



**A STUDY ON
ENVIRONMENTAL ISSUES WITH
REFERENCE TO
THE QUR'AN AND THE SUNNA**

By

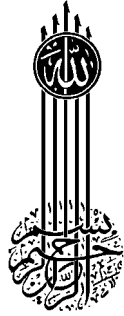
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FOREWORD

As part of its endeavor to spread the Islamic culture far and wide, develop the contents of this culture, raise a sound awareness about its purport and objectives, promote the Islamic thought and strengthen its role in the shaping of modern life, the Islamic Educational, Scientific and Cultural Organization (ISESCO) included in its Three-Year Action Plan for 1998-2000 a **Project on fostering awareness about the Islamic heritage and addressing issues of modern times**. Focusing on the Islamic heritage, the project aims to broach this lore from a contemporary perspective so as to shed ample light on its riches and expound issues and concepts not within reach for the present-day researcher and reader. Modern cultural and social issues are thus examined, and their cultural, economic and political implications investigated against the Islamic principles and fundamentals in such a way as to bring answers to the questions and problems raised by these issues.

One of the components of this Project consists in the preparation of a series of fifteen studies featuring the Islamic outlook on subjects and problems of interest to the contemporary society. Translated and published in Arabic, English and French booklets, the studies will be subsequently released through ISESCO's Islamic database aimed to publicize the religion, culture and civilization of Islam through Internet.

The Islamic Educational, Scientific and Cultural Organization is pleased, therefore, to present "*A Study on Environmental Issues with Reference to the Qur'an and the Sunna*" to the reader. The book expounds the Quranic Verses and Prophetic Hadiths that enjoin for environment conservation and urge for protecting nature from all factors of pollution and devastation.

Our thanks are due to the author, Dr. Mohamed Assayed Jamil, for his excellent presentation of the Islamic viewpoint on the issues and problems besetting contemporary society in the environmental field. His presentation is marked by exhaustive analysis, based on an objective, scientific methodology.

Our thanks also go to Dr. Lacen Haddad, author of the English translation.

It is hoped that this publication will rise to the expectations pinned by readers on their Islamic Educational, Scientific and Cultural Organization.

We beseech Almighty Allah to crown our efforts with success, guide us to the right path and enhance the benefits of this book.

Dr. Abdulaziz Othman Altwaijri

Director General of
the Islamic Educational, Scientific
and Cultural Organization
-ISESCO-

Introduction

Concern for environmental issues has increased today as skills have developed more quickly than wisdom and rationalism and as environmental problems have become a reality endangering human life both in the present and in the future. The situation could become worse unless human beings change their behavior to the better.

It goes without saying that if human beings had abided by the teachings of Islam, complied with its injunctions, and heeded its warnings, they would have avoided all the causes at the root of environmental problems. Allah, Sublime be His Name, the Creator of the human soul, knows what is good and what is bad for that very soul. Almighty Allah said in His Holy Book : « *Should He not know—He that created. And He is One that understands the finest mysteries (and) is well-acquainted (with them)* » (Mulk 14).

Islam has tackled all environmental issues in a comprehensive manner, without going into the finest details. Allah, Most High, said : « *Nothing have we omitted from the Book* » (An'am 38).

In another surah, He said : « *Then We put thee on the (right) way of religion : so follow thou that (way)* » (Jathiya 18).

Furthermore, in the Hadith, the Prophet has dealt with all of the topics that came up in the Qur'an. Allah said: «*Nor does he speak of (his own) Desire. It is only a Revelation revealed.* » (Najm 3-4).

Since the goal of ISESCO is to disseminate Islamic thought, through deep Islamic studies projects presented in a simple, easy and accessible style, I was honored to be charged by the Organization with the preparation of this study on «Environmental Issues with Reference to the Quran and the Prophetic Tradition».

This study is divided into three parts :

- The first part deals from an Islamic viewpoint with the concept of environment as both a civilizational and natural reality.
- The second part highlights the signs of the divine miraculous and inimitable creation of nature.
- The third part addresses environmental issues and their causes as a result of the interaction of elements from the natural and cultural systems. It also sheds light on the opinion of the Qur'an and the Prophet on these problems. For had human beings abided by their faith and its regulations, they would have spared themselves all of these environmental problems.

Allah I beseech to compensate those in charge of the ISESCO and reward them in this world and in the Hereafter. May Allah assist them in all that serves the cause of Islam and Muslims and in their task of disseminating Islamic culture.

Allah, Sublime be He, I implore to accept this academic humble work and put it on my balance of merits on the Day of Judgement.

Dr. Mohamed Assayed Jamil

PART ONE

THE CONCEPT OF ENVIRONMENT FROM AN ISLAMIC STANDPOINT

A. The Concept of Environment

Environment is defined as the sphere or context where human beings live. This includes all the natural and human phenomena⁽¹⁾ that affect humans and are affected by them and from which they get their means of subsistence such as food, clothing, medicine and shelter and wherein they exercise their relations with their human and non-human fellow creatures.⁽²⁾ In a prominent environmentalist's view⁽³⁾ : «The environment is a set of conditions, substances and interactions taking place in any sphere where life exists.

- Conditions include such climate elements as temperature, humidity, and light as well as cosmic states such as gravity.
- Substances comprise the earth and what is related to it like rock constituents, running water in rivers which fills the seas, and such life products as paper, fruits, wood, fur, meat and the like.
- As for interactions, they are of two kinds:
 - a) such physical interactions as chemical transformations;
 - b) vital interactions related to the growth of living organisms.

The scope of interactions can be local including the interaction between individuals and their surroundings. It can also be of wide scope as is the case with water circulation and the

movements of wind. Similarly, the sphere may be limited or may expand to include all the vital surroundings i.e. the sphere where life exists, that of the atmosphere, the hydrosphere and the lithosphere. This means that the environment is three-dimensional involving the ecological dimension, the socio-economic dimension, and the socio-cultural dimension (the system of values). This means that man lives in three environments⁽⁴⁾ interacting and affecting each other. They are:

The Vital Environment:

This is the natural and original life environment which Allah created and wherein human beings are only one form among many others.

The Man-made Environment

It consists of things made by humans and introduced onto the environment.

The Social Environment

It is a system whereby human communities run their own social and economic affairs, consisting of social customs, administrative affairs, laws, and social as well as economic institutions.

The environment is looked at as a functional system which operates in a comprehensive manner via mutual relations between its organic and non-organic components. The environmental system has its inputs—carrying and storing—and its outputs such as energy and basic products, all of which operate in natural conditions. When the environmental system is upset by human beings, it tends to reorganize itself at first. Through the act of recurrence, plants tend to constitute a stable plant community according to the principle of flowing energy. Stability in ecological systems implies a dynamic balance between the input and the output of energy and matter.

In the light of the foregoing definition of environment, it can be said that it is made up of two basic systems⁽⁵⁾ : the natural environment and the civilizational environment.

The Natural Environment:

By natural environment is meant the earth, water, air, and living organisms, be they animals or plants. The definition also includes the different natural operations resulting from the interaction of the elements making up the natural system of human beings.

The Civilizational Environment

It refers to the rural and urban systems created by human beings in the natural environment; it includes buildings, streets, factories, agriculture, technology, social, economic, and developmental institutions and all other activities, all of which aim to meet the needs and desires of human beings in their daily lives. It also includes the means by which human beings deal with problems ensuing from their relations with the natural environment as well as the extent to which they respond and adapt themselves to these problems.

It is very difficult, indeed impossible, to separate natural systems from civilizational ones. Since their appearance on earth and through the various stages of their civilizational developments, human beings have affected most if not all the natural environments through their interaction with them. They have even managed to alter some of them. Nevertheless, as organic creatures, human beings depend on different environmental resources to meet their day-to-day needs in light, health, food, shelter, water, and air.

B. Components of the Natural Environment System

The planet can be regarded as a complex system composed of four sub-systems: the earth system, the air system, the water system, and the vital system. Each of these basic subsystems is further divided into other subsystems interacting with each other in net-like relations as the following chart shows:

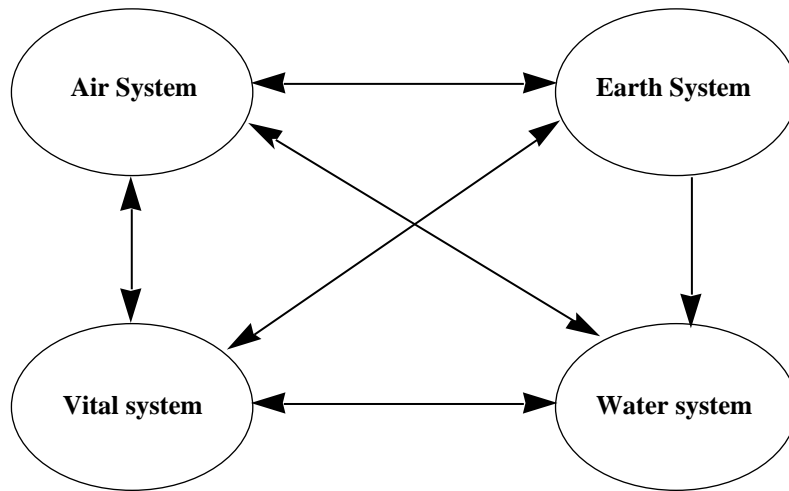


Figure 1 shows the components of the natural environment.

1. The Earth System:

The earth system is the upper crust of earth's surface⁽⁶⁾ on which human beings live and interact with its elements. The depth of the crust that is important for human beings does not exceed a few or a hundred meters. It is at this level that we find all the minerals. The exception concerns artesian wells, which can reach 8 kilometers in depth, oil fields, and mines.

When Allah prepared the earth for human beings to live on, He made it suitable and adequate for life. He created trees and plants, and made rivers run for their sake. He put at their disposal daylight and night, the sun and the moon; He also bestowed them with the boon of rationality and put nature at the service of human beings. Allah said:

«Have We not made the earth as bed, and the mountains as pegs? and we have created you in pairs, and we have made your sleep as a thing for rest, and we have made the night as a covering, and we have made the day for livelihood, and we have made (therein) a shining lamp (sun), and we have sent down from the rainy clouds abundant water, that we may produce therewith corn and vegetations, and garden of thick growth» (Naba' 1-16).

The Creator of the earth is Allah who said in His Holy Book: *«I called them not to witness the creation of the heavens and the earth, nor (even) their own creation: Nor is it for Me to take as helpers such as lead (men) astray!»* (Kahf, 51).

Allah created humans from earth, from clay, from mud molded into shape, from sounding clay like pottery; then He breathed into him the soul. The origin of human beings as well as their life elements come from earth, from clay. This is the fecund crust which provides all the necessary elements of life. Scientists have analyzed the human body and have found that it is made up of 16 elements⁽⁷⁾. The first element is oxygen and the last is manganese. The crust of earth is made up of the same elements, for the elements constituting the enriched clay are the same as those existing in the human body.

Allah ordered human beings not to do mischief on earth. He said in his Holy Book:

-«Do no mischief on earth, after it hath been set in order» (A'râf, 56).

«Then is it to be expected of you, if you reject Islam, that ye will do mischief in the Land» (Muhammad 22)

«But they ever strive to do mischief on earth. And God loveth not those who do mischief» (Ma'ida 64).

Doing mischief on earth consists of: destroying the soil and establishing settlements on it, contributing to the erosion of the soil to its salinization, and to desertification, and not flattening the soil after the extraction of mines from it, etc. Skills and competence have grown among human beings more quickly than wisdom and rationality have.⁽⁸⁾

2. The Hydrological System:

This system comprises water in its three states: gas, liquid, and solid, and as it exists in the air, on the surface of the earth, or underground⁽⁹⁾.

Water is mentioned in the Qur'an in 63 places⁽¹⁰⁾, which are classified under the following categories:

Water was the first thing to have ever existed

Allah said in His Book: *«And His throne was over water—that He might try you, which of you is best in conduct» (Hud 7).*

The Prophet PBUH said: *«Allah was and there was nothing prior to Him; His Throne was over water; then He created earth and the heavens, and has everything written in His Book» (reported by At-tirmidh).*

All Organisms Depend on Water:

Allah said: *«We made from water every living thing» (Anbiyya' 30)*

Research has shown that 70 % of the constituents of the human body are from water. When this percentage diminishes, the human body is exposed to diseases. If it loses 20 %, the person in question will die⁽¹¹⁾. The origin of human beings is from water. Allah said in his Holy Book: *«It is He who has created man from water. Then has He established relationships of lineage and marriage: For thy Lord Has power (over all things)»* (Furqan 54).

Water is the Source of all Vegetation:

Allah said: *«It is He who sendeth down rain from the skies: with it we produce vegetation of all kinds»* (An'am 99).

«We send down rain from the sky, and produce on the earth every kind of noble creature, in pairs» (Luqman 10).

Water is the Cause of the Diversification of Vegetation on Earth

Allah said: *«It is he who sends down rain from the sky; from it ye drink, and out of it (grows) the vegetation on which you feed your cattle. With it He produces for you corn, olives, date palms, grapes and every kind of fruit: verily in this is a sign of those who give thought»* (Nahl 11).

«Seest thou not that God sends down rain from the sky? With it we then bring out produce of various colors» (Fatir 27)

Water is a Source of Sustenance

God said: *«He sends down rain, and brought forth therewith fruits for your sustenance»* (Baqara 22)

Water is a Source of Drinking

It is a stern advice to mankind. Allah said:

«See ye the water which ye drink? Do ye bring it down (in rain) from the cloud or do we? Were it our will, we could make it salt (and unpalatable): Then why do ye not give thanks?» (Waqi'a 68-70).

Water Helps us Remember Allah

Allah said:

«and when harm touches upon the sea, those you call upon vanish from you except Him» (Israa' 27)

«and the dwellers of the Fire call to the dwellers of the paradise : pour on us some water» (A'araf 50).

«Any others that they call upon besides hear them no more than if they were to stretch forth their hands for water to reach their mouths. But it reaches them not» (Ra'ad 14).

Water: Promises and Threats

Allah said:

«Say (O Muhammad) : Tell me ? if (all) your water were to sink away, who then can supply you with flowing water» (Mulk 30).

«And We send down water from the sky according to (due) measure, and We cause it to soak in the soil; and We are certainly able to drain it off (with ease)» (Al Mu'minun 18)

Water is a Source of Fear and Hope

Allah said:

«It is He who doth show you the lightning, by way both of fear and of hope: it is He who doth raise up the clouds, heavy with (fertilizing) rain!''»(Ra'd 12)

«And among His signs, he shows you the lightning. By way both of fear and of hope, and He sends down rain from the sky and with it gives life to the earth after it is dead» (Rum 24).

Human Beings are in Need of Preserving Water in Wells or Springs throughout the Year.

Allah said:

«And We send down water from the sky according to (due) measure, and We cause it to soak in the soil; and We are certainly able to drain it off (with ease)» (Al Mu'minun 18).

«And we produce therein orchards with date-palms and vines, and we cause springs to gush forth therein» (Ya-sin 34).

«We poured out rain from the skies in abundance, and gave (fertile) streams flowing beneath their feet» (An'am 6)

Water is a Cause of Destruction

Allah said:

«So we opened the gates of the heaven with water pouring forth, and we caused to gush forth from the earth. So the waters met for a matter predestined (Qamar 11-12)

«And leave the sea as a furrow (divided); for they are a host (destined) to be drowned» (Dukhan 24)

Water is a Source of Punishment on the Day of Judgement

Allah said:

«In front of such a one is hell and he is given, for drink, boiling fetid water» (Ibrahim 16)

«And be given, to drink, boiling water, so that it cuts up their bowels (to pieces)?» (Muhammad 15).

Water is a Source of Demographic Growth

Allah said: *«Now let man but think from what he is created! He is created from a drop emitted—proceeding from between the backbone and the ribs» (Tariq 5-6).*

Water is a Means of Transportation

Allah said: *«It is God Who has subjected the sea to you, that ships may sail through it by His command that ye may seek of His Bounty, and that ye may be grateful»* (Jathiya 12).

Water is a Source of Food

Water is a permanent source of water food and animal proteins. Allah said in His Book:

«Lawful to you is the pursuit of water-game and its use for food—for the benefit of yourselves» (Ma'ida 96).

«Nor are the two bodies of flowing water alike,- the one palatable, sweet, and pleasant to drink. And the other, salt and bitter. Yet from each (kind of water) do ye eat flesh fresh and tender, and ye extract ornaments to wear» (Fatir 12).

Water heralds Glad Tidings, Mercy, Cleanliness and is a Source of Life for Mankind

Allah said:

«And He who sends the winds as heralds of glad tidings, going before His mercy, and We send down pure water from the sky» (Furqan 48).

«He caused rain to descend on you from heaven to clean you therewith» (Anfal 11)

In the Qaf Surat Allah said : *«And We send down from the sky rain charged with blessings, And We produced therewith gardens and grain for harvest»* (Qaf : 9)

Water Washes away Sins

Abu Hurayra said that the Prophet (PBUH) said : *«If a believer performs his ablutions and washes his face, any sin that he*

has watched with his eyes is washed away with water (or with the last drop of water), and if he washes his hands, any sins that his hands have committed will go away with water or with the last drop of water, and if he washes his feet, any sin committed by his feet is washed away with water or with the last drop of water, until he comes out purified of his sins» (narrated by Muslim, Kitab At-tahara)⁽¹²⁾

Do human beings not learn from all these uses of water? Do they not envision the repercussions of polluting water sources and the resulting diseases both now and in the future? Allah said in His Holy Book: *«Truly it is not their eyes that are blind, but their hearts which are in their breasts»* (Hajj: 46). Allah also said: *«They have hearts wherewith they understand not, eyes wherewith they see not»* (Ar'af : 179).

3. The Atmospheric System

The earth is surrounded by the atmosphere or what is known as air. The air is basically composed of oxygen and nitrogen. It extends hundreds of kilometers above the ground. The higher we get, the lesser is the density of the air.

The atmosphere is made of three major interconnected parts :⁽¹³⁾

a- Troposphere or the lower part of the air. It extends from the earth's surface to about 12 kilometers high into the atmosphere. Most of the atmospheric changes we feel on a daily basis take place in this part. The higher we get in this part, the lower temperature degrees decrease get. Most water vapor, oxygen, carbon dioxide are contained in this part. Besides, numerous human activities are concentrated in this layer.

b- Stratosphere: the layer which exists above the troposphere.

It is the outer part of the air which surrounds the earth. It stretches from about 12 to about 80 kilometers above the earth. This part is characterized by the absence of any climatic changes or storms. It contains a belt known as the ozone layer whose function is the protection of the earth's surface from the hazards of the ultra-violet rays.

c- Ionosphere : This part is about 80 to 360 kilometers or more above the stratosphere. It is marked by the lightness of its gases. Hydrogen and helium prevail in this part. Allah is right when He said : *«So He completed them As seven firmaments in two Days, and He assigned to each heaven its duty and command»* (Fussilat : 12).

He also said :

«God is He Who created seven firmaments and of the earth a similar number» (Talaq : 12)

«He Who created the seven heavens one above the other» (Mulk : 3)

«The seven heavens and the earth, and all beings therein declare His glory» (Bani Israel : 44)

«For He gave order and perfection to the seven firmaments» (Baqara : 29)

«Your Guardian-Lord is God Who created the heavens and the earth in six Days» (Ar'af : 54).

In its lower part, the air is made of many gases, water vapor and small particles (dust and frizzle). The dry unpolluted air is composed of 78% of nitrogen, 21% of oxygen and about 9% of argon. The rest is made of meager gases such as carbon dioxide, neon, helium, hydrogen, methane and others. The air also contains

various amounts of water vapor ensuing from vaporization from water surfaces, soil, and plants. A big quantity of dust exists in the air, and can be seen by the naked eye. The existence of dust differs from one place to another. Great amounts of dust are found in places bordering deserts especially at particular times of the year. Dust is also found in bigger amounts in lower areas.

The structure of the air that surrounds the earth has remained intact, despite the vital activities that take place on the earth's surface. Human beings, like animals, consume oxygen in their vital activities and exhale carbon dioxide. But plants use the carbon dioxide in the operation of photosynthesis. Unlike human beings, plants take carbon and emit oxygen. If the percentage of carbon dioxide increases in the air⁽¹⁴⁾, the surplus melts in seas and oceans and interacts with the calcium salts which have melted in them. Then it sediments as calcium carbonate (which form calcareous stones). These natural interactions, known as geochemical cycles, have led to a state of balance in which the air has maintained its composition stable throughout the ages.

Hence Allah invites us to think about and contemplate the miracle involved in the creation of the heavens and to use reason in appreciating this miraculous deed. Allah, glorified be He, said :

«What! Are ye the more difficult to create or the heaven (above) ? God hath constructed it : on high hath He raised its canopy, and He hath given it order and perfection.» (Nazi'at : 28)

«Not for (idle) sport did We create the heavens and the earth and all that is between» (Anbiya : 16)

«And We have made the heavens as a canopy well guarded : yet do they turn away from the signs which these things point to» (Anbiya : 32)

«Not without purpose did We create heaven and the earth and all between !» (Sad : 27).

However, since the time human beings have known fire and have used different energy sources, and with the advent of the scientific revolution, huge quantities of gases and other substances have started to be emitted in the air. Consequently, an increasing disorder has occurred in the natural balance that Allah had created in the atmosphere. In this respect, Allah said :

«Our Lord! Not for naught Hast thou created (all) this! Glory to Thee! Give us salvation from the penalty of the fire.» (Al Imran : 191)

4. The Vital System :

It includes the flora and fauna on the earth and in water⁽¹⁵⁾. The climate and water elements, the diversity of soil and of the natural appearance of the earth contribute⁽¹⁶⁾ to the formation of a host of environmental plant systems. Likewise, the interaction between water, soil and natural vegetation plays an important role in the distribution of natural animal life.

Human life and that of other organisms depends on vegetation resources. The food that we eat is made of vegetable products such as wheat, corn, potatoes, rice, etc...

Allah said : *«And We send down from the sky rain charged with blessing, And We produce therewith Gardens and Grain for harvests»* (Kahf : 9)

«With it He produces for you corn, olives, date-palms, grapes» (Nahl : 11)

«Do they not look at the earth, - how many noble things of all kinds We have produced therewith» (Shu'araa : 7)

Human beings also live on animals which, in turn, feed on plants. Warming and providing light to our homes and the energy necessary for our factories has always depended on coal produced

from forests. It also depends on petrol, a substance having its origins in plant and animal geological sediments. Similarly, the wood from which the furniture of our homes is manufactured, and the silk, cotton, garment from which our clothes are made, as well as numerous other drugs, would not have been available had not plants existed.

The various kinds of forests existing in the world contain the most important vegetation resources. Forests are the sources of many products. Besides wood and fuel, human beings get acids, fodder, glue, alcohol, anti-freezing liquids, paints, disinfectants, oils, paper, drugs, dissolvents etc... from them. It is estimated that about 4500⁽¹⁷⁾ manufactured substances are partly or totally obtained from forests.

It is true that forests are the lungs of our planet. They preserve the necessary gas rates in the atmosphere. They also play a major part in rainfall.⁽¹⁸⁾ It has been noticed that the amount of rainfall has decreased during the last 26 years to an average of 24 % of what it was before the logging of forests in the Republic of Columbia.

Animal Wealth

Animals are a direct source of food for human beings. Moreover, they depend on some animals help also in agriculture or as means of transportation. Allah said :

«And cattle He has created for you (men) : From them ye derive warmth and numerous benefits. And of their (meat) ye eat.»
(Nahl : 5)

«And (He has created) horses, mules, and donkeys, for you to ride and use for show, And He has created (other) things of which ye have no knowledge» (Nahl : 8)

Human beings benefit either directly or indirectly from land animals and their products. Among the land animals found in the Islamic World, we could cite the Arab deer, the Ufri deer, the Kufi deer, which exists in abundance in the mountainous areas of the Maghreb, the Wadihi, which lives in the South-Eastern region of the Arab Peninsula, the Arab Tohr, which lives on the borders between Tunisia and Algeria, the red wolf and the striped hyena, the desert lynx, the tiger and many beautiful birds with bright colors, ostriches and predatory birds. A number of animals and birds have faced extinction either directly as a result of indiscriminate hunting or indirectly as a result of the destruction of the environment suitable for their living and reproduction, or still as a result of the clearing of woodland for agriculture and grazing. This has greatly affected the biodiversity system and has jeopardized the environmental balance which Allah had created.

Water Resources

Water plays a major role in satisfying many human needs in meat. Moreover, quite a few materials are extracted from the sea environment such as salt, and such minerals as manganese chloride, potassium sulfate, calcium sulfate, pearls and coral. Allah said : *«It is He Who has made the sea subject, that ye may eat there of flesh that is fresh and tender, And that ye may extract therefrom ornaments to wear.»* (Nahl : 14)

The sea is also a source of drinking water obtained through desalination plants, as well as a tourist recreational resort. Fish constitutes 44% of the economy of 25% of the world population that is living on coasts ⁽¹⁹⁾. Oceans also contain a big quantity of fossil energy such as oil and natural gas. Statistics carried out in 1992 found that 36.5 billion tons of oil⁽²⁰⁾ and about 21.4 trillion tons of gas were extracted from different seas of the world. To this we should add the electrical energy generated from waves and currents.

The abuse of water resources in all its various kinds has resulted in the shortage of different kinds of fish products. Human waste has also led to the pollution of seas and oceans. Allah, Most High, said :«*Mischief has appeared on the land and sea because of (the meed) that the hands of men have earned.*» (Rum : 41). Thus, the protection of the sea environment, as an important natural resource for human beings, from pollution and depletion has become an Islamic responsibility. The aim is that this sea environment keeps fulfilling the function for which it was created by Allah. The basic elements of the natural environment and their sub-categories interact with each other in such a way that each element affects the other elements of the same system, thereby affecting the whole system. For instance, temperature, one element of the air system, affects the water system i.e. oceans, rivers and seas. The result is that water vapor rises to the high layers of air and is borne by winds in the form of clouds from the areas of high pressure to areas of low pressure and falls in the form of rain. The kinds of plants existing on earth are determined by the degree of temperature found in each area. In areas where temperature degrees are high and heavy rains fall like the equator, tropical forests grow constituting thereby an autonomous ecosystem. Tropical forests and the terrestrial animals living in them are considered as part of the vital system. Thus, the elements of the natural system are interconnected and interacted. This interaction is activated and made use of by mankind by dint of technological potentialities and other elements existing in the civilizational environment.

Now we shall look at the elements of the cultural environment and how they interact with those of the natural environment.

C. Elements of the Cultural Environment :

The cultural environment comprises five major elements :

1. The technological system
2. The social system
3. The political system
4. The economic system
5. The cultural system

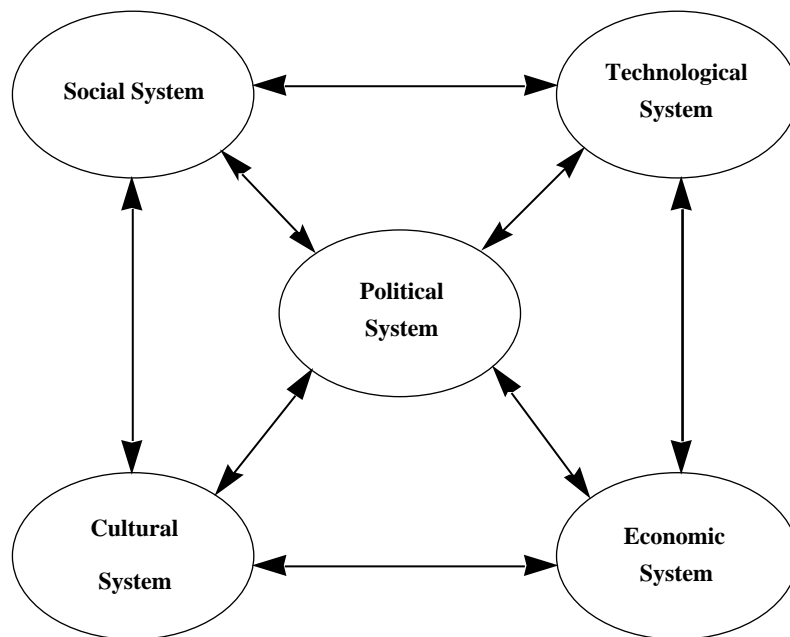


Figure (2) shows the components of the cultural system

1.The Technological System :

Technology, nowadays, means the use of scientific applications to exploit environment resources on the one hand and to solve environmental problems and address environmental dangers on the other (what is called environmental redress). In other words, science and technology nowadays, i.e. all the progress made by science is manifested in new technological inventions. Hence, these inventions help science progress. It is noticed that the span⁽²¹⁾ separating new scientific discoveries and their implementation is getting shorter and shorter. Photography, for instance, was used industrially 112 years after its scientific discovery, the production of the telephone took 56 years, that of radio 35 years, radar 15 years and the transistor 5 years.

The speed characterizing these inventions nowadays and which is increasing day after day should draw our attention to the necessity of taking care of human beings, the inventors of technology. It should also draw our attention to the necessity of giving importance to thought, science and invention, to devising unconventional solutions to environmental problems and to facing social, economic and environmental change ensuing from implementing developmental projects.

The Role of Technology in Environmental Interactions

Technology has developed and entered into the social fabric and everyday life of human beings so much that it has become impossible to put the clock back or do away with technology. To right the wrongs of the environmental disorder resulting from the implementation of technology in industry and agriculture, we invent new technologies or develop available technologies, as if modern societies have become addicted⁽²²⁾ to technology. The only panacea is more and more technology.

- Some technological devices seem at first to be of great benefit and damage-free. Yet, with the development of scientific and technological knowledge, it has become obvious that they have serious damages unknown to us. Think only of the invention of the chlorofluorocarbons and the discovery later on that it damages the Ozone layer.
- The idea that technology provides solutions to every social, environmental or industrial problem is gaining more ground in modern times. However, experience has shown that these problems are related to the interactions between human beings, nature and technology. It has also shown that technology can offer only temporary solutions. Indeed, permanent and decisive solutions lie in correcting the interactions between the three systems. Social solutions related to human behavior and popular acceptance are more durable solutions.

Islam urges Muslims to seek science and make it a practicable reality in their life. Allah said :

«Know, therefore, that there is no god but God, and ask forgiveness for thy fault and for the men and women who believe».
(Muhammed : 19).

Islam accords priority to science and the essence of science is fearing Allah and believing in Him as the only Deity. Allah said : *« Those who truly fear God, among His servants, who have knowledge.»* (Fatir : 28)

Islam called for developing a scientific mindset based on the following foundations⁽²³⁾:

- To refuse any claim not substantiated by proof. Allah said : *«Bring forth your argument, if ye are telling the truth!»*

- (Naml : 64) Argument here is proof. But argument can also be something witnessed or experienced : *«Bring me a Book (Revealed) before this, or any remnant of knowledge (ye may have), if ye are telling the truth»* (Ahqaf : 4)
- To refuse conjecture in situations requiring certainty and science. Allah said : *«But they have no knowledge therein. They follow nothing but conjecture, and conjecture avails nothing against truth.»* (Najm : 27)
 - To reject feelings, gifts and personal considerations. Islam requires neutrality and objectivity. Allah told the Prophet : *«But if they hearken not to thee, know that they only follow their own lusts : And who is more astray than one who follows his own lusts, devoid of guidance from God ?»* (Qasas : 50)
 - To resist stagnation, imitation and subservience to others be they parents and ancestors or lords and nobles or laymen. Allah said : *«They say : «Nay! We shall follow the ways of our fathers : what even though their fathers were void of wisdom and guidance ?»* (Baqara : 170)
 - Contemplate, think, and consider: *«the government of the heavens and the earth and all that the God hath created»* (Araaf : 185); and man himself: *«As also in your own selves : will ye not see?»* (El Zariyat : 21); and the movement of human history and the fate and lives of nations: *«And were the ways of life that have passed away before you : travel through the earth and see what was the end of those who rejected truth»* (Ali Imran : 137)
 - The Prophet (PBUH) urged to acquire useful knowledge and to travel for the sake of learning. Anass, May God be pleased with him, reported that the Prophet said : *« Whoever went out seeking*

knowledge, is out for Allah's sake until he comes back» (Narrated by Tarirmidhi and was considered a good Hadith). Abi Dardaa, May God be pleased with him, said: « I heard the Prophet (PBUH) say : 'Who treads a way seeking with it knowledge, Allah makes his way to paradise easy, for the angels put down their wings as a sign of that they are pleased with his deed; all the creatures in the skies and the earth and even whales in oceans ask forgiveness for the scholar; the scholar's grace in comparison to that of the ignorant is akin to that of the moon in comparison with the stars; scholars are inheritors of prophets and prophets did not inherit a Dinar nor a Dirham but they inherited science; thus whoever gets it gets a plentiful share of it.» (Narrated by Abu Dawud and Tarmidhi.)⁽²⁴⁾

It goes without saying that when we transfer technology, we should harness it to avail our local situation, and lessen its damages to the environment as far as possible, and taking into consideration our demographic, economic and social conditions.

2. The Social System

By the social environment⁽²⁵⁾ is meant the part comprising individuals and communities as well as the kinds of social relationships established between individuals and communities making up a society and constituting what is known as the social system. Social relationships can be very strong as is the case with small local communities like villages. But these relationships may also be secondary or merely economic governed by personal interests. The difference between simple relationships (as in local communities) and complex ones (as in urban conglomerations) is due to the difference in the origins of both communities. The local community is homogenous whereas the urban one is not either with respect to origins, culture, norms, traditions or values.

- Simple relationships in local communities may be a barrier to exploiting environment resources or to development, just as social obligations may be a stumbling block to renovations and change imposed by the process of development in these societies.

- The conflict⁽²⁶⁾ between aborigines and newcomers may be a hindrance to the development and exploitation of environment resources.

- The social position⁽²⁷⁾ of an individual imposes specific roles on him, and makes him shy other roles, the exercise of which might weaken his social position. Examples are bedouins' despise for agriculture and the Nubians' shying away from trade jobs.

- To implement environment projects at the local level, we must comprehend the kinds of social relations existing between individuals and communities as well as the social systems relating them to each other. Moreover, it is important to win over the local traditional leaderships, given that they have strict knowledge of their local community and of the environmental incidents that have occurred in it.

- Islam advocates a social system based on cohesion and symbiosis. The Prophet (PBUH) said «Muslims are like one body in their mutual friendship and mercy; should an organ complain all the others respond through vigil and fever.» (reported by Muslim N° 265) The Prophet also said : «A Muslim is to another Muslim like a firm edifice each one of them supports the other»⁽²⁸⁾. (reported by Muslim N° 446) Moreover, Islam has made the standard of righteousness as the basis for making differences between people. Allah said : «*The most honored of you in the eyes of Allah is he who is the most righteous amongst you.*» (Hujurat : 13). Islam also considered that every deed is beneficial as long as it rises production and is of benefit to the individual and to other human beings.

- We conclude from what has been said that the social implications of environmental issues must be taken into account when we are setting up development projects. We should also study the effects of development on the social environment of the population in a comprehensive manner; only in this way could we avoid many aspects of the devastation, the pollution and the bad exploitation of environment resources.

3. The Economic System

The economic system, in any society, determines the natural resources movements and the kinds of resources involved in these movements. It also determines such economic and social consequences as the rise of living standards, the environment depletion and alteration. The degree of environment change, like the increase in the dumping of wastes and of different pollutants, which contributes to environment devastation, is also determined by the economic system. In agricultural communities, the contribution of economic activities to environment deterioration is small in comparison with what takes place in developed communities. In fact, problems of earth, water and air pollution as well as other environmental crises are aggravated in developed societies. Figure 3 shows the movement of natural resources in the industrial economic system as well as the environment problems and hazards it causes. The degree and strength of environment hazards depend on the degree of development and progress as well as on the complexity of the economic system.

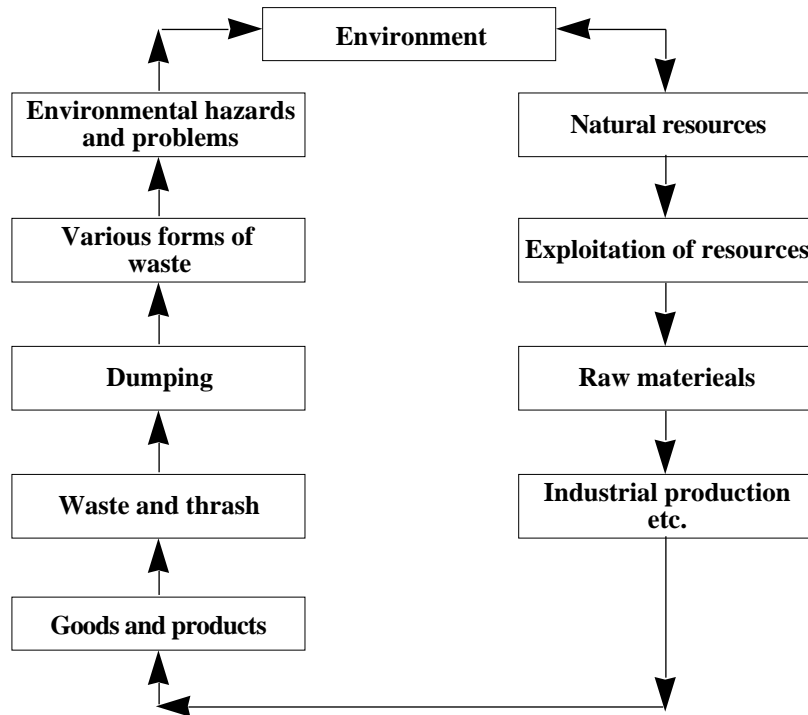


Figure (3) : Movement of natural resources in the economic system

Islam devised economic principles that are suitable to humans in their exploitation of natural resources. to human nature in the exploitation of economic resources. The Islamic economic system is based on the following considerations⁽²⁸⁾ :

1. Humans' ownership of things. This has always been the case because they are Allah's deputies on earth. Property can only be owned by virtue of a legal edict.
2. Forbidding the hoarding up of money. The state should ensure its circulations among all and not just a few people :

«that it become not a commodity between the rich among you» (Al Hashr 7).

3. Private ownership of things is regulated by the five legal rules : work ; the need for money for survival ; the provision of money to people by the state in order to meet their needs ; inheritance of laws ; interaction between individuals.
4. The right to spend individual property as regulated by the law especially with regard to monopoly and cheating.
5. Discoveries and inventions become public property when they are used by the community.
6. The state guarantees for everybody and ensures that they exercise their rights and fulfill their duties.
7. The state takes care of the unemployed and the poor ; it provides shelter for the old and the handicapped and provides health care for everyone. Islam has set up regulations for developing economic resources.

In the Field of Agriculture

Islam urges the cultivation of the soul. The prophet (PBUH) said : «He who brings back a land to life becomes its owner.» He also said : «He who settles in a land, nobody has a right to it except him.»⁽²⁹⁾

Islam makes sure the necessities of life are guaranteed before taking care of superfluous things. The necessities of life are summarized thus : «Nor to suffer from thirst, nor from the sun's heat» (Taha 118-119)

In the Field of Industry

Islam called for promoting it in a general manner (without getting into specifics). Allah the almighty said about Soloman : «It was We Who taught him the making of coats of mail» (Anbiyaa 80). Allah taught Zul-qarnain his dams work : «Bring me blocks of iron. At length, when he had filled up the space between the two steep mountain-sides, he said, ‘Bring me, that I may pour over it, molten lead » (Kahf 96).

In the Field of Trade

Islam set up rules to regulate selling, buying, and loans. It encouraged trade and the fair exchange of goods. It warned against cheating in selling. the prophet said : «Do not cheat in trade».⁽³⁰⁾ The Prophet also warned against monopolizing food : «Do not monopolize except whatever is wrong.»⁽³¹⁾ He also warned against swearing in selling : «Swearing spoils the merchandise and desecrates profit.»⁽³²⁾

In the Field of Tourism

Islam advocates tourism and travel to all the regions of the earth. Allah said : «*Travel through the earth and see what was the end of those before (you)*». (Rum :42). «*Say travel through the earth and see how God did originate creation*» (Ankabut : 20) «*If God had so willed. He could have made you a single people*» (Shura : 8) «*And made you into nations and tribes, that you may know each other.*» (Hujurat : 13)

In the Field of Cattle Breeding and Shepherding

Islam encourages cattle breeding and shepherding. The Prophet even boasts of having been a shepherd. Abu Hurayra reported that the Prophet (PBUH) had said : «Every prophet that

Allah sent down was a shepherd, then his companions asked ‘and you?’ and he retorted : ‘yes I used to graze it to the people of Mecca for a small amount of money (reported by El Bukari, Kitab Al Ijara’»⁽³³⁾.

Islam urges people to work and acquire wealth and means of subsistence. Allah said : *«For you, so traverse ye through its tracts and enjoy of the sustenance which He furnishes»* (Mulk : 15). In this verse, Allah gives priority to traversing through the tracts over the enjoyment of fruits to make us feel that work is a way of living in this life. The same meaning is conveyed in the following verse: *«And seek the bounty of God»* (Jumu’a : 10). The share of man in this world and in the hereafter depends on his work and efforts in life. Allah said : *«That man can have nothing But what he strives for; That (the fruit of) His striving will soon come in sight, Then will he be awarded with reward complete.»* (Najm : 41). He also said : *«And say: work (righteousness) soon will God observe your work, And His Apostle, and the believers»* (Tauba : 105)

But Islam lays a fundamental condition for exercising any work in any economic activity whatsoever: doing no mischief on earth.

Allah said : *«But seek, with the (wealth) which God has bestowed on thee, the Home of the Hereafter, nor forget thy portion in this world : but do thou good, as God has been good to thee, and seek not (occasions for) mischief in the land : for God loves not those who do mischief»* (Qasas : 77)

4.The Cultural System

Since their appearance on earth, human beings have managed to set up environments that are different from the natural environment in an attempt to exploit the latter, and to satisfy thereby their need for self-preservation. Cultural systems are part of manmade environments. Culture includes knowledge, arts,

morals, rules, customs and other skills that human beings acquire by virtue of their being members of society.

We can distinguish two types of culture: material culture, i.e. the output of technology which is considered an intermediary between human beings and the natural environment surrounding them. Technology has always been important for human existence and progress since the advent of mankind.

The second type of culture comprises all that is not material : traditions, norms and popular proverbs which reflect ideas and beliefs, or what is known as «popular demography»⁽³⁴⁾. A uniform culture prevails in society and comprises a host of general fundamental cultural features or elements known as cultural generalizations. These are: the unity of feelings, the unity of traditions, the norms and practices shared by individuals of the community such as rituals, religious beliefs, languages and the like features regarded as basically fundamental for the formation of society. These cultural generalizations are one of the important elements that ensure the cohesion of society. Moreover, each local community has its special sub-culture distinguishing it from the other communities. These are known as 'special cultural traits'.⁽³⁵⁾ «The latter should be taken into account when implementing development projects; otherwise, environmental resources will be wasted and development projects will not achieve their objectives.

The prevailing beliefs⁽³⁶⁾ play a major role in hindering development plans and in wasting environment resources. Examples abound. Individuals of 'Bija', a tribe in the east of Sudan, fought the mechanic tractors used by the government in tilling the earth in the area of Toko. They believe that tractors spoil the soil and lessen its fertility. The sanctification of cows by Hindus stands as an obstacle to any new type of culture advocating possible improvements in the exploitation of this animal wealth which could play an important role in Indian economy.

Similarly, the " Zandi" - a group of tribes living in central Africa, did not abandon one of their traditional produces (Talboun), in spite of the fact that the development plan in their society tended towards the generalization of " Pavra " growing as a substitute to it. This is because " Pavra " is easy to farm as a produce and to prepare as food. The resistance was due to the fact that they use "Talboun" in their rituals and magic practices. They also refuse to live in houses which are built in lines. They prefer instead to live in forests and far from the public road because they are not used to living in adjacent houses; they believe in the importance of living far from each other for fear of the evil eye and each others' jealousy. Besides, they use mobile agriculture as their means of subsistence.

The wrong belief that the owl augurs bad omen badly affects the environmental balance. In truth, this bird hunts between 3 and 4 mice each night. It plays an important role in safeguarding the environmental balance. The same is true for spiders which are hated by many of us; they hunt more than the weight of 3 million men of harmful insects each year. Should spiders disappear, these insects would have heavily devastated the components of life on this planet.

The same way that beliefs play a major role in hindering development and in the waste of resources, the prevailing tendencies and values in society⁽³⁷⁾ can play a big part in the destruction of the environment. Instead of raising awareness about the importance of preserving public property⁽³⁸⁾ sources and public funds, what we find are ideas of selfishness and dependency. The popular heritage, especially proverbs, display these tendencies. Examples of such proverbs are :

“when dealing with the government, do not worry about measures”

" I have taken government money and not yours”

" Get away from my land by an inch and cut."

And similar proverbs advocating the waste of public money .

In the Islamic world, where countries complain about the incompatibility of population growth with development plans, some cultural values stand in the face of modern ideas advocating the reduction of that incompatibility and the improvement of the standards of living, especially in rural communities where the rate of illiteracy is high. Their popular proverbs⁽³⁹⁾ demonstrate that:

«Houses that are full of people are never broken into.»

«When they said that the newly born child is a son, I was relieved, but when they said it was a girl I felt as if the house were going to fall down.»

«If the husband wins over you with his money, you can get the better of him by multiplying children»

«Small children who are now like sticks will grow into full-fledged trees that shed their shade in the garden.»

«Two scorpions on the wall are better than two girls at home.»

Also, values denoting the belittlement⁽⁴⁰⁾ of women form a major part of the thinking of these villagers, as when they say :

«Do not trust the sun when it disappears, horses when they trample down, or a woman when she prays»

«Break a girl's rib and 24 ribs come out»

«Never had a woman brought up a bull and he tilled the land well»

Population and environment programs can discuss these wrong perceptions pervading the modern cultural and economic fabric in order to disprove them and show how they are incompatible with the spirit of modernity. We must, therefore, seek to solve environment problems by giving importance to man who is the centrepiece, the executor, and the goal of development.

Work incentives, be they economic or social, play a major role in the misuse or the protection of environmental resources in simple communities. Some rural communities, in which the rate of illiteracy is increasing, cling to all that is customary and inherited from their ancestors. They regard it as one of their inalienable and inviolable values. This constitutes a stumbling block to development. In such traditional communities, the tendency to change diminishes significantly as individuals are sceptical of innovations and do not accept to take any risks.

The success of development in achieving its objectives in view of the waste of renewable and unrenovable environmental resources depends on the degree of conformity⁽⁴¹⁾ of the local cultural traditional components with the new and modern elements which development brings about. The more compatible are the new elements with the local and traditional components, the more acceptable they become. Accordingly, these elements are easily incorporated in their culture.

The conclusion that can be drawn from what has been said is that we should work towards preparing the cultural environment for all the innovations and changes that development involves.

Islam advocates the renovation of the cultural environment and rejects the imitation and subservience obvious in the attitude of those who «say : *' Enough for us are the ways we found our fathers following'*» (Maida : 104). Or *"We obeyed our chief and our great ones "* (Alhsab : 67)

Islam also favors telling the truth and prohibits hypocrisy. Allah said : *"To be seen of men, bit little do they hold God in remembrance "* (Nissaa : 142)

Islam also prohibits pessimism. From Anass- May Allah be pleased with him - said that the Prophet PBUH said : *"No contagion and no pessimism and I like good omen; they say : 'What is good omen?': He said: 'a good word' "*⁽⁴²⁾. (agreed upon)

Islam also prohibits the practice of magic; it is prohibited and is unanimously considered by the 'Ulemas to be one of the cardinal sins. The Prophet PBUH considers it one amongst the seven disastrous things . From Abu Hurayra, May Allah be pleased with him reported that the Prophet PBUH said : "Avoid magic and avoid associating partners with Allah and magic» (Bukhari's Sahih. Bab Ash-Shirk)⁽⁴³⁾.

Islam urged us to get rid of illiteracy. Ibn Saad said that Amer Chaabi said: " The Prophet PBUH took seventy prisoners on the Day of Badr and he exchanged them for a ransom proportionate to their wealth; the people of Mecca were literate then and the people of Madina were not; those who had no ransom were charged with teaching ten boys from the Madina, how to read and write. It is reported that Zaid ben Tabit, one of the scribes of the revelation, was taught to read and write by a prisoner from Quraish. This means that the Prophet's aim was not only to teach people how to write, but excellency is required for the learner not to forget what he learnt and return to illiteracy. The Prophet did not stop at urging men to learn how to write; he urged women to do the same thing. Chafa'a bent Abdallah, for example, taught Hafsa bent Omar, the mother of the faithful, how to write⁽⁴⁴⁾.

What are the Causes of Environmental Problems ?

The civilizational systems, sub-parts included, interact with the sub-systems of the natural environment through a series of complex networks involving substance and energy flux. This continuous interaction has positive and negative consequences or what is commonly known as environmental hazards for which human beings are seeking solutions, remedies, and environmental decisions as the following figure (4) shows :

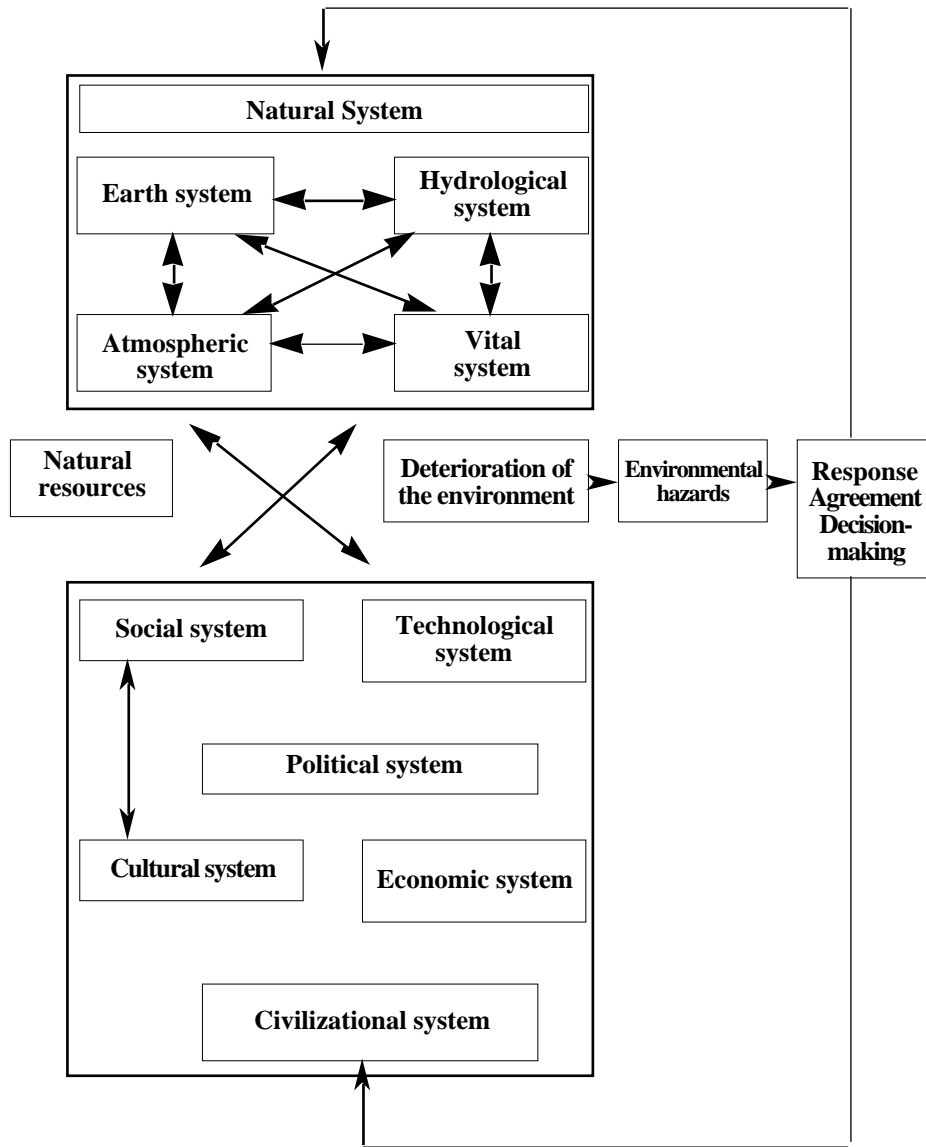


Figure (4) The environment system: its functional links and consequences

The natural environment system is characterized by stability and equilibrium, which is now in danger of being jeopardized by humans. Every organism in this system influences and is influenced in turn by the other organisms. If these organisms are not exposed to external, new or accidental factors, they will maintain a biological and natural equilibrium between them in which each species preserves an almost stable numerical repartition. Many factors limit the infinite increase or the supremacy of any kind of natural population in the environmental system; these factors include the presence of natural enemies, the competition over a limited number of food resources, the scarcity of resources, or the dwindling of the space available for its reproduction and spreading.

For instance, if a couple of flies lived on garbage from March to September, they give birth to 191 billion flies. Each fly can carry 6 million microbes and can transmit 42 diseases to human beings. By the same token, if a couple of mice is left to live on garbage for 3 years, their off-spring after 3 years would be 3.5 million mice and after 5 years it would be 5.6 million mice.

The natural environment system components involve interrelated and intertwined operations marked by numerous directions, which lead to changing the growth rate of living communities and lead them to a stable and balanced state within the system as a whole.

But human beings did not leave the environment systems intact. They have exploited them in an irrational manner. For instance, human beings have used their technological system to interact with : the earth system ; with the economic system -following their desire to expand the areas of agricultural lands-; with the social system -following their desire to create job opportunities for the growing population and to improve the living

standards of people-; with the political system- which in the Egyptian case attempted to break off international monopolies and challenge colonialism by building a dam on the Nile river, the High Dam, the positive consequences of which are :

1. Transferring dry lands into permanently irrigated ones.
2. Producing electricity for the villages in the valley and in the Delta and expanding industrialization.
3. Increasing the land on which rice is grown.
4. Continuous damming of water to ward off floods and to provide water at moments of scarcity.

But the building of the dam had also negative consequences:

1. The increase of the Mediterranean sea's eating away of the north of the Delta
2. The continuous erosion of the right bank and the continuous sedimentation of soil at the left bank of the Nile.
3. The deprivation of the Egyptian soil from mud, which was a key element in its fertilisation.
4. The rise in the rate of desertification in Egyptian lands.

Just as Egyptians have achieved good results from the High Dam project, they must elaborate plans to put an end to and alleviate its negative aspects.

Another example : Armed with technology, human beings have interacted with the vital system (as represented by forests); thus they have used their economic system as represented in their desire to expand the areas of farmed land at the expense of forests; they have also acted according to their social values as is obvious in their desire to raise the living standards of the population and provide food for everyone; they have also interacted with the water

system as is obvious in their desire to exploit water resources. As a consequence human beings chop down trees, an act which leads to both positive and negative consequences:

Among the positive consequences we cite:

- Clearing forest lands for farming purposes

The negative consequences include :

1. Soil disintegration and its rapid erosion.
2. The increase in sediments carried by river waters from the places where trees are chopped down 7 thousand times more than what it was before the act of indiscriminate logging.
3. The increase of sediments in rivers leads to the destruction of the reproduction habitats of fish.
4. The repetition of strong floods occurring on the banks of the river.
5. The continuous washing away of soil
6. The increase of water caused erosion concentrated in deep canals.

Thus, the environmental consequences resulting from indiscriminate exploitation of forests had been costly, exceeding sometimes the benefits gained by factories from cutting down trees.

Accordingly, human beings should come up with a planned program for an organized exploitation of forests. This plan should include planting small trees in the place of those chopped down.

Another example : As a result of their interaction with their environment though the use of technology, human beings have

produced fluorocarbons which affects the Ozone layer, has led to what is known as its depletion and the erosion of a great part of it. This is unfortunate, for the Ozone layer helps shield from highly harmful rays. As a result, the greenhouse effect appeared with all the consequences ensuing such as the rise in the temperature of the earth surface, the melting of ice, and the rise in sea and ocean levels and the submersion of islands and coasts.

It is man's duty then to take the necessary measures to reduce the emission of this gas and find non-harmful substitutes for it.

Interactions between the various ecosystems are not as easy as shown in the above-mentioned examples. Indeed, they interconnect in a very complex manner to such an extent that their components, and how they change over time, have become a challenging topic for scientists. In fact, it is a great challenge in as much as what occurs in nature is very complex. The environmental system made of hundreds of species of living organisms. Each of these species is affected by the components and the elements of the ecosystem and the other living organisms. Moreover, the number and kinds of living organisms change; similarly, the natural components of the environment, such as temperature and soil dampness, change on a daily basis and from season to season. Therefore, dealing with environmental problems requires devising programs of advanced research based on providing integrated and true information.

To solve environmental problems, it is necessary to look at the roots of these problems, to examine their sub-parts and to analyze the complex relations binding them. The proposed solutions to the natural environment systems go hand in hand with the solutions proposed to the cultural environment systems.

SECOND PART

The Miraculous Nature of the Divine Creation of the Environment

Qur'anic texts have dealt in a comprehensive manner with all the components of the environment. If we consider the environment as «the earth and whatever goes on it» then we find that it has been mentioned in 199 verses in various Suras⁽⁴⁵⁾. Many texts have tackled environment facts on our planet which we are unable to understand. The following are some of the verses that deal with the stages of the creation of the universe, the sign of the greatness of Allah. In Fussilat Allah said :

«Say : Is it that ye Deny Him Who created The earth in two Days ? And do ye join equals With Him ? He is the Lord of (all) the Worlds. He set on the (earth), mountains standing firm, High above it, And bestowed blessings on The earth, and measured therein All things to give them nourishment in due proportion, In four days, in accordance with (the needs of) Those who seek (sustenance). Moreover He comprehended In His design the sky, And it had been (as) smoke : He said to it And to the earth : 'come ye together, Willingly or unwillingly.' They said : 'We do come (together), in willing obedience.' So he completed them As seven firmaments in two Days, and He Assigned to each heaven Its duty and command. And We adorned The lower heaven With lights, and (provided it) With guard. Such Is the Decree of (Him) The Exalted in Might, Full of knowledge».(Fussilat : 12)

1. The Environment is Created with Utmost Care and in a Balanced Manner.

Scientific observations show that the universe is governed by strict agreements and remarkable coherence. Look at the following examples: the form of the earth; the space between it and the sun; that between it and the moon; the size of the sun and the moon with regard to the earth; the speed with which the earth moves; the tilt of its vertical axis; the formation of its surface and many other characteristics. Every thing is created to serve life and nothing is accidental nor is it created without a purpose. Allah created every thing in a balanced manner, in spite of the fact that it may be in a permanent movement. Had it not been for this harmony, existence would lose its equilibrium. Earth would not be earth, the sky would not be the sky and substances would fade away. But Allah created this world in such a way as to ensure its permanent balance. Allah said :

«It is We Who have set out the Zodiacal Signs in the heavens, And made them fair-seeming To (all) beholders; And (moreover) We have guarded them from every evil spirit accursed : But any that gains a hearing By stealth, is pursued By a flaming fire, bright (to see). And the earth We have spread out (like a carpet); set hereon Mountains firm and immovable; And produced therein all kinds of things in due balance. And We have provided therein Means of subsistence,- for you and for those whose sustenance Ye are responsible. And there is not a thing But its (sources and) treasures (inexhaustible) are with Us; But We only send down Thereof in due and ascertainable measures». (Hijr : 21)

This planet which is spread out for humans to see and walk on ! these mountains firmly established on earth as is referred to in the idea of the production of every thing in due balance ! there is also reference to the means of subsistence and good living for

human beings and for those who happen to be under their wardship, ensured by the many graces bestowed by Allah. The graces these people live on are not yours; they are Allah's. You are but one of the many communities⁽⁴⁶⁾ that Allah created and provided sustenance for; you are not a community which bestows grace on others but Allah bestows grace on you and on others. Then, He favoured this community and put at its disposal other communities to serve it and safeguard its interests--communities which live on Allah's graces without owing the served community anything. No creature is capable of any feat or is able to possess anything whatsoever. It is Allah who possesses all the treasures. As mankind's knowledge grows, it gains more insight into the secrets of the world destiny. The significance of the treasures of this world have become more apparent after man has discovered the nature of the elements of which the planet is composed and the nature of its structure and composition. Man realized that water is composed of atoms of oxygen and hydrogen and that one of the treasures contained in the green plant is the azote found in the air. He also discovered carbon, oxygen, carbon dioxide, the rays sent by the sun discoveries which demonstrate the treasures of Allah and of which man has come to know but a few.

Allah created everything in the universe (the great environment) in due balance: a balance in movement, in temperature, in gravity and its forces, in magnetism and its impacts, in electrical fields, in the quantity of water found in the seas, in earth as a whole...in the equilibrium between death and life, in the balance of the creatures on earth so that no species outnumbers the others. Allah said :

«Verily, all things have We created in proportion and measure.»(Qamar : 49)

«It is He Who created all things, and ordered them in due proportions» (Furqan : 2).

«Every single thing is before His Sight, in (due) proportion».
(R'ad : 8)

Air, a major constituent of the atmosphere, as previously mentioned, is composed of 78.7% of nitrogen (azote). It is an incombustible gas that does not melt in water and is a major food for plants. Oxygen constitutes 20.95% of the air. It is a gas which is active, combustible and melts in water thereby providing the oxygen necessary for the organisms living in water; it is renewed through the acts of transfer and interchange between air and water. Without this movement, oxygen would be exhausted in water, and, consequently, life in water would disappear. The remaining 2% is made up of many other gases such as hydrogen with 0.01% and other gases such as carbon monoxide, sulfur-dioxide, helium, methane, krypton, neon, xenon and ozone. This is a meticulous repartition of gases. Scientific research has shown that if the percentage of nitrogen⁽⁴⁷⁾ was less than what it was and should an electric flame fall from the outer space on the earth (which happens at times), every-thing on earth would burn. Nitrogen, which is created in this highly calculated proportion, is able to control the nature of oxygen, a combustible gas, and transform it into a gas which only facilitates combustion, but which does not ignite in the presence of this amount of nitrogen. The reason is for oxygen to continue to exist in the air in order to fulfil its fundamental function of providing opportunities for the continuation of animal life on earth. If we take carbon dioxide, for instance, in the characteristics and proportion of 0.03 % which Allah had determined for it at the time of creation, we find that this gas is mostly concentrated in the troposphere. Allah has given it the function of absorbing the infra-red rays from the atmosphere. This enables the atmosphere to maintain a temperature degree suitable for life. On this basis, any decrease or increase in the percentage of this gas means a change in the temperature of the

atmosphere, thus affecting life in its different aspects. It is this phenomenon which worries mankind nowadays. The soaring increase of carbon dioxide and other warming gases such as methane, chlorofluorocarbons, and carbon lead to a rise in the temperature of the atmosphere and to the dangerous melting of great quantities of ice in the Arctic and the Antarctic, which is the main cause in the rise of sea levels. This makes many coastal cities threatened by submersion. According to the statistics carried out by the United Nations Fund For the Population, 16% of Egypt's inhabitants and 10 % of Bangladesh's would become ecological refugees⁽⁴⁸⁾. To this are added the disturbance of water cycles and the increase in the number of insects, etc .. As a result, voices calling for holding conferences and taking decisions liable to controlling the rate of carbon dioxide in the air are raised. Thus, a world climate convention was signed at the Earth Conference (Environment and Development) which was held in Rio De Janeiro, Brazil in 1992. The goal of this conference was to ensure that the rate of carbon dioxide remain in its ecologically acceptable proportions. It is legitimate then to ask this question : can there be life on the surface of earth with an air structure different from that created by Allah ? Allah be praised! Nothing is created without a purpose.

Another example will show how the balance of energy is maintained. Sun rays are the only source of energy in the atmosphere. They contribute 99.97% to the energy exploited in the atmosphere and on the surface of the earth. Scientists⁽⁴⁹⁾ estimate that if a total of 100 units of sun beams enter the atmosphere, 47 units of these beams reach the earth's surface and are repartitioned as follows : 6% is reflected downward, 17% spread out because of clouds and 24% reach the surface of the earth as direct beams. Part of the remaining 53 units is reflected on the outer space (34 %) and another part is dispersed in the atmosphere (9%) while the rest 10% is exposed to absorption because of atmospheric pressure.

The part of energy that reaches the earth's surface (47%) is once again lost through evaporation and exudation (23 %) or through reflection (10 %). Animals and vegetation breathe about 14%. Hence, the true quantity of sun beams that reaches the earth's surface is 47 % and the exact lost quantity is 47 %. This demonstrates that everything is created by Allah with minute accuracy and in an exact balance.

A third example which shows Allah's perfect exactitude is the balance between animals, plants, insects and birds. They live in numerical equilibrium amongst them. But by acting as the lord and superior owner of this universe, and not as its tenant, and by overusing insecticides, man has caused the tipping of the balance existing between animals, insects and plants. This has resulted in an unexpected increase in some pests such as the spread of the red spider and the nut worm in Egypt due to the excessive use of some insecticides. In the past, such pests did not pose a threat to plants. But as a result of man's killing off of their natural enemies through the use of insecticides, these insects have enjoyed a fertile ground for reproduction. Similarly, the excessive use of insecticides led to the almost extinction of the Egyptian kite. Other animals such as the ferret, the wolf, the fox, the crow are facing the same lot. Likewise, the use of D.D.T in Egypt is a major cause of the appearance of the red spider on corn, leading to a disturbance in the natural balance.

Years ago a dangerous disease threatened the cacao produce in West Africa. It became clear afterwards that this disease was caused by a virus carried by white ants. The use of insecticides against white ants led to a huge decrease of this disease. But, the natural balance was disturbed and at least four new insects appeared.

When the State of Arizona, in the United States, removed the ban on hunting the American lion, diseases broke out amongst deer.

Studies displayed that a connection exists between the spread of deer disease and the killing of lions and wolves. The latter used to hunt the sick deer which could not flee, as if lions and wolves were a natural factor contributing to ridding deer of diseases and preserving the natural balance. Yet, the equilibrium is not that easy in most ecosystems. Indeed, the number of living organisms is affected by many factors. Environment studies point out that ecosystems are like a complex net. But, the net of life is more complex than a spider's net, in that the spider's net follows a systematic model of threads and timing, which does not happen in the case of the life net. Indeed, a scientist declared that «life net is not only as complex as we think, but more complex than we think»⁽⁵⁰⁾. Praised be Allah, the Mighty Creator!

2. Allah Protects the Environment through Strong Shields :

When Allah created the environment, He protected it from dangers such as shooting stars and meteors which may get diverted from their course and fall in the sphere of earth gravity. Equally dangerous are ultra-violet rays which are sent with sun rays. Allah most High said : *«And We have made the heavens as a canopy Well guarded : yet do they turn away from the Signs which these things (point to)!»* (Anbiyaa : 32). Recent studies have shown that the atmosphere is composed of a series of layers, and each layer has its own characteristics and fulfils its functions of giving life and protecting all the organisms living on earth. The stratosphere, the adjacent layer to the earth's surface, for example, comprises many life elements such as oxygen and carbon dioxide and the like.

Allah created in the stratosphere, or what is known as the ozone layer, the ozone gas. Allah bestowed this gas with a special characteristic that enables it to prevent the hazardous ultra-violet

rays from reaching the surface of the earth. Thus, this layer serves as a shield against these rays. This explains the worry of mankind when it discovered the erosion of the ozone layer in the Antarctic. To protect this layer and allow it to fulfill its function, a conference was held in Montreal in Canada in 1987, the resolutions of which came into effect in January 1989. It was amended in 1990. Another conference was equally held in Kioto in Japan in 1997 in which a quota of chlorofluorocarbons production was determined for each country, as a first step toward its total elimination.

The same role is played by the mesosphere, the layer that follows the ozone layer towards outer space. It functions as a shield against shooting stars and meteors. Allah harnessed it and gave it the power to burn shooting stars and meteors and transform them to ash that falls lightly on the earth's surface⁽⁵¹⁾. Thus, we see that Allah created the environment with utmost accuracy and protected it with shields, all of which was meant to serve man who is Allah's vicegerent on earth. But, man inflicted heavy damages to the environment. Paradoxically, it is man who suffers most from these hazards. Unfortunately, it is not easy to put the environment back to its original state in which Allah created it.

3. Allah Created the Environment as a Source of Life

The reason for the creation of the environment is life. Thus, when we deal with the environment we should bear in mind that it is not inexhaustible. Its capabilities and potentialities are limited. This is what is called «Ecological Capacity». Any significant change in the elements of the system results in a disturbance of the functions of these very elements. Accordingly, the interaction and interrelation between them is upset. This, in turn, tips the ecological balance; consequently, the environmental elements change from useful elements to harmful ones and cause many damages that threaten the course of life.

If the living kinsfolk outnumber the capacity of the environment to support them, we will notice a pressure on the environment and its resources, which affects the environment on the one hand and the organisms living in it on the other. It is expected that, under natural conditions, vital capacity may come to a halt or may stop growing on account of natural determinants or cultural impediments. In northern Iraq, for instance⁽⁵²⁾, grazing lands provide food for more than a quarter a million sheep without disturbing the vital system. Recently, it is noticed that they include more than one million head. Similarly, the Syrian pastures feed at present three times more than what its grazing capacity can support. Another example, the population of the Maghrebi countries has increased six to seven times since 1900. In 1997, the average rate⁽⁵³⁾ of the population growth is 1.9% ; if we bear in mind that 60% to 70% of the population live on agriculture and grazing, we can imagine its impact on the capacity of the grazing lands. Another example : the animal wealth increased remarkably in the province of Dufar in Oman. This led the political leadership to draw attention to the seriousness of this problem and to its impact on the capacity of pastures in the Southern region. In the provinces of Darfour and Kordofan in Northern Sudan, the number of inhabitants increased six folds from 1917 to 1977. Besides, the number of animals rose rapidly: the number of cows multiplied 21 times, that of camels 16, sheep 12, and that of goats 8 times. At the same time, the space devoted to grazing diminished because of the expansion of dukhn (pearl millet) growing. All the preceding examples show how the output of grazing lands is reduced due to the increase of pressure on the environment.

From this perspective, Islam underlined the importance of preserving the elements of the ecosystem and called for exploiting it wisely and rationally, without any change whatsoever so that the

system could keep on fulfilling its function of feeding life on a sustainable basis. Allah said in this regard: *«But if any one, after God's favor Has come to him, substitutes (something else) God is strict in punishment»* (Baqara : 211).

4. The Environment is Harnessed to Serve Man, Allah's Vicegerent on Earth

Allah offered the environment for man's use. He said : *«Do ye not see that God has subjected to your (use) all things in the heavens and on the earth. And made His bounties flow to you in exceeding measure, (both) seen and unseen ?»* (Luqman : 20). Allah made man His vicegerent on earth : *«It is He Who hath made you His agents, inheritors of the earth»* (Anaam : 165). Subjecting all these bounties of the environment to man's use, exclusive of all the other creatures, is an honour to him. Allah said : *«We honored the sons of Adam : provided them with transport on land and sea: given them for sustenance things good and pure; conferred on them special favor, above a great part of our Creation.»* (Bani Israil : 70).

Making man a vicegerent means that he is a ward over the environment (earth) but not an owner. He is simply borrowing these bounties and charged with dwelling on earth and settling in it on a temporary basis only: *«On earth will be your dwelling place and your means of livelihood- for a time.»* (Baqara : 36). Man should be considerate of what he is entrusted with. The environment is a human heritage⁽⁵⁴⁾. Generations upon generations inherit the permanent riches of the environment. We are not owners of the land, but we simply borrow it from the preceding generations and it is incumbent upon us to preserve it undamaged for the next generations without dilapidating or polluting its resources and potentialities.

5. Preserving the Elements of the Ecosystems is an Individual as well as a Collective Duty

For all the preceding reasons, the protection of the environment, the preservation of its resources, and refraining from wasting or over-exploiting them become individual as well as collective duties. Allah, Sublime be He, threatened to punish, in this world or in the hereafter or in both, those who change Allah's blessings. It is indisputable that the destruction of the elements of the environment, which engenders ecological problems from which our modern world is suffering, is a sort of punishment for those who alter the bounties of Allah :

«Mischief has appeared on land and sea because of (the meed) that the hands of men have earned, that (God) may give them a taste of some of their Deeds : in order that they may turn back (from evil)».(rum : 41)

6. Preserving the Environment is a Form of Worship

Allah created man and defined his mission in this life. Allah said : *«I have only created Jinns and men to serve Me»* (Zariyat: 52). Worship in its overall meaning is not restricted to performing religious rituals such as prayer, fasting and pilgrimage, etc..., but comprises also the faithful abidance by the precepts and injunctions of Islam in all walks of life. Thus, the good use of the environment, the protection and the preservation of its riches for the sake of mankind at large, the non-pollution of water, its preservation, the non pollution of the air and the soil, the good use of public facilities and public property, and abstaining from indiscriminate hunting and grazing, all of these are forms of worship. From this perspective, any concept that defines the way one should deal with the natural and civilization components of the

environment, through constructive Islamic conduct, is an order from Allah that should be met with obedience and subordination, out of gratitude for His many blessings. Allah said : *«But do thou good as God has been good to thee, and seek not (occasions for) mischief in the land»* (Qasas: 77).

Allah has been good to us by creating for us an environment having all the components of life. We must, therefore, be good to Allah and not trade good for bad. The bad exploitation of environment resources and its destruction and depletion turn us away from truly serving Allah. These wrong behaviors inflict damages on mankind at large. Islam prohibits us from inflicting damage on ourselves or on others. The Prophet (PBUH) said : *«No soul must incur damage on another»*⁽⁵⁵⁾. The bad, unwise and irrational exploitation of the environment, its destruction, pollution and depletion are tantamount to showing ungratefulness for Allah's favors. And ingratitude and the denial of Allah's favors and bounties lead to many scourges and catastrophes : *«Yet was it ungrateful for the favors of God : so God made it taste of hunger and terror (in extremes) (closing in on it), like a garment (from every side), because of (the evil) which (its people) wrought.»* (Nahl: 112)

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THIRD PART

THE ATTITUDE OF ISLAM TOWARDS SOME ENVIRONMENTAL PROBLEMS

1. Air Pollution

Using the technological devices and tools that he invents each year and which serve to extract and transform raw materials such as iron, copper and oil, man has affected the natural environmental system using his economic system, which is essentially based on industry, he set up thousands of factories to improve the living standards of the population thereby changing the structure of the Social fabric. On a political level, he sought to conclude commercial agreements in order to import raw materials and find markets for selling manufactured goods. Many gases such as carbon dioxide, hydrocarbon, oxide nitrogen, sulfur compounds, molecules and smoke have become abundant as a result of industrialization. These substances interact with each other and cause the pollution of the atmosphere, and, consequently, air pollution.

Scientists define air pollution as the existence of solid, liquid or gaseous substances in the air in amounts capable of inflicting physiological, or economic damages or both on human beings, animals, plants, equipment, and tools; or of affecting the natural physical and chemical structure of things.

The Attitude of Islam Towards Air Pollution :

Islam considers pollution as a sort of mischief, damage and alteration. The protection of air from pollutants is an individual religious duty of every Muslim. In one of its verses, the Qur'an

regarded mischief as a crime and calls attention to the retribution awaiting those who do it : «*And do no mischief on the earth after it has been set in order*» (Araf: 56); «*And make your own hands contribute to your destruction*»(Baqara : 195); «*But if any one, after God's favor Has come to him, substitutes(something else) God is strict in punishment*» (Baqara : 211). Muslim scholars considered all types of smoke to be hazardous. It is referred to in the Qur'an as «*a grievous penalty*». Allah said «*Then watch thou for the Day that the sky will Bring forth a kind of smoke (or mist) plainly visible, Enveloping the people : This will be a Penalty grievous.*» (Dukhan : 11)

2. Water Pollution and Paucity :

Through all the systems that he has devised as part of the civilization system (the cultural system, the social system, the economic system, the technological system, the political system and the vital system), man has interacted with the natural environment (earth system + water system). This interaction is not without its consequences. Indeed man has dumped his human, plant, animal, mineral, industrial and chemical residues (acids, alkalines, dyestuff, minerals, fat, plastic, lubricating oil, insecticides, lead, hydrocarbon compounds, blood, sewage, mercury, cadmium, etc...) into water, causing a great amount of water pollution. Worse still, man has also polluted rain water. When rain falls from the sky, it gathers pollutants dispersed in the air such as nitrogen oxide, sulfur oxide, and soil grains. It is incontestable that rain water comes pure from its source. Allah said: «*And we send down pure water from the sky*» (Furqan : 47). The gaseous pollutants melt in water only during rainfall. Moreover, man's indiscriminate activities pollute groundwater as a result of the different chemical substances and sewage water that seep into it. He also disposes of waste in a careless manner. Thus, it leaks into the geological layers that carry groundwater and pollutes them.

The Attitude of Islam Towards Water Pollution :

Water preservation lies at the heart of preserving life in all its aspects. Allah prohibited polluting water : «*So eat and drink of the sustenance provided by God, and do no evil nor mischief on the (face of) the earth*» (Baqara : 60). The Prophet (PBUH) said : «Cover cups and closely tighten the mouth of kraters (from which you drink) because there is a night in the year on which pests infect any uncovered cup or krater».(narrated by Muslim) (Kitab Al-Ashriba)⁽⁵⁶⁾. The Prophet called for tightening the mouth of kraters (from which we drink) in order to guard against pollutants which may be transmitted to it through the air or against insects that transmit viruses and parasites, such as crickets, mice, ants and gnats. Jabir, may Allah be pleased with him, reported that the Prophet (PBUH) said : «None of you should urinate in stagnant water and wash from it» (narrated by Muslim)⁽⁵⁷⁾. The Prophet also prohibited urinating in running water, as narrated by Tabarani on the good authority. The Prophet also said : «Beware of cursed things : defecating in water, in shades (where people rest) and in the path that people take». Defecating in water leads to polluting it because of the parasites and the unpleasant smells as well as the reduction in the rate of oxygen found in it. This affects greatly the organisms living in water such as fish and the like. It also transmits diseases such as cholera. In this respect, all that leads to a prohibited thing is necessarily a prohibited thing, prevention is better than cure and staving off mischief has precedence over procuring interests.

Drinking Water Paucity :

The volume of water is estimated at 1360 billion cubic meter. 97% of this quantity is found in seas and oceans, whereas drinking water is only 3% which is distributed as follows : 1% drinking water, about 9% of which is groundwater, and the rest is surface water found in rivers and lakes⁽⁵⁸⁾.

- Icy water create a very important balance in the environment. It is essential for human life in the sense that if it melts (by itself or due to human intervention), islands and coasts would be submerged.
- Drinking water is constantly renewed thanks to rain. Water allocation is not consistent with the population distribution in the world. There is a great disparity in water distribution in the world. In Brazil there is 18%, Russia 13%, Canada 9%, United states 8%, whereas the flow of the Nile, which meets the needs of 10 countries, does not exceed 0.3%⁽⁵⁹⁾. For instance, 15 rivers contain 33% of this amount. Nowadays, many countries are unable to satisfy their needs in drinking water. The Muslim countries come at the top of them. This problem is raised in the Qur'an : «*Say : «see ye?- if your stream be some morning lost (in the underground earth) who would then supply you with clear-flowing water» (Mulk : 30).*- Reports show that water consumption in the world⁽⁶⁰⁾ has increased from 1360 cubic Kilometer in 1950 to 4310 cubic kilometer in 1990. It is expected that consumption will reach 5190 cubic kilometer in 2000. Agriculture consumes 69% (as an international average) of water, industry 23% and households 8%. Many scientists forecast that the world is heading toward a problem of water shortage in the 21st century. To do something about this problem, a conference on water was held in Paris in March, 1998. The recommendations called for setting up ad hoc agencies of water basins protection for the Nile basin and the Euphrates basin, etc...The task of these agencies is to find diplomatic and peaceful solutions, root out the causes of conflict over water, transform them into elements of concord among the countries of the basin, and unify the efforts with the view

of ensuring fair shares of water and ensuring its protection from pollution.

The Attitude of Islam Towards the Problem of Drinking Water Paucity :

The Prophet (PBUH) said : «men share three things : water, grass (herbage), and fire»⁽⁶¹⁾. Water is the property of everyone. The Qur'an also prohibited the over-exploitation of water.

Allah said : «*eat and drink but waste not by excess for God loveth not the wasters*» (Araf : 31). Ibn Majja reported a Hadith from Ibn Umar who said that the Prophet passed near Saad Ben Abi Wakkas when he was performing his ablutions and said : «What is this waste? And the latter replied : is performing ablutions an extravagance? He said: yes, even if you are (doing them) at a running river»⁽⁶²⁾ :

3. Earth and Soil Pollution :

The pollutants of air and water pollute also the soil for the air passes through its grains. Rainwater, irrigation water and groundwater also seep into the grains of the soil. Therefore, any disorder in a system will necessary affect the others. Man, via his systems (cultural, technological, social, and economic), alters the natural system as represented in the soil. Thus he throws away his solid waste and house garbage, buries his excretions, increases the use of insecticides and pesticides, and abuses of chemical fertilizers as well as heavy mineral wastes such as lead, mercury and cadmium. All this engenderes soil pollution which is in turn transmitted to the human body through food chains. As a consequence, man suffers from many diseases such as cancer, kidney failure and nervous diseases. Islam prohibits all sorts of mischief in the land. Allah said : «*That if any one slew a person –*

unless it be for murder or for spreading mischief in the land – it would be as if he slew the whole people» (Maida :32). Many Islamic experts pointed out that types of mischief include tree felling and all types of pollution in view of the fact that they cause death. The Prophet prohibited causing damage and inflicting it on others. He said : «No harm and no inflicting harm», and «who caused harm Allah shall inflict harm on him.» Narrated by Ibn Majja and Abu Dawud.

4. Noise Pollution :

Voice is very important for the communication of ideas. It came in the second place after the eyes in the Qur'an. Allah said : *«Have we not made for him a pair of eyes and a tongue and a pair of lips» (Balad : 9). Scientists⁽⁶³⁾ define noise pollution as the constant change in the forms of the vocal waves, in that the strength of the voice exceeds the natural average permitted by scientists for the ear to receive and transmit to the nervous system. Noise occurs as a result of the interaction of the social system represented in high population density with the technological system represented in industrialization, the high numbers of factories and workshops, and the concentration of airports near cities. It also occurs as a result of the interaction of these systems with the economic system and the predominance of industry over other activities. The interaction of these systems, (including their sub-systems) results in noise pollution, a main cause of headaches, disorder in the blood cycle, high blood pressure, nervous system diseases, digestion troubles, and some physiological diseases⁽⁶⁴⁾. The most important of them are change of mood, nervous tension, the increase of cholesterol in the blood, and accompanying symptoms such as loss of memory and nervousness. All these lead to a decrease in the productivity of workers and in huge sums of money devoted to the medical treatment of the aforesaid diseases.*

The Attitude of Islam Towards Noise :

Islam prohibits causing noise and fuss and raising voices inside mosques and during the recitation of the Qur'an. Allah said : *«Neither speak thy prayer aloud, nor speak it in a low tone, but seek a middle course between»*(Bani Isreal : 110)

Loud voices wash away any possible compensation for good deeds, and whoever speaks in a hushed voice is forgiven and granted great reward. Allah said :

«Ye who believe! Raise not your voices Above the voice of the Prophet, Nor speak aloud to him in talk, as ye may speak aloud to one another, lest your deeds become vain and ye perceive not.» (Hujurat : 3)

The Qur'an pointed out that some noise kills. Allah said : *«The (mighty) blast overtook the wrong –doers, and they lay (dead) prostrate in their homes before the morning.»* (Hud : 67).

The Qur'an satirizes those who speak in loud voices. In the following verse, the Qur'an makes fun of the unbelievers by saying : *«Their prayer at the House (of God) is nothing but whistling and clapping of hands»* (Anfal : 35). This means that they had been whistling and clapping their hands in the house of Allah.

Islam advocates lowering one's voice when it points out that there is no noise pollution in Paradise: *«Where they shall hear no (word) of vanity»* (Gashiya :11). *«No frivolity will they Hear therein, nor any Taint of ill, - Only the saying , 'peace! Peace'»* (Waqi'a : 26)

The Prophet (PBUH) was never heard speaking loudly in his meetings.

The Prophet rejected the use of loudspeakers or drums in calling for prayer but preferred Bilal because he had a melodious voice.

The Prophet (PBUH) prohibited noise. Abu Mussa reported: «we were travelling and men started raising their voices in exaltation of God, then the Prophet (PBUH) said : ‘O men lower your voices for you are not addressing a deaf or an absent being, but you are addressing Allah Who is nearby and can hear everything»⁽⁶⁵⁾

5. Pollution in the Sea

Using his political system + his economic system + his technological system (drilling for oil , gigantic oil tanks, and oil pipelines) man greatly affects with the water system : the seas and oceans where he drills for oil, or which are crossed by ships that discharge the content of their containers in sea waters, or in which oil carriers may drown or dump the residues of oil or petrochemical industries, or the starting of wars and the deliberate seeping of oil into water, or the igniting of fire in the oil fields--all of these irrational behaviors, of course, have bad effects on the environment both in the present and in the future

Oil pollution destroys the plant environment of the sea; when it spills, it constitutes a layer which floats on the surface of water. This layer prevents oxygen, carbon dioxide and light from reaching inside the water; consequently, the operations of photosynthesis, an important element for plants, come to a halt. Photosynthesis is an essential operation for providing the sea with oxygen and clearing away carbon dioxide. Oil stains prevent the sun temperature from getting into deep waters. This affects coral wealth and sponge. Oil also contains poisonous compounds which cause the death of shell, invertebrate, cephalopods, crustaceans and plankton, the latter being very important for life in the sea in that most fish and sea animals live on them.

- Oil stains reduce evaporation by 20%. Seas and oceans ensure 90% of water vapor which is found in the air. The rise in the temperature of water surface is also due to oil stains. This affects the oxygen found in water, and negatively affects the growth of water organisms be they animals or plants. This results in a disorder of the marine environment. It also affects sea birds as well as affects desalination stations, and therefore changes the taste of distilled water.

The Attitude of Islam Towards the Pollution of Marine Environment :

The deliberate pollution of the environment amounts to ungratefulness for Allah's favors. Allah calls for us to conserve and protect the environment and not to destroy or devastate it; he threatens those who do mischief on the land with punishment. Allah said :

«Mischief has appeared on the land and sea because of (the deed) that the hands of men have earned» (rum : 41).

«But they ever strive to do mischief on earth. And God loveth not those who do mischief.»(Maida : 64).

«So see what was the end of those who made mischief». (Araf : 103).

6. Pollution Caused by Insecticides

Insecticides⁽⁶⁶⁾ are chemical compounds falling under the category of organic compounds which are used to destroy diseases and insects that affect agricultural plants or that generally disturb mankind.

By dint of the systems that he devised (the technological system represented in the insecticides he invented, the vital system represented in the insects that affect plants, the economic system and man's strive to increase production) man has interacted with the earth system and the other sub-systems, thus increasing the amount insecticides used to destroy insects and diseases; by so doing he has polluted the environment.

Insecticides pollute the soil and lead to side effects that are harmful to man and animals. They also kill tiny organisms living in the soil and which produce the substances that are necessary for the fertility of the soil; hence their negative impact on productivity. This in turn leads to the decrease in the number of sea birds and the devastation of green forests⁽⁶⁷⁾ (see what USA did in Vietnam). Insecticides have also caused many dangerous diseases such as cancer, skin diseases, and the disturbance of the liver functions.

The Attitude of Islam Towards Pollution by Insecticides :

The Islamic Shari'a forbids doing mischief or any deed that may lead to the destruction of crops and cattle. Allah said : *«And do no mischief on the earth after it has been set in order : that will be best for you, if ye have faith.»*(Araaf : 85). Allah, Sublime be He, also said : *«And refrain from evil and mischief on the earth.»* (Aaraf : 74). Modern science tends to biologically fight some types of insects, which does not necessarily lead to their complete eradication but to their reduction to a number the damages of which would have no economic incidence.

7. Food Pollution :

By food pollution is meant the bacteria that it might contain and that might cause diseases as well as any natural, chemical or reactive substances which lead to food poisoning. The latter means

the serious intestine and gastric diseases caused by eating food polluted by bacteria or poisons.

The Attitude of Islam Towards Food Pollution :

The adage 'prevention is better than cure' is useful in preventing food pollution. Hygiene and protection from bacteria and parasites play a major role in this respect. The deliberate addition of any pollutants to food is tantamount to doing mischief and damage. Allah, exalted be He, said : *«So eat and drink of the sustenance provided by God, and do no evil nor mischief on (the face of the) earth»*. (Baqara : 60). Allah, Most High, also said : *« And make your own hands contribute to (your) destruction»* (baqara : 195).

The first verse prohibited doing mischief after it ordered human beings to eat and drink of the sustenance Allah provided for them. Though the mischief intended by the verse is injustice and inequity on earth, it comprises food and drink damage⁽⁶⁸⁾, for no injustice equals causing the death of a person, which is something Allah forbids except for a just cause. Allah said : *«That if any one slew a person – unless it be for murder or for spreading mischief in the land- it would be as if he slew the whole people»*(Maida: 32). Surely, prevention, as far as food pollution is concerned, is better than cure as laid down in this rule of Islamic jurisprudence :

«staving off mischief takes precedence over procuring benefits». In a Hadith, narrated by Jabir, he said that he heard the Prophet (PBUH) saying : *«Cover cups and closely tighten the mouth of kraters (from which you drink), for there is a night in the year on which a pest infects any uncovered cup or krater»*. (narrated by Muslim)⁽⁶⁹⁾ .

8. Depletion of the Ozone Layer :

The ozone gas in the stratosphere is very important for life. It shields the earth from the ultra-violet rays sent by the sun. Should these rays reach the earth they would kill all organisms and creatures. The ozone gas absorbs these rays and prevents them from flowing to the earth surface. Only a small amount reaches the earth in order to help in the formation of vitamin D in our bodies.

Environmental pollution leads to the increase in the ozone gas near the earth surface i.e. in the Troposphere, while reducing it in the Stratosphere. Hence, it appears that pollution inflicts a huge damage on the ozone and consequently on life in all its aspects.

Scientific research showed that there is a hole in the Ozone above the Gulf of Haley in Antarctica and that the density of the ozone gas has been hugely reduced from what it should be because of chlorofluorocarbon (CFCs) compounds, the nitrogen oxides emitted from the manufacturing of chemical azotes, and the smoke of planes flying at a high speed as well as the emissions of nuclear explosions and space shuttles.

Scientists hold that the effects from the ozone hole would be hazardous and harmful. We have discussed these hazards above.

The Attitude of Islam Towards this Issue :

In His Holy Book God, Most High, said : *«Do no mischief on the earth, after it has been set in order, but call on Him with fear and longing (in your hearts) : For the Mercy of God is (always) near to those who do good»*.(Araaf : 56). And Allah, Exalted be He, said :

«And do no mischief on the earth after it has been set in order : that will be best for you, if ye have faith». (Araaf : 85) . In the same Surat, Allah also said : *«And refrain from evil and mischief*

on earth»(Araaf : 74). All of these verses warn man against doing mischief on earth after Allah has set it in order for our life and for all the organisms that live on this planet. Our Lord, Glory to Him, Who disposes of all things in a perfect order said: «*Such is the artistry of God, Who disposes of all things in perfect order : for He is well acquainted with all that ye do*».(Naml : 88).

9. Indiscriminate Hunting :

Numerous animals face the threat of extinction due to the excessive hunting of such animals as deer, unicorn, some kinds of butterflies, and whales. Man has used many devices for hunting these animals such as modern arms and the use of explosives used in the sea. Undoubtedly, these animals play an important role in maintaining balance in the environment. Man does not comprehend the consequences of this now, but surely he will in the future.

The Attitude of Islam Towards Indiscriminate Hunting :

From an Islamic point of view, over-exploitation is proof of irresponsibility. Allah threatens those who transgress the limits and sow havoc and destruction : «*In the end We fulfilled to them Our promise, And We saved them and those whom We pleased, but We destroyed those who transgressed beyond bounds*» (Anbiyaa : 9) . Allah , Most High, also said : «*Eat and drink but waste not by excess for God loveth not the wasters*» (Araaf : 31).The Prophet (PBUH) also called for economizing: «Good manners, perspicacity, and economizing are parts of the twenty four elements of prophethood» narrated by Tarmidhi (who said that it was good albeit strange; it was narrated by Malik and Abu Dawud as is, following Ibn Abbas. Both used the number 25 instead of 24)⁽⁷⁰⁾. The Prophet also said : « Those who fill their appetites in this world are the most hungry in the hereafter»⁽⁷¹⁾. The Prophet prohibited the killing of animals and birds for sport. The Prophet

said : «A woman punished a cat until death then Allah sent her to hell. She gave her neither drink nor food (she kept her prisoner), nor did she release her so as to eat the insects of the earth»⁽⁷²⁾.

The Prophet also prohibited the killing of ants. Abu Huraira said, the Prophet (PBUH) said : A prophet was resting under a tree when he was pinched by an ant. Then he ordered all the ants thrown in fire. Then Allah told him: why did you not punish only the ant which had pinched you»⁽⁷³⁾. Beating animals and marking their faces with tattoos⁽⁷⁴⁾ are also prohibited. The prophet also forbade «taking living beings as a source of sport»⁽⁷⁵⁾. Said Ben Jabir said that Ibn 'Umar passed by a group of people who had made of a chicken a target for their stone-throwing game; when they saw him, they ran away. Then he asked: who did this? it is the Prophet who forbade it.»⁽⁷⁶⁾ Abu Haurayra reported that the Prophet (PBUH) said : «A woman prostitute saw a dog turning around a well on a very hot day; then she gave him water to drink; she was then forgiven her bad deeds»⁽⁷⁷⁾

It is inferred from the above that Islam encourages doing good to animals. Besides, Islam advocates the correct slaying of animals and taking care of them during sacrifice. Shaddad Ibn Aws reported that the Prophet (PBUH) said : «Allah ordered us to be perfect in everything. If you kill animals, do it in a correct manner; sharpen you knives to make death easier for animals»⁽⁷⁸⁾.

10. Indiscriminate Grazing :

Indiscriminate grazing leads to an increase in animal population at the expense of the capacity of the grazing land. This in turn leads to rooting out herbage and to desertification. People would then benefit from the land neither in farming nor in grazing. This is indubitably tantamount to doing mischief on the land and totally changing its nature and its function which consists of

serving the interests of human beings. Islam advocates steering a middle course in everything Allah said : «*Thus We have made of you an Ummat justly balanced*» (Baqara : 143). Islam has also called for the conservation of the flora: «*and of mankind there is he whose speech may please you (o Muhammad) in this worldly life and he calls Allah to witness as to that which is in his heart, yet he is the most quarrelsome of the opponents*» (Baqara : 205)

These two verses⁽⁷⁹⁾ were sent down on Akhnass Ibn Churaik who came to the Prophet and declared his conversion to Islam, but when he went out he burned crops and slew donkeys he passed by. That's why Allah mentioned him in the Qur'an describing him as an arch enemy of the Prophet and Islam because of the mischief he did and the destruction of crops and cattle he carried out.

11. Islam and Natural Reserves :

The Prophet (PBUH) designated some places in Mecca and Medina as protected areas so as to conserve the fauna and flora in these areas. Abbas reported that the Prophet (PBUH) said: «No migration after conquest but there is Jihad and good intentions ; if you have been alerted you must be on the alert. » He also said : «This land was protected by Allah on the day He created heavens and earth ; no one was allowed to engage in battle in it before me ; and even then, it was permitted only at a specific time during the day; it is a protected place till the Day of Judgment ; no cut of its trees, no hunting, and no defecation ; Abu Al abbas then said : except for Al-Izkher; it can be used to feed livestock and sustain households. Then the Prophet said : except for Al-Izkher»⁽⁸⁰⁾. It should be noted that each protected area in Islam has its specified borders and dimensions. Thus the borders of Al Haram Al Mekki ⁽⁸¹⁾ are 'Tan'im' from the North, Adah from the South--about 12 Kilometers from Mecca--, 'Al Jahrana' from the East --about 16

Kilometers from Mecca-- and 'Ouadi Nakhla' from the North –east, 14 Kilometers from Mecca, and 'Chmesi' from the West—about 15 Kilometers from Mecca. Hunting⁽⁸²⁾ is prohibited in Mecca and Medina. Abu Hurayra reported that the Prophet (PBUH) said : « Ibrahim made Mecca into a sanctuary and I do the same for Al-Madina ; no hunting and no logging in its surrounding area ». Ahmed and Abu Dawud reported that the Prophet (PBUH) said that Al-Madina cannot be used for toilet purposes, for hunting, for trees picking, (except under special authorizations), nor for logging, or for camel grazing.»⁽⁸³⁾ In a validated Hadith, the Prophet said «The Medina is a sacred place, between Irr and Tor». On the same subject Abu Hurayra said : «The Prophet (PBUH) made Al-Madina (which is located between the two Labahs) and about 12 miles of its vicinity into a reserve ».⁽⁸⁴⁾ The Labah means black rock and the reference is to the two rocky mountains surrounding al-Madina from the east and from the West.

The sacred place was estimated at about 12 miles stretching from Irr to Tor. Irr is a mountain near Miqat and Tor is a mountain near Uhud located in the North.

Al-Bukhari reported from Anass, May Allah be pleased with him, who said that the Prophet (PBUH) said : «The Medina is a sacred place from here to there, its trees ought not to be cut, and no incident should occur in it ; whoever did anything in it, shall be cursed by Allah, the angels and mankind at large».⁽⁸⁵⁾ However, if anyone finds an already cut tree, he may take it.

Sheikh Sayed Sabik said in his book 'Fiqh Sunna' that Saad Ben Abi Waqass, May Allah be pleased with him, rode to a place in Aqiq and found a servant felling down trees, upon which they took away his things. Later when the servant's people came to ask for them, he refused to do so on the ground that the Prophet permitted him to take them. It was reported by Muslim and was

reported also by Abu Dawud and al-Ha'kim (who established the authenticity of this saying) that the Prophet said : «Whoever cuts anything from it should be deprived of enjoying it. »⁽⁸⁶⁾

The sacred place that is unanimously agreed upon is Mecca. Al-Madina has also its sacred places according to public opinion as can be ascertained from the many Hadiths dealing with it. Muslims did not disagree on a third sacred place, except Wujaa, a river valley in Taif. In his aforesaid book, Sayed Sabiq said that some Muslims considered it a sacred palace (Chafei and Shoukani) while the public did not consider it a sacred place.

From all what has been mentioned, it is clear that Islam adopted the principle of natural reserves with specified borders and limits. Moreover, Islam enacted the adequate legislation to protect these areas. Thus, Islam was a pioneer in introducing such advanced measures as environment protection. Concerning the pilgrim who wore his Sacred robe (pilgrim's garb) in Mecca, anyone who is found hunting an animal or felling a natural tree not grown by man, is indicted for committing a misdemeanor, as we say in modern legal parlance. From a religious point of view, he has committed a sin⁽⁸⁷⁾ and has to ask for forgiveness. He should also be fined and pay the equivalent of what he has cut or has killed ; the fine should be in kind (of those animals found in the reserve such as camels and the like). The man who committed the felony is also subjected to another punishment; he is confiscated of the trees he has cut or the animals he has hunted. If the act was committed by a pilgrim who wore the pilgrim's garb, he has then committed a misdemeanor and should be fined for it and have his things confiscated from him. But if the act was committed by a person who wore not the pilgrim's garb, he is considered to have committed a sin and should ask for forgiveness.

As regards the protected areas in Al-Madina, whoever cuts down a tree or kills an animal, is considered to have committed a sin ; that is to say he has committed a misdemeanor in legal terms. In this respect Allah, Sublime be He, said :

«O ye believers! Kill not game while in the sacred precincts or in pilgrim garb. If any of you doth so intentionally, the compensation is an offering, brought to the Ka'ba, of a domestic animal Equivalent to the one he killed, As adjusted by two just men Among you; or by way of atonement, the feeding of the indigent; or its Equivalent in fasts : that he may taste of the penalty of the deed. God forgives what is past : For repetition God will exact from him the penalty. For God is Exalted, And Lord of retribution.» (Maida : 95)

Penalties for those who encroach on the sacred precincts of Mecca and kill either deliberately or because they forget the Islamic ban, as it appears from the above verses, are of many kinds. The first punishment involves offering the equivalent of what is killed as alms to Mecca. The second is atonement : feeding the poor. The last involves fasting. In all cases, there is a punishment for any one who dares to harm life on the reserved land or kill animals.

This wise and clear legislation ensures the protection of life on the land. Only in this way, could animals, plants and birds will prosper. Scientists estimate that the destruction of vegetation in forests has reached such an alarming level that what was left of forests in 1950 was half of what there was at the beginning of the century. The area of forests that men root out is 140.000 square kilometer per year. In 1990, only 560 protected forests existed in the world, covering about 4% of all the forests in the world⁽⁸⁸⁾.

12. Islam and Man's Innermost Environment :

Islam emphasized the purity of the Muslim's soul, body, and clothes. It also called for taking care of food and for eating good things. However, Islam prohibited drinking or eating bad things.

The Purity of the Body and Soul :

Islam advocated the purity of the body and the soul and made impurity and uncleanness unlawful.

Allah , Most High, said : *«For God loves those who turn to Him constantly and He loves those who keep themselves pure and clean.»*(Baqara : 222) ; *«In it are men who love to be purified; and God loveth those who make themselves clean»* (Tauba : 108) ; *«If ye are in a state of ceremonial impurity, bathe your whole body»* (Maida : 6) Doing ablutions is the best way to keep one's body pure. Thowban said that the Prophet (PBUH) said : *«Be upright and clean ; the best of your deeds is prayer ; only strong believers keep their bodies clean for prayer»*⁽⁸⁹⁾. Abdallah Ibn Bicher Al Mazini, May Allah be pleased with him, reported that the Prophet (PBUH) said : *«Cut your nails and bury them and clean your mouths after eating »*⁽⁹⁰⁾.

Cleanness of Clothes :

Islam favors good looking and clean clothes. Allah , Exalted be He, said :

«O children of Adam! Wear your beautiful apparel at every time and place of prayer»(Araaf :31). Allah also said : *«And thy garments Keep free from stain»* (Muddaththir : 4)

Islam Permitted Good Things and Prohibited Bad Ones :

Allah permitted us to eat all good things. He said : *«They ask thee what is lawful to them (as food). Say : Lawful unto you are (all) things good and pure»* (Maida : 4). Allah, Most High, also

said : *«Say : Who hath forbidden the beautiful (gifts) of God, which He hath produced for His servants, And the things, clean and pure, (which He hath provided) For sustenance? Say : They are in the life of this world, for those who believe»*(Araaf : 32). Beef is one of the good things that are tolerated. Our Mighty Allah said : *«And cattle He has created For you (men) : from them you derive warmth, And numerous benefits, And of their (meat) ye eat.»* (Nahl : 5) Milk and sea food are also allowed. Allah said : *«From what is within their bodies, Between excretions and blood, We produce, for your drink, milk, pure and agreeable to those who drink it»* (Nahl : 66) And *«It is He who has made the sea subject, that ye may eat thereof flesh That is fresh and tender»* (Nahl : 14).

But Islam Prohibited Eating Impure Things :

Allah, Most High, said : *«Forbidden to you (for food) Are : dead meat, blood, the flesh of swine, and that on which hath been invoked the name of other than God; That which hath been killed by strangling, or by a violent blow, or by a headlong fall, or by being gored to death; That which hath been (partly) eaten by a wild animal; Unless you are able To slaughter it (in due form); That which is sacrificed on stone (altars)»* (Maida : 3)

Drinking Impure and unclean things is also prohibited : Allah, Exalted be He, said : *«O ye who believe! Intoxicants and gambling, (Dedication of) stones, and (divination by arrows, Are an abomination, - Of Satan's handiwork : Eschew such (abomination), That ye may prosper»* (Maida : 90). Allah also prohibited adultery and all other sorts of shameful deeds. He said in His Holy Book : *«Nor come nigh to adultery : For it is a shameful (deed) and an evil opening the road (to other deeds)»* (Bani Isreal : 32).

When he became aware of the problems that he had created through his wrong behavior and of his destruction of the environment, man has finally taken stock of the dangers facing him. Hence the numerous conferences held recently to discuss these problems. Examples of these conferences are :

- The Stockholm Conference in 1972 (Sweden).
- The Tbilisi Conference in the USSR in 1977.
- The World Strategic Document for Safeguarding the Environment was issued in 1980.
- The United Nations Conference on Environment and Development in the Rio De Janeiro Summit in Brazil in 1992.
- The Population Conference in Cairo in 1994.
- The Social Development Conference in Copenhagen in 1995.
- In 1997 a conference was held in the United Nations on the occasion of the fifth anniversary of the Rio conference. Representatives from different countries took part in the meetings. Moreover, fifty three heads of states, including those of the G7, took part in the Conference.

The common feature in the recommendations of these conferences is « The necessity to change human behavior». For it is human beings who are responsible for and entrusted with preserving nature : the reservoir of renewable and non-renewable resources. An 'environmental consciousness' aiming to promote a sound behavior towards the environment should be developed. Other solutions include the use of clean technology, the exploitation of resources in such a way as to achieve the objectives of sustainable development, as well as the adoption of environmental legislation and regulations at different levels.

Undoubtedly, education in general and ecological education in particular have a big role to play in this respect. The fundamental function of education resides in changing human behavior to the best. It should prepare human beings for life. This requires that an Islamic orientation be incorporated in the curricula of schools, be they public or private. If this is hard to achieve, at least incorporate environment concepts in the subjects taught at school and at all educational levels. More importance should be given to practical activities which lead to implementing decisions and to facing environmental problems.

From what has been said, we see that 'the Islamic approach' in dealing with environmental issues is based on the following:

- The education of true and strong believers in body and in soul
- To promote the image of a man who believes that he is part of the ecosystem and not one who behaves as the absolute lord of this system.
- The education of a human being man who builds but does not destroy.
- The training of a human being who conserves environment resources and does not waste them.
- The development of human beings who give priority to wisdom and rationalism

At the same time Islam gives importance to :

- Avoiding the causes of environmental problems
- A better use of environmental resources with a view to :
 - Exploiting and not draining them,
 - Preserving and not wasting them,
 - Protecting and not devastating them.

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