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## The Ethical Effects of Environmental Development on Irrigation; The African Experience

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### Abstract

*With the knowledge of environmental education, man is aware that environmental hazard is what the society does to the environment. By man discharging substances in the air, water and soil (irrigation) etc. As the crops man plan on his farms need water in order to grow well. At times, man may have inadequate rainfall. When this happens, the amount of water required by the plants will not be enough for the plans. The plants begin to wither, some look stunted in growth and finally die off. One method or system by which water can be supplied to the farm is irrigation. This entails bringing water from a source of water nearby and making it available to the crops. Thus, water is tapped from flowing water and diverted to the farm through channels. In Africa (Nigeria) irrigation is largely used to grow vegetable, sugarcane etc. While this in turn results to different crisis in respect to water. As water can be used more than once if it is sufficiently purified between uses by natural or artificial means. But man render much of his water unfit for reuse through different kinds of pollution. Raw and inadequate treated, sewage, oil, synthetic organic chemical (that is detergents,) her pesticide), inorganic chemical and mineral substances, plant nutrients, radioactivity and hoof. Today man faces different crises to respect to water. Like irrigation cause the spread of water borne diseases, raising of underground water table, damage of ecological system etc. While afro-chemical like fertilizers cause water bodies, health hazards etc. Thus, man is being influenced by the environment, man in turn influenced it by trying to control the environment. In this vein, man is to be autonomous lord and master over nature, a power he had to demonstrate in order to overcome food crises. With this, the paper shall examine the ethical duties of man as master and lord of environment, the duties of man in society. The values of an ethical social environment for Nigerians, and the interaction of physical and social environments. Finally,*

*the effects of environmental education as an physical environments on water, its effects through irrigation to man's health.*

Here environment means the surroundings. Man is found within natural and manmade element. Few of these elements that are neither made by man nor created by God (Nature) consist of man's environment. In this vein there are two types of environment, which are physical and social environments. The physical environments are those elements that naturally surround man, which are relief, climate, vegetable water bodies and mineral resources.

While the social environments refers to other human beings found within us. These human beings exhibit particular behaviors, activities that produce certain objects they use for different purposes both for their advantage. This means behaviors exhibited, activities perform and objects produced by man always influence man's way of life. This justifies that other people can influence an individual by their behaviors, beliefs, attitudes, the way they dress, the food they eat, the furniture and utensils they keep in their homes. Thus, an individual can influence an individual by their behaviours, beliefs, attitudes, the way they dress, the food they eat, the furniture and utensils they keep in their homes. Thus, an individual can influence the group by his own behaviour in several ways.

Along this line, this is possible through man's ability to organise certain things for his pleasure; survival, desire and for several other social groups, activities and organisation. According to Sherif and Sherif (1968:276):

*A social unit consists of a number of individuals who stand in role and status relationships to one another, stabilised in some degree at the time, and who possess a set of values, or norms of their own regulating their behaviour, at least in matters of consequence to the group.*

While a society on the other hand is in totality the many social groups with standardised social institutions like the family, law, education, religion, economy, politics, health, legal, professional associations and marriage.

In this vein the paper shall examine the ethical duties of man as master of environment, the duties of man in society, the values of an ethical social environment for Nigerians. The features of physical environment and their elements with the features of the social environment are reviewed, then the interaction between the physical and social environment are discussed. Finally, the effects of environmental education as an impetus of man's responsibility to physical environment on water with particular reference to the effect of irrigation to man's health.

### **The Ethical Duties of Man as Master of Environment**

Man is the most significant element in the society, as he is the modifier of the social environment and with this, man has several ways, duties or roles to play in the social environment to improve the society as he is the master of the society for his own good and that of the other species. On this are bases the needs of man to live in society as he is a social creature has to be met as his survival to live in society is based on the fulfilment of his desire to improve his living conditions in a particular environment. The environment could be physical or social but it should provide security and protection for the citizens. Men chose to live in groups with the aim that the straggle of communal efforts they would be able to aid themselves to combat certain difficulties, or hazards and problems of life, it is on this basis that the early societies developed.

Thus, societies have to develop their identities, with this, each group gradually established patterns of behaviour that have become the cultural identity of that society. With an aspect of this, culture is the essence for each group members to be aware and co-operate with each other and with other groups as this serves as the important element for the survival of the citizens and the society as a unity. It is clear that the social value of co-operation and social awareness has been part of the Nigerian culture for years.

### **The Duties of Man in Society**

Socialization which is the learned social behaviour that developed and societies emerged, is a process of learning that takes place within a society and it concerns making the individual fit to his duties as a citizen of the society. With this process the child acquires the society's language, skills and the ideal behaviours that will help him to live as an effective individual in society.

It is clear that it is at the process of social living that the individuals' duties in the society are highly important. Here the socialization of the young is guided consciously or unconsciously by the citizens of the society. Thus, membership of the individual in society is very significant, as the attitude in which the young members of the society are brought up depends purely on the social values held by the adult members.

With this, it is a known fact that the individuals' personality is, to a large extent, moulded by the pattern of socialization which he has undergone. In this vein, it is the duty of the elders or adult members to help the young one imbibe the desirable values in the interest of the nation. This demands determination and greater sense of dedication on the part of citizens, and failure to do this, will produce citizens with

### *The Intuition*

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negative attitudes, manners, characters or one kind of socialization known as psychopath. According to Special Teachers Upgrading Programme, Nigeria Certificate in Education (STUP; NCE) course book on Social Studies Year I (2007:170), a psychopath is an "individual who appears to have no social conscience". He may be able to state what is considered right and wrong, but cannot feel right and wrong. X-raying the Nigerian society, it is possible that such people are found who are psychopaths. This means there are some Nigerians whose interest are more on wealth, with this desire they want to become rich in the shortest possible time without stress.

This is not to the advantage of the country to bring up citizens who are only interested in material benefit: citizens who do not want to make sacrifices for the society. In this vein, several citizens have been found embezzling government funds by inflating figures. Thus, dishonesty has become a national problem.

### **The Values of an Ethical Social Environment for Nigerians**

In Nigeria today, it is the duty of every Nigerian to develop the Nigerian society. Thus, it is the duty of all Nigerians to keep to the ideal national values and pass them on to the next or younger generation. These values include:

1. Respect for the worth and dignity of the individual;
2. Moral and spiritual values in interpersonal and human relations;
3. Shared responsibility for the common good of the society;
4. Respect for the dignity of labour (NPE 1986); and
5. Respect for government and public property.

This has to be achieved by taking positive step to achieve the national objectives by contributing towards the government's efforts to build a moral and valued society which include;

1. A free and democratic society;
2. A just and egalitarian society
3. A united, strong and self-reliant nation,
4. A great and dynamic economy; and
5. A land of bright and full opportunities for all citizens (NPE, 1985).

With this, for an individual to serve Nigeria he must stand out against injustice, and be patriotic at all times, and use the citizenship rights for the good of our communities also personal development.

### **The Interaction between Physical and Social Environment**

Man is the heart and master of both environments, yet he is influenced by the environment, while he also influences the environment by trying to control the environment.

According to Schuurman, (1995:137) today man is deity scientific-technological control particularly the material welfare associated with it as we see in nature "mother earth". While religion of nature, is represented in several streams of the New Age movement, where the earth is adored as a goddess. This dualistic belief characterizes the development of our culture. Such is the mind of our times. This justifies why consistent environmentalists often speak of the "Spaceship Earth". Thus, Schuurman (1983:29) confirms that today, this mode of thinking housed the possibility of reducing nature to a mere object of technological manipulation. Now, man is no longer seen as a child of Mother Earth or as part of the whole of natural reality. On the contrary, man is to be the autonomous lord and master over nature, a power he had to demonstrate. This means for technology, man is no longer limited to using the things nature offered but he is able to take from nature as he sees fit.

He further asserted that mankind's heightened responsibility is becoming increasingly a communal responsibility, and this development requires a much stronger sense of community among people than has been experienced up until now. It is a condition that can really be met only if there is a common sensitivity to norms and a common religious consciousness (Schuurman 1995:19).

Thus, this justifies that different components are interdependent, like the amount of rainfall depends on conditions, the kind of vegetation is predicated by the type of soil, the rainfall and relief, this in the long run tells on human activities. Like man's occupation is dictated by these physical characteristics. In this vein, a farmer operates within the fertile land of the forest or grassland or savannah. While a cattle rearer can only operate within the savannah or grassland. Then fishermen live near river line areas and a lumberjack must live within the forest.

These environmental components determine the culture, that is the way of life. By determining the kind of food we eat, the cloth we wear and our pattern of settlement as all done by man to adjust to our environment.

Thus, as man is the master of the environment, he has to be careful with the use of the available resources wisely to avoid environmental problem. He has to live in line with the rules and regulations binding/guiding or governing the society or community, while he has a duty of protecting his life and the lives of other people in the society. Through respecting the roles of both the physical and social environment, like physical environment roles are that of sustaining life. Where the air, water, soil and vegetation are all sources of our food. Here man relies on water for survival, as our body is composed of water element, we drink water, use it for domestic uses (for

bathing, washing, cooking and growing plants and animals as our food), while our environment is the source of our shelter and clothing.

Man as the master of his social environment, interacts with other men within his environment the institutions are formed to function as he sees it fit. Through provision and distribution of goods and services, where rules and regulations are formed, for protection of members of the society, then provision is made for employment, that is taking care of the social welfare services of the society.

### **Effects of Environmental Education as an Impetus of Man's Responsibility to Physical Environment (Water)**

Water bodies are essential to man and they consist of streams, rivers, lakes, lagoons. The water got from this water bodies can be used for drinking. In the same vein, man can practice fishing and use water for transportation. It can be used to generate hydro-electricity. When there is too much water than we require or need in our environment, it can result to flooding. When there is lack of water or it is not found in sufficient quantity particularly for plant growth, then drought may result in this case man has to embark on the method of irrigation. Thus, in interacting with water, particularly irrigation method or system, man can encounter some problems. Like how has man being able to cope with these problems, as it is certain that he does this by using irrigation system on farmlands. In this vein, better irrigation practices are to be practiced in Nigeria. With this, dams are to be built along major rivers and channelled for irrigation purposes.

From the fore-going the crops that are planted on the farms need water in order to grow well. At times, they may have inadequate rainfall. In a case where this occurs, the amount of water needed by the plants will not be adequate for the plants; the plants begin to wither, some look stunted, while some may eventually die. In this vein it is clear that this method by which water can be supplied to the farm through irrigation is the most vital means to save the situation of food crisis, as the bringing of water from a source of water nearby and making it available to the crops leads to a successful harvest. But this is done by trapping water from a flowing water and diverted to the farm through channels that are made steady.

### **The Environmental Effects of Irrigation to Man**

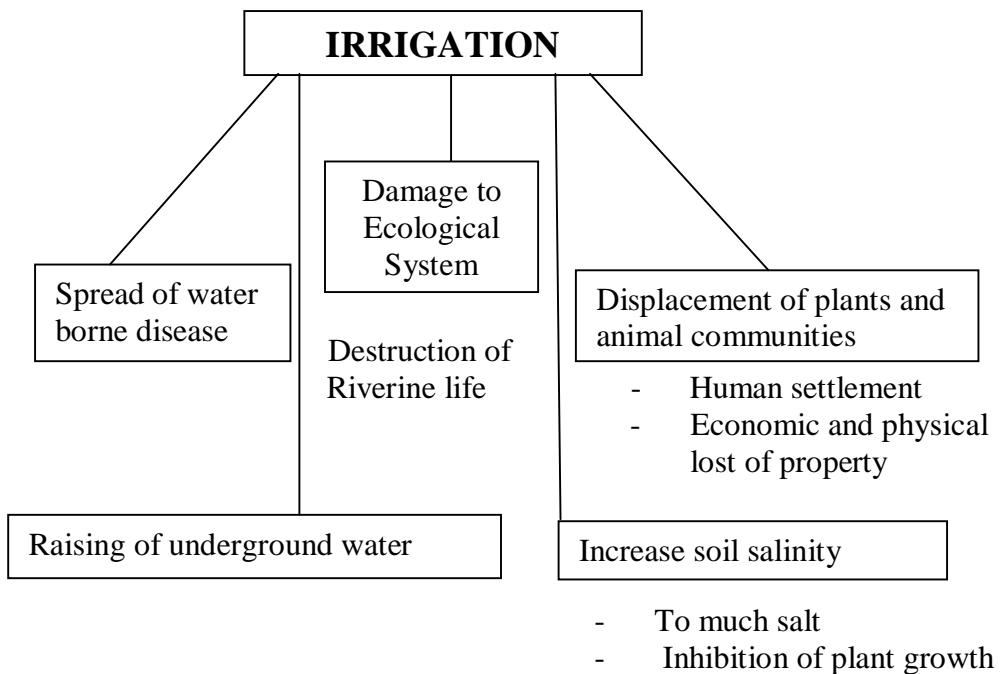
It is clear that the environmental effects of food production result from the

1. Wind and water erosion
2. Loss of animal habitat
3. Desertification
4. Loss of soil fertility from leaching nutrients and laterisation
5. Unintended effects of fertilizers and pesticides

6. Problems association with the spread of irrigation.

Some of the measures which have been taken to counteract drought effect are irrigation, moisture and soil conservation, and the creation of safe drinking water resources.

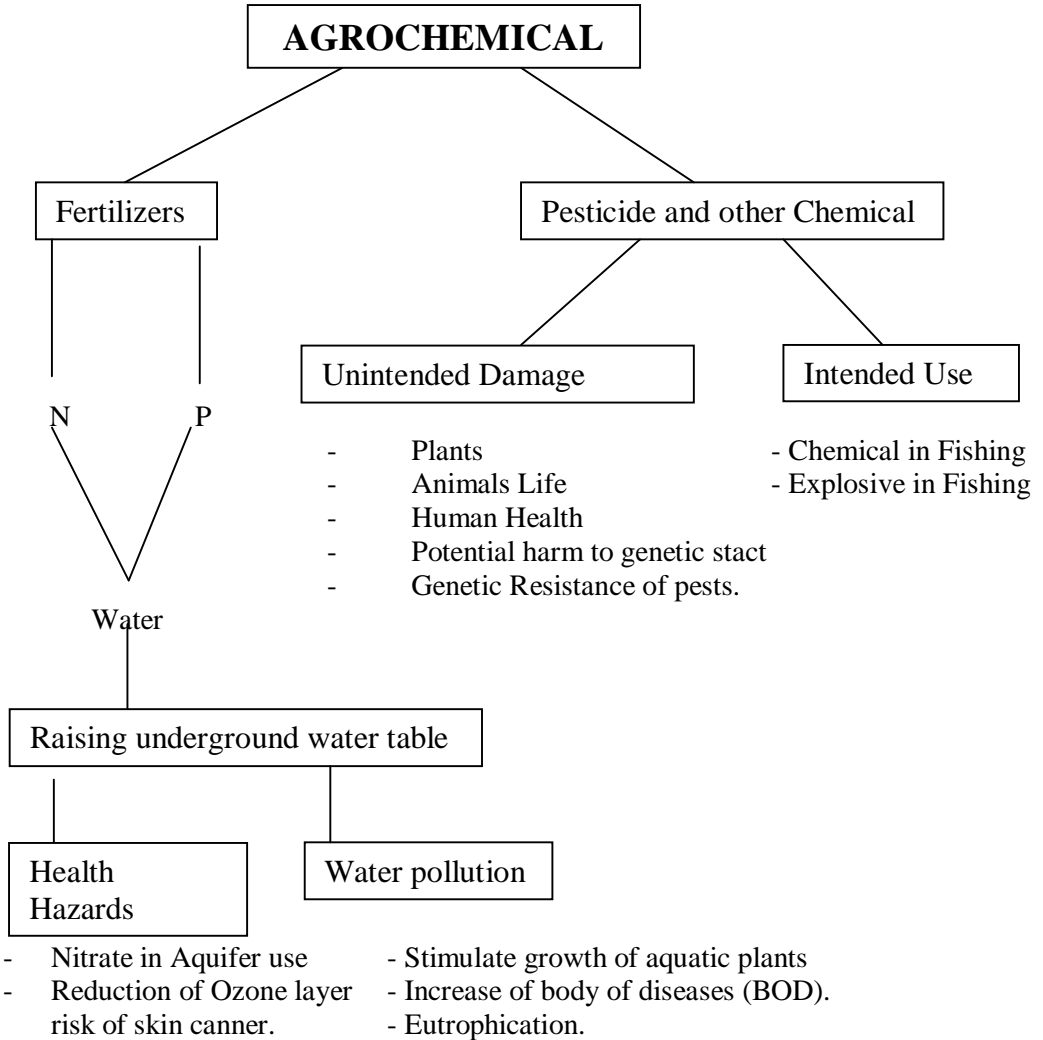
While the use of irrigation as a means of counteracting the effects of drought in food production, produce the major effects on the environment. These include the spread of water-borne disease, damages to the ecological system and increased soil salinity.



**Diagram: Illustrating Environmental Effect of Irrigation**

The use of Agrochemical in Nigeria, despite the positive contribution of agrochemicals to good production, there are certain negative effects of these compounds on environment. The main concern is that some of these materials applied to the soil, plants and farm produce will find their way into water bodies where they have undesirable effects.

**The Diagram is a Summary of the Environmental Effect of Agrochemicals.**



**Diagram: Illustrating Environmental Effect of Fertilizers, Pesticides and Other Chemicals.**

The problems that result from intentional but harmful use of chemicals in food production are numerous. Like certain substances, or practices, are liable to create hazards to human health, to harm living resources and marine and fresh-water life, to damage amenities or to interfere with the legitimate uses of fresh water and marine resources.



Water can be used more than once if it is sufficiently purified in between uses by natural or artificial means. But man render much of his water unfit for reuse through various kinds of pollution as raw and inadequate treated sewage, oil, synthetic pesticides, inorganic chemicals and mineral substances, plant nutrients, radioactivity and hoof. In this vein man faces several crises with respect to water.

According to Monsma, (1986:122), one effect of the alteration in the quantity and composition of outputs and input has been the creation of new pressure points for nature and human beings, commonly thought of in economics as new scarcities. This is true not only for metals and minerals, but also for such resources as clean air and water, which are now threatened by chemical loading due to herbicide and pesticide use, sulphur-dioxide emissions and toxic-waste disposal.

Monsma, (1986:123) further asserted that greater use of illicit drugs, increased marital and family tensions, and higher rates of such illnesses as heart disease, hypertension and cancer. It is clear that people dealing with these problems often have trouble working effectively, this in the long run affects the very style of economic production and consumption comes back to haunt future economic activity.

Environmental education on irrigation has brought about changes in both the composition of economic outputs and the composition and allocation of inputs. Like in regard to the outputs or yields, the changes in consumer products has caused an overall shift away from products with a higher degree of refinement and a greater percentage of "value added" by irrigation in Africa. These expensive products tend to be more complex both in their internal structure and in terms of their intertwinement with other products. Even the time available for consumption and production has been affected. It is clear that the environmental education on irrigation has affected the economic mode of production of family lives, social interaction, and social and cultural values.

In this vein, the knowledge component of environmental education on irrigation has become more detailed and explicitly quantitative. As the knowledge on its efficiency is being embodied and objectified in computer programs and systems engineering approaches as procedural systems. In the same vein these systems are then used as schemes for production, management, and use of irrigation objects.

Thus, if the worldview of the past saw nature as a machine - as mechanical in structure and function, then the shift today, according to Marx Wartofsky shows, is to "an information and control system, with memory, feedback, decision procedures, orientation, even teleology. The calculating device becomes a control device". Thus, the control of

environmental education on irrigation in Africa has passed from the hands and minds of craftsmen, artisans to quantitative, often computerized systems and those who cradle them.

In effect, moving from an agrarian system to one of heavy industry implies major changes in the inputs of natural resources, capital, and labour. It introduces competing uses for the same inputs. Like land was once economically important primarily on the bases of agricultural uses. But as towns grow up around agricultural centres, more and more land was put to alternative uses.

Today, some of the best agricultural land in the world is occupied by homes, factories, and shopping centres.

### **Conclusion**

The trust or belief that is put in material things must be replaced with a trust in God and an obedience to his normative will in working out as servant - stewardship. Faithful economic living in this millennium demands following the normative principles of cultural appropriate delightful harmony, stewardship, justice, caring, and many others. Thus, such an economic life would be far less frantic, would stress creation less in terms of depletion of resources and degradation of the environment and would place far more value on the participation of mankind, even those who are presently economically disenfranchised.

In Lynn's (1967) view, since the roots of today's trouble are so largely religious, the remedy must be essentially religious, whether we call it that or not. There must be a rethink and re-feel today's nature and destiny. White is indeed right by asking man to retrace his steps. If humanity as a society is to redirect technology in keeping with God's normative will, humanity must redirect her view of the world - of humanity, the creation, the nature of reality, and our relationship to the creator of all by respecting her nature.

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