environmental Hazard and Risks Assessment.
- Some of the consequences of crimes are irreversible on man and on the natural environment-Ecological Sensitivity Analysis.
- It is very difficult to replace or replenish the already damaged environment-Environmental Sustainability.
- We can use the understanding of the environment to mitigate crimes-Crime Prevention Through Environmental Impact Design.
- The advantages in the prevention of crimes outweighs the cost of doing so- Environmental Cost Benefit Analysis.

The above analysis shows a typical paradigm of environmental criminology. It presents an outline of the common vocabularies in environmental planning and management. Further case studies of crime prevention are presented in the following paragraphs.

Investigation from police reports confirm that many 'serious' criminal activities are group studys. The records denote that majority of the offenders are groups of teenagers and young people who always team up as syndicates to perpetrate their nefarious activities^[7]. Contrarily, personal interviews with some prisoners confirmed the fact that gansterism does not apply to all

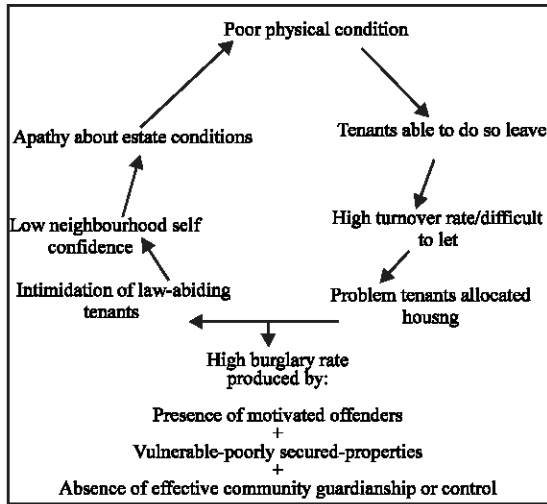


Fig. 1: An embryonic vicious circle of neighbourhood decline. Source: Nick and Janice^[10]

criminal acts. On this note, some criminals prefer to carry out their criminalities alone, rather than in ‘team spirit’ for the fear of being indicted in case one of them is being caught. This idea was widely supported by Douglas^[9].

Specifically, a paradigm of the conditions in which burglary is likely to thrive was postulated by Nick and Janice^[10]. As an outcome of their research in England and Wales, they came out with the paradigm of embryonic circle of neighbourhood decline. Their findings is presented on the Fig. 1.

According to Nick and Janice^[10] and as clearly illustrated in the above figure, there is an organic relationship between the rate of crime and the opportunity for such. This assertion was equally supported by Marcus and Ronald^[11] in their own paradigm of opportunity makes the thief.

From the figure above, a newly developed environment will pass through some common stages of obsolescence, deterioration, decay and abandonment. A deteriorated environmental condition will be characterized by notorious neighbours who would intimidate the law abiding tenants. This will eventually lead to low neighbourhood self confidence. Overall, there will be apathy about estate conditions and poor physical environment.

Invariably (as indicated in the figure above), the high privileged tenants would filter up to better environmental conditions. This will invariably lead to high turnover rate and the propensity for the poor to find it difficult to let. The end result would be problem tenants who are contributory factors to high burglary rate produced by the presence of motivated offenders, poorly secured

properties and absence of effective community guardship or control.

In spite of the foregoing, Nick and Janice^[10] suggested the following crime preventive measures:

- Target hardening of victims
- Target hardening in hot spots
- Who are target hardening?
- Measures complementing target hardening
- Neighbourhood watch and
- Property hardening.

Beyond any reasonable doubt, if all the above measures are taken into consideration, the rate and prevalence of crime will drastically reduce.

ENVIRONMENTAL IMPACT ANALYSIS AND CRIME PREVENTION

The environment may be defined as all the components (physical, socio-cultural and biological) that constitutes the general surroundings of organisms wherever they may be living on the surface of the earth. The environment therefore, is any substance or condition that is prevailing within the surroundings of a phenomenon which can as well affect it either negatively or positively. There are many negative consequences of crime on the environment. In the same manner, the measures of crime prevention may equally impact some adverse effects on the environment either directly or indirectly.

It is in the light of the foregoing that it becomes necessary to consider the environmental impact analysis of crime preventive measures before we know the best practicable alternative measure(s) that will have the least adverse effects on the environment. Environmental Impact Assessment (EIA) is a managerial tool of achieving environmental sustainability. A key principle that is often applied in EIA is that of ‘prevention is better than cure’. It is equally applicable to crime prevention through environmental impact design. On the long run, it is used to achieve environmental sustainability.

EIA was defined by Olokesusi^[12] as a systematic process of the identification, prediction, evaluation and presentation of the probable as well as possible consequences of a proposed action at a stage in the decision making process where serious environmental damage can either be minimized or avoided. In this regard, we can use the technique of EIA to prevent crimes. Again, the application of EIA can help us in the determination of the most appropriate crime preventive measure to be adopted.

EIA is a mechanism for environmental protection. It is a tool of environmental management that is used by planners, resource managers and public policy decision makers to translate the principles of sustainability to practice. The aim of this sub-section however, is not to give a detailed explanation of the studyings of an EIA system. It is not equally meant to provide the historical analysis or the operational procedure of EIA. Rather, it is meant to complement our discussions on the issue of crime prevention.

Within this context therefore, EIA is a comprehensive and systematic evaluation and/or appraisal of how the various crime preventive measures impinge upon the environment which consequently affect the ecological balance, well being and/or survival of people or species in the environment. On this note, we can rightly say that EIA is in support of crime prevention because crime itself is capable of damaging the environment. EIA is thus a technique that is applied for the purpose of improving resource management, land use and protection of the environment from further degradation.

Environmental impact assessment has the tendency to anticipate and prevent possible environmental damages. It creates more room for environmental awareness, it makes people to realize the imminent hazards and risks in crime and encourages them in the selection of the best way(s) of counteracting such problems. As it is applicable to some crime preventive measures like policing, neighbourhood watch, perimeter fencing and automatic alarm system, EIA helps in Environmental Cost Benefit Analysis (ECBA). Hence, it saves time, energy and the cost of carrying out repairs, since such damages should have been pre-empted and prevented.

The information technology being used in EIA is the method of collecting different information on different variables concerning the environment or assessing the negative and positive consequences of the action before, during and after project commissioning. On this note we can rightly say that the knowledge as well as the application of EIA is of vital significance in crime prevention. Again, EIA is useful in crime prevention because it is futuristic in its perspective. It is used to mitigate further abuse of the environment. Above all, the major role of EIA is to protect the variety of natural biological and physical resources of the environment.

The report of the World Commission on Environment and Development^[13] titled 'Our Common Future' recognized EIA as one of the key components in the promotion of environmental awareness and sustainable development. It is used to forecast the possible adverse effects of proposed plans. It is equally used by decision makers to determine the suitability of proposed policies

and programmes. Above all, it gives room for public participation in decision-making process. The proper scrutiny and application of EIA ensures appropriate environmental resource evaluation and monitoring of projects. It gives room for the consideration of alternative projects. As such, EIA process is now in common use for the renewal and conservation of natural resources.

There are many types of crime. The ones that are peculiar to developing countries (Nigeria inclusive) are stealing, assault, murder, fraud, rape, vandalism, arson, prostitution, armed robbery, burglary, car snatching, juvenile delinquency, abduction, kidnapping, forgery, hooliganism and shop-lifting to mention a few. Realizing the socio-economic and psychological effects of the crime, the following preventive measures were suggested by Ibimilua^[7]: environmental surveillance, neighbourhood watch, environmental design, policing, the use of trained dogs, architecture of fear, improved lightings, regulated parking and perimeter fencing to mention a few. From the foregoing, we can rightly say that crime prevention requires the wholistic consideration of the cause-effect analysis of crime in order to determine the appropriate solution.

Incidental to the above analysis, the applicability of crime preventive measures entail the consideration of social environment impact, aesthetic environment impact, economic impact as well as the physical impact. The applicability of EIA in crime prevention also require the prerequisite information about the type, causes, effects and practicability of the proposed measures. All these are often stated in Environmental Impact Statements (EIS). The purpose of an EIS is to determine the environmental effects of a proposed action before its implementation. An EIS is written at a stage in time when a major action significantly affecting the quality of the human environment is proposed.

The Geographic Information System (GIS) is one of the tools used in EIA. It is a planning tool that is used in decision-making and environmental monitoring. It is an important tool for the study of topography, soil, vegetation, erosion, surveying and crime. GIS is often used in conjunction with Remote Sensing (RS) technique to aid decision-making and choice of crime preventive measure. The techniques are used in crime investigation, detection and prevention. In the developed countries, they are commonly used with forensic science to determine the place, extent and hoodlum(s) of major crimes like murder and stealing. They are equally used in collaboration with Closed Circuit Television Systems (CCTS) for environmental surveillance.

Nevertheless, most of these techniques are mostly useful where there is uninterrupted power supply,

technological know-how, skilled manpower and conducive environmental condition. Along the same direction, the application of other concepts such as Remote Sensing (RS), Environmental Cost Benefit Analysis (ECBA), Ecological Sensitivity Analysis (ESA) and Air Photo Interpretation (API) are quite crucial in crime monitoring and prevention. Specifically, API is used in the determination of 'hot spots' and 'hide outs'. Again, the RS technique is a systematically designed and spatially indexed approach that is used in collaboration with GIS for data collection, impact estimation, data management and monitoring.

The above mentioned tools are very useful in EIA for information collection, management, comparison of diverted sets of data, decision making process, as well as in the spatial analysis of environmental impacts. At every stage of EIA, public participation as well as consultancy services are required. The citizens will enumerate the direct and indirect causes and consequences of the problem while the consultants will use their professional (expert) opinions to propose appropriate measures.

By way of summary, EIA is one of the widely recognized approaches for crime prevention and invariably a technique for achieving environmental sustainability. Sustainable development cannot be achieved in a crime infested environment. The essence of EIA therefore is to predict the nature and magnitude of environmental crimes and to mitigate the negative consequences of such crimes at the appropriate time, when the effect is least pronounced. On the long run, in case of any eventuality of crime, an EIA will help in the determination of the best preventive measure(s) to be adopted.

CONCLUSION

Effective environmental management demands human security. As much as man is the most prominent component of the environment, the need to protect mankind from terrorism, aggression, brutality, destruction and other illegal acts should not be undermined. To achieve environmental sustainability therefore, there should be an integrated effort towards environmental accountability, monitoring, reporting and governance.

Environmental Impact Assessment is an important tool for the achievement of the most desired sustainable development. It is a very useful tool in the hands of the consortium of environmental managers, criminologists, architects, surveyors, building technologists, municipal engineers and allied professionals. Above all, it is a pre-requisite to a potentially safe community.

Crime prevention through environmental impact assessment should be used in conjunction with other measures of crime prevention like surveillance, forensic science, civil enforcement, guards, policing, security alarms, trained dogs and closed circuit television system. These measures will prevent our cherished environment from further deterioration.

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