

## APPRECIATING THE IMMENSE VALUES OF BIODIVERSITY TO HUMANITY: THE QUR'ANIC PARADIGM<sup>⊙</sup>

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### ABSTRACT

Concern about the state of the natural environment has deep historical roots, but scale of response and its political importance in the modern time has emerged swiftly since the wave of environmental protests that swept across developed nations in the 1960s. *Silent Spring* is one of the push factors that has made a difference in the Western modern history of environmental awareness. The insidious effect of DDT on animals and plants that was illustrated in the book has greatly gained concern from the Western society to play their role on biodiversity protection and conservation. In relation to this matter, the researchers feel that it is vital for Muslim *ummah* in particular, to ponder and reflect on the comprehensive worldview of Qur'anic teachings on the biodiversity imperative. For this purpose, this paper brings the textual studies of the Qur'anic instructions on the immense values of biodiversity domain as described by Allah s.w.t. It is hoped that the Divine revelation shall inspire humanity to protect the biodiversity and embrace a harmonious living culture with all creatures in this world.

**Keywords:** *Biodiversity, environment, muslim ummah, natural resources.*

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## 1.0 INTRODUCTION

Scholars and scientists observe that human pursuits for development have severely degraded the earth and its biodiversity. Development activities such as urbanization, agriculture, buildings and roads construction, transportation, and manufacturing products have changed the natural setting of environment rigorously. Withgott argues that how people manipulate and exploit their environment is influenced by their worldview and cultural background. For him, a worldview reflects a person's belief system about the meaning, process, and essence of the natural world. (Withgott; Scott, 2008: 28) In this respect, the researchers believe that Muslim *ummah* should have a clear understanding on what constitutes Qur'anic worldview of the environment in order for them to adopt a compassionate behaviour and quality lifestyle that appreciate the beauty and values of the nature. In the Qur'an, we may find that it has repeatedly dealt with various dimensions of the universe and biodiversity as in the following verses:

Behold! In the creation of the heavens and the earth; in the alternation of the night and the day; in the sailing of the ships through the ocean for the profit of mankind; in the rain which Allah sends down from the skies, and the life which He gives therewith to an earth that is dead; in the beasts of all kinds that He scatters through the earth; in the change of the winds, and the clouds which they trail like their slaves between the sky and the earth (here) indeed are Signs for a people that are wise. (2:164)

Then let man look at his food (and how We provide it). For that We pour forth water in abundance, and We split the Earth in fragments, and produce there in corns, and grapes and nutritious plants, and olives and dates, and enclosed gardens, dense with lofty trees, and fruits and fodder, for use and convenience to you and your cattle. (80: 24-32)

Generally, the above Qur'anic *ayat* present a holistic worldview of environmental concern that based on a sound *tawhid* principle. Ayduz affirms that there is no holy scripture, which illustrates to man his surroundings, nature, and the universe as a whole (Jamil, 1999: 47) as much as the Qur'an does.<sup>1</sup> The Qur'an has, time and again, mentioned how and why the universe was created and a wide range of other general facts about beings as well. It

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<sup>1</sup> We can initially justify this point of view by looking at the name of the several *surah* in the Qur'an that represent environmental components namely: *Surah al-Baqarah*, *Surah al-An'am*, *Surah Nahl*, *Surah al-Kahf*, *Surah al-Nur*, *Surah al-Naml*, *Surah al-Ankabut*, *Surah al-Dukhan*...

seems that due to such verses in the Qur'an, ecological consciousness makes its way into Muslim scholars' minds right from the very beginning of the Qur'an's revelation itself. (Ayduz,1998: 630) Prophet Muhammad s.a.w who interpreted the Qur'an from all angles enjoins upon his followers to be sensitive to the environmental conditions. He has invited man throughout his sayings and deeds to respect, protect, conserve and care for plants and animals, earth, water, fire, and air. This has proven him to be a pioneer of environmentalism who advocates environmental protection, conservation, resource management and sustainable use. (Muyibi et.al, 2010: 31)

It is observed that the earth and all other environmental components are crucial for sustaining human's life. This sustenance stretches from food resources in the form of biological diversity, land for agriculture, energy resources for transportation and industrialisation, absorption of carbon dioxide and exuding oxygen by green vegetation. Despite all these crucial services, the environment has been exploited and degraded uncompromisingly. Over exploitation of the environment and its natural resources are unfortunately justified by nations for the purpose of economic and social development. As a result, these activities have severely polluted the environment and led to global warming that gives adverse consequences onto humanity and biodiversity. This threat needs to be addressed in a holistic manner that takes ethical dimension as a priority to solve anthropogenic factors that have degraded the environment.

For this purpose, the researchers attempted to explore the Qur'anic discourse on the immense values of biodiversity to humanity. We begin with a preamble discussion of the biodiversity concept and some pressing contemporary issues concerning biodiversity and humanity. This is followed by clarifying the selected Qur'anic verses quoted for the biodiversity significance. It is hoped that Qur'anic messages on this pertinence shall inspire collective participation from world community to appreciate and engage with advocacy efforts to protect and preserve biodiversity thoroughly.

## 2.0 BIODIVERSITY CONCEPT

There are varieties of lives on earth and the biological diversity is commonly referred to as biodiversity. Thus, biodiversity is a term that derives from two words, "biological" and "diversity". (Enger&Smith, 2010: 236) Biodiversity is a broad term used to describe the variety of genes, species, and ecosystems in a region. These include millions of plants, animals, and micro-organisms; the genes they contain, and the complex ecosystems of which they are a part. (Chokkar et. al, 2004: 47) In other words, the number of species of plants,

animals, and microorganisms, the enormous diversity of genes in these species, the different ecosystems on the planet such as deserts, rainforests and coral reefs are all part of a biologically diverse earth. (Anup Shah, 2012)

Most of the world's biodiversity concentrations are in tropical rainforests and coral reefs, which are near the equator. Scientists found that of the entire world's species, only 10 to 20 percent lives in North America and Europe. The Malaysian Peninsular for instance, is identified as biodiversity rich with at least 8000 of flowering plants, while Britain with an area twice as large has only 1400 species. Human life is inextricably linked to ecological services provided by other organisms. Researchers of environmental sciences consider biodiversity as earth capital for soil formation, waste disposal, air and water purification, nutrient cycling, solar energy absorption, and food production all depend on biodiversity. The total value of these ecological services is at least USD33 trillion per year or more than double the total of world GNP. Another invaluable feature of high diversity in the ecosystem is that it may support biological communities, withstand environmental stress better and recover more quickly than those with fewer species. (Cunningham&Ann, 209: 109-110) Basically, biological resources are renewable in that they replace themselves by reproduction, but if overused or misused, populations die. If a species is lost, it cannot be re-created. It is permanently lost as a component of its ecosystem and as a resource to human. (Cunningham&Ann, 2009: 324)

Loss of biodiversity is recognised by scientists as a major consequence of human disproportionate domination of the earth resources. Many species around the world are now threatened by climate change, and some are becoming extinct in part because of the climate crisis and in part because of human encroachment into their habitats. In the West America for example, the destructive spread of pine beetles used to be slowed by colder winters that reduced their numbers seasonally. Currently, with fewer days of frost, the pine beetles are flourishing and the pine trees are being devastated. (Al Gore, 2007: 154) In South America, a serious destruction of the Amazon rain forest that is wrapped by wetlands has become a crisis. This phenomenon has caused extinction to many species and simultaneously adds more CO<sub>2</sub> to the atmosphere. Wetlands are carbon sink where there is a huge amount of carbon storage to regulate the ecosystem. Therefore, when such wetlands are destroyed, the GHGs emissions occur and this negatively impacts the environment and its habitats. Wetland destruction is a potential catalyst for the acceleration of global warming. This problem disallows wetlands to play its role in sucking up the atmospheric CO<sub>2</sub> and storing them in their biomass. To preserve the

wetlands is in fact a significant step towards addressing global warming and loss of biodiversity. (Ansari & Oseni, 2012: 24)

### 3.0 BIODIVERSITY IN THE LIGHT OF QUR'ANIC DESCRIPTION

People across the world have come to realise and recognise the importance of natural environment, its biological diversity and the need for sustainability. However, human greed and self-indulgence still lead some of them to exploit animals and plants until it affects the precarious balance in nature. Apart from climate change, the other threats that terribly reduce biodiversity are habitat loss, overexploitation and consumption of exotic species, predator and pest control services. The primary activities that result in habitat loss are farming, forestry, grazing by livestock, modification of aquatic habitats, and land conversion to urban and industrial setting. (Enger&Smith, 2010: 242) In fact, biodiversity protection and conservation is not a new practice for the early Muslim generations. For example, during the lifetime of the Prophet Muhammad *s.a.w.*, the protected areas were well established and managed to reduce overgrazing. The Arab people traditionally used to protect natural habitats and prohibit hunting during specific months of the year, which was known as '*al-Ashhur al-Hurum*'. (2:194)

Also, they developed a kind of protected areas, which were called '*hima*'. The Prophet *s.a.w.* changed the ancient private *hima* system, which belonged to the selected powerful individuals, into a legal system that protected the natural areas for more communal benefits. These practices were followed by the succeeding Caliphs. (Mu'inul Islam, 2004: 76) To further appreciate the Islamic heritage of biodiversity conservation and protection, the following sub-topics highlight Qur'anic descriptions on the valuable contribution of animals and plants domain to humanity.

### 4.0 ANIMALS IN THE QURAN

Qur'an is full of verses exhorting mankind to study nature and the life of animal kingdoms takes a very important emphasis in such citations. There are more than two hundred passages in the Qur'an dealing with animals and six *surah* bear the names of animals as titles such as The Cow (*Surah al-Baqarah:2*), The Herding Animals (*Surah al-An'am:6*), The Bee (*Surah al-Nahl:16*), The Ant (*Surah al-Naml: 27*), The Spider (*Surah al-'Ankabut: 29*), and The Elephant (*Surah al-Fil: 105*). (Eisenstein, 2001: 1/93) This highlight leads us to think on the secret life that surrounds the animals' nature. Why should we

ponder upon their existence? What are the interesting aspects about animal's kingdom? In fact, we may discover countless answers for such questions if we glance at the text books of Zoology, Biology, Environmental Science and so forth that list down lots of wonderful entries on animal's subject. As Muslims, we should be more attentive to the description in the Qur'anic verses on animals to derive many lessons and wisdom taught by Allah *s.w.t*.

Animals are accorded special regard in Islam. Allah *s.w.t* designs their livings to have a group formation just like mankind has. The Holy Qur'an reveals this message that each species is an '*ummah*'<sup>1</sup>, which has their own structure of organization, "There is not an animal (that lives) on earth, nor a being that flies on its wings, but forms part of communities like you." (6:38) It is a striking point that the Qur'an describes animals to have their own communities, and they are in fellowship with one another. The story of the great flood which has occurred during the time of the Prophet Nuh *a.s* brings to light the Qur'anic perspective on the significance act of preserving animal species as much as the life of believers at that time. Allah *s.w.t* gave a command to the Prophet Nuh *a.s* to bring along on the ark both male and female animals, "At length, behold! There came Our command, and the fountains of the earth gushed forth! We said: "Embark therein, of each kind two, male and female..." (11:40) This verse indicates that the preservation of animal species and their regeneration are of paramount concern in Islam. (Masri, 1992: 15)

The common Arabic word for 'animal' *hayawan* occurs only once in the Qur'an. Nevertheless, it refers to life in the next world, not an animal in its literal meaning. (29:64) The Qur'anic term for animal in general and the land animal in particular is *dabba*, which is mentioned 18 times. The most frequent animal term to be found in the Qur'an is *an'am*, "gregarious or herding animals" (32 occurrences), and there are three places of its synonym, *bahimat al-an'am* referring to livestock and large domestic animals. Its singular form *na'am* takes place only once. (5:95) The Qur'an mentions that Allah *s.w.t* with His Supremacy is capable of creating any kind of animals such as the ones that creep on their bellies, walk on two legs or walk with four legs. The Qur'an indicates this variety as follows, "And Allah has created every animal from water; of them there are some that creep on their bellies; some that walk on two legs; and some that walk on four. Allah creates what He wills for verily Allah has power over all things." (24:45) Allah *s.w.t* states in the Qur'an, domestic animals as well as those driven to pasture like sheep, goat, camel, and cattle represent the wealth of men. (16:5-8)

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<sup>1</sup> *Ummam* is referring to the groups of animals of the same species living together.

The Qur'an also mentions about wild animals. Allah *s.w.t* refers to wolf (*dhi'b*) and apes (*qirada*) three times while snake (*thu'ban, hayya*) and elephant (*fil*) are only referred to once. There are four references to quarry (*sayd*), i.e., an animal being hunted, one indication to lion (*qaswara*), swine (*khinzir/khanazir*), dog (*kalb*) (5:4; 7:176), and one occurrence of a general term for 'beast of prey' that is *sab'u*. (Eisenstein, 2001: 95) Nowadays, men have transgressed Allah's rules over animals for their own justification. In industrialised countries, wildlife-related activities have become a major source of income. Hunting activities for the ten million hunters in Europe generate a huge profit of almost 10 billion Euros. Europe is the world's largest importer of venison i.e. 50,000 tons per year. Similarly, hunting activities create more than 700,000 jobs in the United States. (Chardonnet et. al, 2011)

In Africa, the bush meat<sup>1</sup> trade is generating hundreds of millions of dollars. Congo Basin for example, exploits wild animal meat for trade and regional consumption that could reach 4.5 million tons annually. The demand for bush meat in Western and Central Africa could reach up to four times the demand for bush meat in the Amazon Basin. A considerable increase of bush meat consumption in many parts of the world, especially Central Africa and the Amazon Basin, has caused the emergence of zoonotic diseases from wild animals. The emerging of infectious disease has a major effect on human health and can create tremendous loss in the economic sector as well. (Chardonnet et. al, 2011)The same state of affairs happened in Malaysia too. Wildlife authorities raided ten restaurants in Kahang, Johor for involving in exotic foods business that serves more than 300kg meat of several wildlife species. The items seized were 152 water monitor lizards, 8 large flying foxes, 11.35kg of wild boar meat and 4.5kg of deer meat. Hunting wildlife for bush meat can be one reason to cause loss of predators such as leopards, golden cats, large snakes and birds of prey that depend on them for food. This loss also gives impact for seed dispersing animals that play a key role in determining tree composition and distribution which may, in the long run, possibly lead to loss of many plant species that consequently alter both the structure as well as function of the forest and potentially cause irreversible ecological effects globally. Regrettably, short-term economic benefits gain from the commercial bush meat trade today is able to cause vulnerable long-term ecological impact for future generations.

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<sup>1</sup> In Africa, the forest and shrub land is often referred to as 'the bush', thus wildlife and the meat derived from that wildlife is locally called 'bushmeat'. These wild animals are generally found in tropical areas like South America, Asia and Africa. <<http://www.bushmeat.org/sites/default/files/BCTFBRIE.pdf>> (accessed 23 March, 2012).

The above phenomena give alerts to our mind to grasp the message of Divine instructions in the Qur'an concerning *halal* and *haram*<sup>1</sup> meats that are permissible and not permissible to be consumed. One of the noteworthy points that we may derive from this ruling is to recognize the function of feeding relationships between a predator and a prey is very important for the perpetual cycle of energy flows in an ecosystem. Islam also emphasizes the importance of maintaining a harmonious balance in environmental components under the concept of *al-mizan* (balance). Based on this concept, Allah *s.w.t* has given to all His creatures their own assigned roles. Therefore, if entity of this natural operating system is disturbed, it will cause disorder to the functional units of the ecosystem itself. In short, no organisms including animal can live apart from its environment or from interacting with their species.

Allah *s.w.t* states clearly in the Qur'an that He has subjected His whole creation including animals to men, "And cattle He has created for you (men): from them ye derive warmth, and numerous benefits, and of their (meat) ye eat. And ye have a sense of pride and beauty in them as ye drive them home in the evening, and as ye lead them forth to pasture in the morning. And they carry your heavy loads to lands that ye could not (otherwise) reach except with souls distressed: for your Lord is indeed Most Kind, Most Merciful. 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." (16: 5-8; 6: 142; 22:27; 40:79-80) These verses describe three main functions of animals; to carry loads or means of conveyance to warm for garments and to feed men. In addition, these domestic animals give pleasure to their master when looking at them as they are brought home or driven out to pasture. Thus, it seems to have also been God's intention to create animals for the aesthetic enjoyment of men. All of these benefits exemplify God's favour for humanity.

With regard to flying animals or birds, there are 24 occurrences of the general terms *tayr* and *taair* in the Qur'an. The Qur'an particularly emphasizes the marvelous flight of birds, which are kept in the air by God (16:79, 67:19). There are also some specific types of birds identified in the Qur'an as *salwa* (quail), *hudhud* (hoopoe), *ghurab* (raven), and a flocks of birds called *abil*. The rest of the animals that are mentioned in the Qur'an are ant (*naml*), fly (*dhubab*) (22:73), gnat (*ba'uda*) (2:26), lice (*qummal*), locusts (*jarad*), moths/butterflies (*farash*), bees (*nahl*), spider (*ankabut*), termite (*dabbat al-ard*), fish (*hut/hitan*), *nun* (fish that swallowed the Prophet Yunus *a.s*), and frogs (*dafadi*). Several Qur'anic *ayat* also make reference to animals' body parts such

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<sup>1</sup> The Qur'an has explicitly mentioned the *haram* meats to be consumed by Muslims (Surah *al-Nahl* (16):115, Surah *al-An'am* (6):145, Surah *al-Maidah* (5):3, Surah *al-Baqarah* (2):173).



as wings, claws, trunks, and feathers. (Eisenstein, 2001: 95) There are also passages in the Qur'an referring to animal products like pure milk from the belly of animals (16:66, 23:21, 36:73), skins (16:80), fresh meat of fish (16:14) and the healing power of honey (16:69). Those *ayat* highlight how animals give benefit to man and stand as proof (40:80-81) of God's benevolence toward mankind.

The Qur'an talks about animals such as camels, cattle, birds and even gnat to attract the attention to these remarkable creations and call people to contemplate about their structure, properties and benefits. Nevertheless, some people are negligence and ungrateful to Allah's bounties of the animals' benefits and services. Animals have died and are dying for some reasons to provide fur coats and ornaments for the wealthy. They have been hunted all over the world for the sheer sport and morbid pleasure of man. In order to meet the ever increasing demands and desires, greedy men have begun to use technological might and scientific advancements to transform increasing numbers of animals into food products. In laboratories, scientists are producing new genetic variations that may be amenable to low cost intensive methods of rearing. Many stock-keepers seem to be more concerned with profits than the moral principles of animal husbandry and simply look upon their livestock as meat as well as milk machines. (Masri, 1992: 2)

Profiling the relationship between humans and animals, the Qur'an presents a picture that is free of dominance and exploitation. Man, as the master and keeper of animals, is taught to live in harmony with them and treat them with respect. The human and animal roles in this world are complementary and inter-dependent. (Al-Ghazali, 2007: 278) The Prophet *s.a.w* enjoined the protection of the animals and birds that they should not be ill-treated, but should be well looked after, kept clean and employed in work suitable to their natures. Moreover, they should not be loaded with burdens greater than they can bear. He put a ban on hunting and forbade the arbitrary hunting of animals for pleasure. (Mu'inul Islam, 2004: 77)

The following Qur'anic *ayat* apply verbatim to the people who are exploiting wastefully the resources of nature and are inflicting destruction to His creatures as Allah *s.w.t.* says: "When he turns his back, his aim everywhere is to spread mischief through the earth and destroy crops and cattle. But Allah loveth not mischief". (2:205-206) These *ayat* reveal that brutal treatment to animals has also occurred during the Prophet Muhammad's *s.a.w* period. In our time, this incident keeps to be worsening. As to illustrate, it takes various forms and excuses on justifying man's behaviour upon animals, from sheer overloading of beasts of burden to downright, neglect and abuse as well as

windowless houses of factory farms, which denies their rights of the companionship of their own community. In a very distinctive narrative style, the Holy Qur'an reveals that animals also have a faculty of speech. There was an incident between the Prophet Sulayman a.s. and his troop with a group of ants. The Prophet Sulayman a.s. understood the speech of an ant and advised his fellows to be cautious. The Qur'an has recorded that ants can speak to each other as Allah s.w.t says, "At length, when they came to a (lowly) valley of ants, one of the ants said: 'O ye ants, get into your habitations, lest Sulayman and his hosts crush you (under foot) without knowing it'. So he smiled, amused at her speech; and he said: O my Lord! so order me that I may be grateful for Thy favours ...". (27:18-19) The previous Qur'anic passages reveal to us that animals in reality possess highly developed senses and perceptions in their social interrelationships. Moreover, every single thing in creation glorifies and praises God. Out of the many verses on this attribute, we may refer to the following verse: "Seest thou not that it is Allah Whose praises all beings in the heavens and on earth do celebrate, and the birds (of the air) with wings outspread? Each one knows its own (mode of) prayer and praise. And Allah knows well all that they do". (24:41)

In another occasion, Allah s.w.t illustrates in the Qur'an that whenever Prophet Dawud a.s. praises and adores His Magnificence, the hill and the bird used to join him along, "it was Our power that made the hills and the birds celebrate Our praises with Dawud..." (21:79) Nevertheless, it is human's limitation that prevents them from visualising metaphysical attribute like this. Allah s.w.t asserts firmly in the Qur'an, "The seven heavens and the earth, and all beings therein, declare His glory: there not a thing but celebrates His praise; and yet ye understand not how they declare His glory..." (17:44) Izzī Dien reflects upon this Qur'anic verse that Islam preserves and protects the environment for it is the abode of all God's creatures that praise Him. He indicates that some scholars reject such interpretation of the above verse, maintaining that the essence of the praise referred to is merely a metaphor, indicating the fulfillment of the Divine systems. However, one might argue that the essence of the praise referred to is unknown to human beings, and therefore there is no proof to support the metaphoric claim. Moreover, in the Qur'an it is quite clear that a form of praise takes place that is not understood by humans. This contention is supported by renowned *mufassir* such as Ibn Kathir. In his commentary, he explains, "this verse means that all creatures praise God since the words 'the seven heavens and the earth and all beings therein' includes all creatures, but men cannot understand the praise of these creatures, since it is in languages other than their own". (Izzī Dien, 2000: 68-69) Sayyid Qutb also supports such a view when he described the monumental relationship between

the Creator and the creations in this way, “what a beautiful and unique scene it is if we imagine every stone and pebble, every leaf and flower, every plant and fruit, every creature and each person, every single creature on land, in water, and the occupants of the sky, each and every one praising God in all His Glory.” (Qutb, 2001: 4/2230)

Izzi Dien asserts that if one can ponder upon this beautiful natural setting as interpreted by Sayyid Qutb, it will lead him to understand how serious a crime it is to harm the environment and any of its creatures that glorify their Creator. Prophet Muhammad *s.a.w* once saw some people sitting upon their animal mounts. He told them to either ride on them or to leave them alone but not to use them as chairs to sit on while they watched the streets and market. He added that some of these animals were better than those who rode on them, for they remembered God more. (Izzi Dien, 2000: 68-69)

For all intents and purposes, animals provide sustenance for plants, for one another, and for man. Their dung and their bodies enrich the soil and the seas. They contribute to the atmosphere by respiration and their movements and migrations contribute to the distribution of plants. They provide food for one another and provide mankind with leather, hair and wool, medicines, meat, milk, and honey as well as for means of conveyance. (Bakadar et. al, 1997: 81) For these plentiful services and resources that animals provide to mankind and our ecosystem, it should be our concern to treat them humanely, with justice and mercy. In Islam, there is no such concept that man’s dominion over animals gives privilege or freedom for him to inflict any harm to them. Allah *s.w.t* has not made any of His creatures worthless, and therefore warrants special respect. As a living genetic resource, each species and variety of animal kingdom is unique and irreplaceable. Animal rights are upheld by Islam and need to be observed by Muslims in every circumstance. For this reason, killing animals unnecessarily is against the Qur’anic teachings. It is not only reducing the number of creations that adore Allah, but also causing disorder for them to function in harmony with God’s law. (Ansari & Oseni, 2012: 20)

Though extinction of a species is part of natural process, man has considerably caused elimination of animal species through hunting, deforestation, destruction of habitats; flatten the hills and mountains, changing the courses of river, consumption of exotic species, over fishing, trading and use of certain products such as hides, skin, fur, and leather for commercial purpose. In this regard, the CITES<sup>1</sup> along with other international conventions and local laws made there under, is operative for animal’s protection by declaring

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<sup>1</sup> Convention on International Trade on Endangered Species of Wild Fauna and Flora (1960).

international trade of certain species as illegal. The CBD<sup>1</sup> as well maintains the conservation of biodiversity worldwide. From the previous highlight of Qur'anic *ayat*, modern concepts for conservation of wildlife and rights to animals are present in Islam, even in a more uncompromising way. (Ansari & Parveen, 2000: 40/137)

## 5.0 PLANTS IN THE QUR'AN

In addition to the essential values of animal species, there are many Qur'anic verses that call for attention to the vital roles play by plants in sustaining the earth inhabitants; man and animal as well as regulating the climate of atmosphere. One third of the earth surface is covered by trees. From the environmental science description, plants are able to retain water supplies, soak up carbon dioxide and other gases, and therefore maintain a natural balance in the world's temperature and climate. (Masri, 1992: 11) For forests, when there is rain, they hold much of the rainfall to the soil through their roots. They conserve the water by detaining its runoff. In this way, underground water as the common source of natural drinking water is replenishing. (Fiset, 2012)

Allah *s.w.t* reveals the diverse types of plant life in the Qur'an, "We have spread it out, and set thereon mountains standing firm, and produced therein every kind of beautiful growth (in pairs). To be observed and commemorated by every devotee turning (to Allah). And We send down from the sky rain charged with blessing, and We produce therewith gardens and grain for harvests; and tall (and stately) palm-trees, with shoots of fruit-stalks piled one over another. As sustenance for (Allah's) servants..." (50: 7-10) Such picturesque verses have inspired a number of Islamic gardens embodying a physical expression of heaven on earth and have also influenced landscapes design around the world. As for reference, the UNESCO office was working on the creation of two botanical gardens in the UAE and Qatar in order to protect the Arabian Peninsula's biodiversity, which was under threat by the region's rapid development. This project was identified as a "Qur'anic Gardens" because it takes account of plant species mentioned in the Qur'an and its landscape features main aspects of botanical gardens found in the Islamic architectural tradition. The elements of the garden have been drawn with reference to over 150 verses of the Qur'an mentioning the "Gardens of Paradise". The garden hosts samples of regional flora mentioned in the Qur'an and medicinal plants, which have been used in the Islamic traditions and were cited by the Prophet Muhammad *s.a.w*. This "Qur'anic Gardens" were built on the strong links

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<sup>1</sup> Convention on Biological Diversity (1992).

between cultural heritage and biological diversity conservation model as illustrated in the Qur'an. (Bibbo, 2008)

In another Qur'anic *ayah*, Allah *s.w.t* mentions that crop was created for animal and human sustenance, "And do they not see that We do drive rain to parched soil (bare of herbage), and produce therewith crops, providing food for their cattle and themselves?" (32:27) There are various kinds of plants mentioned in the Qur'an such as olives, grapes (13:4; 16:11) pomegranates, dates, banana (56:29), fig (95:1), cucumber, garlic, lentil and onion (2:61), that were known to Arabs of that time and on which they used to live. Basically, all plants in their growth processes and appearances have similarities. However, every single fruit is distinctive in size, color and other proportions even within its own kind. The emphasis of "diversity within unity" in biodiversity is a significant Qur'anic manifestation of creations that points to the One All-Mighty and All Wise Creator. How are diversity and unity interwoven in this universe? Those who contemplate and think can perceive beyond the apparent features of the natural laws and universal orders behind them to recognise the perfect arts of Allah *s.w.t* to form all creations distinctively. (Osman, n.d: 47)

Other than their role for sustenance, plants also have additional functions such as to moderate the climate and produce oxygen, which we breathe. The Qur'an underlines the significant element of 'green' in plant, as Allah *s.w.t* says, "The same Who produces for you fire out of the green tree, when behold! Ye kindle therewith (your own fires)!" (36:80) Likewise, Allah *s.w.t* discloses in the Qur'an the importance of trees as one of the energy resources, "See ye the fire which ye kindle? Is it ye who grow the tree which feeds the fire, or do We grow it? We have made it a memorial (of Our handiwork), and an article of comfort and convenience for the denizens of deserts." (56:71-73; 36:80) From the scientific point of view, the green lush wooded area forest in the tropical region works as a huge sink for CO<sub>2</sub> and stores it in their biomass. However, when they get dry, they can easily catch fire and emit relatively more greenhouse gases to the atmosphere and aggravate the phenomenon of global warming. Hence, it is vital to practice sustainable forests management for it helps mitigate the greenhouse gasses emissions effectively as they absorb carbon dioxide naturally. (Ansari&Oseni, 2012: 153)

In addition to the above benefits, plants are also of immense values for medicine, oils, perfumes, waxes, fibers, timber, and fuel. Regrettably, in modern time trees are being depleted at a very fast rate. The area of the world's tropical rainforest that is being destroyed in Africa, Asia, and Central and South America is estimated at about 14-20 million hectares every year. For Europe, it has a total forest area of 141 million hectares, but 50 million have been

damaged by acid rain. In most cases, trees were cut down rigorously by logging companies to fulfill the demands of the wood market. The cutting down of trees for lumber that is used for building materials, furniture, and paper products have given major impact on forest life. Besides, forests are excessively cleared to accommodate expanding urban areas or to provide extra land for cultivation and pastures for cattle in order to export their meat to meet the demand of the importing countries. The rapid destruction of the rainforest across the world does not give a chance to the local wildlife and trees to regenerate and sustain themselves. As a result, deforestation leads to loss of wildlife forever. (Masri, 1992: 40)

From the Qur'anic point of view, plants are like other components of the nature, which are prohibited to be destroyed and uprooted unnecessarily. Allah *s.w.t* uses the word *fasad* (disorder, mischief) in the Qur'an to explain the act of killing animals and destroying trees unjustly. The Qur'anic verse depicts this particular malevolence as follows "When he turns his back his aim everywhere is to spread mischief through the earth and destroy crops and cattle. But Allah loveth not mischief." (2:205) In this relation, al-Qaradhawi speaks about *ihsan* (being kind) towards environmental components as he quotes the Qur'anic *ayah* in 2:195; practicing good deed is not constrained towards human being only, for Allah *s.w.t* orders mankind to be kind to every creature including botanical, animal, and inanimate things. (Al-Qaradhawi, 2001: 122) In fact, planting trees has a particular emphasis in Islam. There is a *hadith* that insists on this righteous act. It says that even on the day of resurrection, a person who has a palm shoot in his hand, should make sure to plant it. (Ibn Hanbal, n.d: 12902; al-Bukhari, n.d: 479) This *hadith* indicates that Muslims should sustain the life of plants and not to neglect them to futile. The *hadith* also has a clear message of the sustainable use of forests. In other words, deforestation and reforestation must go together and Islam supports establishment of reserved forests and sanctuaries. (Ansari, n.d: 93)

Having replaced many forests, agricultural sites now cover more of the planet's surface than the forest does. Thirty-eight percent of earth's terrestrial surface is devoted to agriculture, which is more than the area of North America and Africa combined. Agriculture is the most extensive type of human land use and causes tremendous impacts on land as well as ecosystems. The majority of the world's cropland practices, either intensive traditional agriculture or monocultural industrial agriculture, involves heavy use of fertilisers, pesticides, and irrigation, which often causes soil erosion, salinisation and desertification. (Withgott; Scott, 2008: 346) Concerning this matter, there are frequent direct and indirect references to the general concepts of agriculture and vegetation in

the Qur'an as Allah *s.w.t* says, "It is He Who sendeth down rain from the skies: with it We produce vegetation of all kinds: from some We produce green (crops), out of which We produce grain, heaped up (at harvest); out of the date-palm and its sheaths (or spathes) (come) clusters of dates hanging low and near: and (then there are) gardens of grapes, and olives, and pomegranates, each similar (in kind) yet different (in variety): when they begin to bear fruit, feast your eyes with the fruit and the ripeness thereof. Behold! In these things there are signs for people who believe." (6:99)

Nurdeng Deuraseh explains that Islam enjoins mankind to live in a healthy environment through protecting and preserving trees and plants. He maintains that *filahah* or *zira'ah* (farming) was recommended by the *Shari'ah* and practiced by many renowned companions of the Prophet *s.a.w* and traditional scholars dating back to 'Ali bin Abi Talib who was known for his intense interest in planting trees activity. The Prophet *s.a.w* once said, "There is none amongst the Muslims who plants a tree or sow seeds, and then a bird, or a person or an animal eats from it, but is regarded as charitable deeds for him." (Al-Bukhari, 1998: 3/130) Hence, it is human's obligation to conserve and develop them both for their own sake and for their value as unique and irreplaceable genetic resources for the benefit of mankind. Planting trees as assured by the Prophet Muhammad *s.a.w* is a virtuous act that holds reward for *sadaqah jariyyah* (everlasting rewards), i.e., a person would keep on accumulating rewards even after death. For the worldly benefits, planting trees in abundance can improve the quality of air and reduce the impact of global warming.

There are many other Qur'anic *ayat* exhorting believers to reflect on plants, vegetations, and fruits as Allah *s.w.t* says in the Qur'an:

Or who has created the heaven and the earth, and who sends you down rain from the sky? Yea, with it We cause to grow well-planted orchards full of beauty and delight: it is not in your power to cause the growth of the trees in them. (27:60)

It is He who produces gardens with trellises and without, and dates and tilth with produce of all kinds, and olives and pomegranates similar [in kind] and different [in variety]. Eat of their fruit in their season, but render the dues that are proper on the day that the harvest is gathered. And waste not by excess: for Allah loves not the wasters. (6:141)

The above *ayat* describe the botanic aspect of plants that can be divided into wild and cultivated. Likewise, the Qur'an repeatedly draws our attention to the fact that plants and trees are living beings by emphasizing that they too have

been created in pairs as male and female. Like human beings and animals, plants have reproductive functions as well to keep their species going. Allah *s.w.t* states in the Qur'an, "He who has made for you the earth like a carpet spread out; has enabled you to go about therein by roads (and channels); and has sent down water from the sky. With it have We produced divers pairs of plants each separate from the others." (20:53) Wild plants in the forests are known as habitats and shelters to millions of animal species too. As to illustrate, the Qur'an narrates to us how bees make their home at the wooded areas, "And thy Lord taught the bee to build its cells in hills, on trees, and in (men's) habitations; then to eat of all the produce (of the earth), and find with skill the spacious paths of its Lord, there issues from within their bodies a drink of varying colours, wherein is healing for men. Verily in this is a sign for those who give thought." (16:68-69) Indeed, the vast diversity in the universe and the intact coordination of its laws and phenomena provide a constant manifestation of God's power and oneness. On these grounds of intact coordinated laws of nature, the Qur'an draws attention to the God's signs in physical realm in order for mankind to understand Signs behind the science and build faith in the One God.

It is observed that scientific discoveries today support evidence that God in His great wisdom has exalted purposes in biodiversity other than the service of man, and greater than the service of man. Mountains, for example, are one of the indispensable earth's components that are frequently mentioned in the Qur'an carrying many crucial roles. Allah *s.w.t* says, "And made therein mountains standing firm, lofty (in stature); and provided for you water sweet (and wholesome)?" (77:27) In another place the Qur'an reads, "It is Allah who made out of the things He created, some things to give you shade; of the hills He made some for your shelter (*aknan*)..." (16:81) Hills, mountains, caves, and trees provide people with their natural shade and shelter while the human mind, gifted by God, can design and build walls and roofs for their settlement. (Osman, n.d: 32) It has many other functions and utilities like providing sources of water, minerals, agricultural products and a major reserve for the world's biodiversity. In addition to the above benefits, mountains stand as a crucial factor in determining climates of regions (Sharma, 2011). Allah *s.w.t* says:

*"And the earth have We spread out, and placed therein firm hills, and caused each seemly thing to grow therein all kinds of things in due balance. And We have provided therein means of subsistence for you and for those for whose sustenance ye are not 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. And We send the fecundating winds, then cause the rain to descend from the sky, therewith providing you with water (in abundance), though ye are not the guardians of its stores.” (15:19)*

The above Qur’anic verse exemplify the enormous environmental diversity to fulfill man’s welfare, which is an evidence of the Creator’s greatness that determines and ordains all things. (Bakadar et. al, 1997: 72) Nevertheless, man’s various kinds of food and needs of life are being risked for loss and destruction because of the ongoing activities that cause adverse impact on natural environment. The above verse (15:19) reminds us that biodiversity is also meant for the sustenance of other innumerable creatures of which man is incapable of providing anything. The verse also indicates that for Allah *s.w.t* the treasure of natural resources are inexhaustible, but in His divine plan He is creating and regulating biodiversity in a balanced and ascertainable measure. However, depletion or rather destruction of biodiversity can seriously take place when humans’ greed and arrogance cause them to blindly degrade the naturally sustained environment, which would endanger the life of innumerable organisms including humanity at large. (Rahman, 2007: 104-105; Agwan, 1999: 11-24) Bakadar emphasizes that the dwellers of the forest, if left on their own, generally adapt themselves to those laws and learn to abide by them. Humans seldom see environmental damage being done by animals living in their natural habitats like the tropical forests, oceans or hills. It is only the humans who can choose to break those laws and disturb the balance of nature. (Bakadar et. al, 1997: 82) Therefore, any ill-treatment and destruction of animal or plant species by man can in no way be justified.

## 6.0 CONCLUSION

To sum up, biodiversity is a natural capital for all humanity to survive and have a convenient life. Man gets varieties of crops, fruits and vegetables for his food and above all water and oxygen from the ecosystem services. He gets milk, honey, oils, medicines etc. from animals and plants. Similarly, man gets wool for his garments from sheep, skins of animals for tents, shoes, bamboos, and woods from plants for constructing houses and many other useful components to fulfill their basic needs of life and comfort as well. It is observed that the Qur’an indicates the relationship between man and biodiversity as a big concern that have a vertical link to Allah *s.w.t* as the Only God, the Creator and Sustainer of this universe. The Qur’an has also emphasised that biodiversity

is a Divine provision for sustaining man's life. Allah s.w.t has made the earth as a garden of biodiversity and man is naturally part of it. Therefore, all species including man are interdependent on each other. Regrettably, many people, however, are over exploiting the natural resources. Unless some conservation measures are taken to maintain biodiversity, the earth will one day be unsuitable for habitation not only for other species, but also for mankind. Now, it has become an urgent need for humanity to impose some restraint on themselves from exploiting biodiversity wildly. In this regard, people need to be nurtured with the caring attitude and accountability to protect and conserve biodiversity from the very young age. The researchers believe that a proper education for imparting this knowledge at schools and institutions of higher learning in the Muslim world is vital in order for them to recognize the immense values of biodiversity from the Qur'anic worldview. In due course, environmental negligence shall be addressed and compassionate individual towards animals and plants would inspire all society to embrace a harmonious living attitude as it is revealed in the Qur'an and Sunnah teachings.

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