

Origin of Natural Hazards and Disasters in the light of the Holy Qur'an

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Abstract: Natural hazards are the natural process which has potential to cause damage to human lives, health, economy and the environment. However, when a hazard hit a community and destroys people's lives, livelihoods and economy, then it becomes a disaster. Hazards and disasters are divided into geological, meteorological, hydrological, and biological categories based on what they caused. There are several verses in the Holy Qur'an which throw light on different aspects causing natural hazards and disasters. There are almost 1/8th of the Holy Qur'an, refers to nature phenomena. So, there is a relationship between the teaching of Holy Qur'an and science about the concepts of hazards and disasters. The holy Qur'an comprises much more precise details than many scientific discoveries. The Holy Qur'an repeatedly and consistently encourages the Muslim community to observe, explore, investigate and understand the reality. The importance of knowledge in Islam for mankind is not just for the sake of knowledge, but for a better understanding of himself and the universe as well.

This paper is divided into five sections. Each section has supported with scientific research studies and verses of the Holy Qur'an. Section one of the paper gives introduction and importance of the study. Section two discusses creation of the earth and its different spheres. Section three describes classification and types of hazards comprise details of lithospheric (Geo-hazards) atmospheric (Meteorological hazards), hydrospheric (Hydrological hazards) and man-made (Anthropogenic hazards). Section four deals motion of heavenly bodies with respect to earth while section fifth is given to conclusion. This study is an attempt to establish a platform for those who are desirous to study science and other natural phenomena with a perspective of Islam and the Holy Qur'an.

1. Introduction

Natural hazards are the natural process which has potential to cause damage to human lives, health, property and the environment. However, when a hazard hit a community and destroys people's lives and livelihoods, then it becomes a disaster (Ahrens, C. D. et al., 2011). Every year, disasters affect millions of people, resulting in a high death toll, negative economic effects, and displacement of whole society (Bell, F. G., 2003). These losses and impacts go beyond what the affected community or society can handle with its own resources. As the scientific community, indigenous knowledge and community case studies are busy to carry out researches to identify the origin, causes, impacts and other aspects of hazards and disasters. Similarly, the Holy Qur'an also has been pointed out different aspects of hazard, disasters and the environment.

The Holy Qur'an is the foundation of the all Muslims' believes and faith. All Muslims are believed that the holy Qur'an covers guidance not only for Muslims but for human being, all time and every age. The Holy Qur'an repeatedly and consistently encourages the Muslim Community to observe, explore, investigate and understand the reality. Many verses of the Holy Qur'an could better be understood with the increase of knowledge about the Universe and the environment.

2. Creation of the Earth

The biggest rocky object in the Solar System is Earth. Smaller entities, proto planets, and planetesimals that themselves had formed by the condensation of solids from the same nebula of gas and dust that gave rise to the Sun contributed to its formation some 4.5 billion years ago (Woolard, E. W., 1953). Since then, it has changed as a result of the separation of the biosphere, the atmosphere, the seas, the crust, the mantle, and the core (Pepin, R. O., 1991).

The "earth" is derived from Arabic word "ارض" which has been used by the Holy Qur'an in feminine gender in several places with different meanings. Several theories and concepts have been put forward by the earth scientists about the formation and origin of the earth. After long researches it has been agreed upon that six evolutionary stages are involved in the formation of this universe (Roger P. J., 2008). The widelyaccepted theory known as the 'Big Bang theory'.

For the formulation of this theory, astrophysicists and astronomers have collected experimental and observational data for several decades. According to this theory initially the universe was one huge mass named it Nebula. After that a 'Big Bang' Separation of masses took place and resultant Galaxies were formed which further divided and re-divided and shaped to the sun, different planets, stars, and moons etc. On the other hand the Holy Qur'an also comprises many verses, about the creation of this universe:

"Do not the Unbelievers see that the heavens and the earth were joined together (as one Unit of Creation), before we clove them as under?"[Al-Qur'an 21:30]

The modern cosmologists and other scientists are of the view that, long long ago, the whole universe was just like cloud of 'smoke' consists of highly dense, hot gaseous and opaque composition(Lodders, K., 2003).

The Qur'an referred to this as:

ثُمَّ اسْتَوَىٰ إِلَى السَّمَاءِ وَهِيَ دُخَانٌ فَقَالَ لَهَا وَلِلْأَرْضِ ائْتِيَا طَوْعًا أَوْ كَرْهًا قَالَتَا أَتَيْنَا طَائِعِينَ (سُورَةُ فَصَّلَتْ: 12)

"Then He turned to the heaven when it was smoke..."

The Holy Qur'an has revealed this fact centuries before. The Holy Qur'an repeatedly says that there are six stages of Eras in which universe including the earth was formed. For example:

﴿الَّذِي خَلَقَ السَّمَوَاتِ وَالْأَرْضَ وَمَا بَيْنَهُمَا فِي سِتَّةِ أَيَّامٍ ثُمَّ اسْتَوَىٰ عَلَى الْعَرْشِ الرَّحْمَنُ فَسَلِّ بِهٖ خَيْرًا﴾ (سُورَةُ الْفُرْقَانِ: 59)

“Who created the heavens and the earth and all that is between them in six Days, and then He mounted the Throne. The Beneficent! Ask anyone informed concerning Him!”

﴿اللَّهُ الَّذِي خَلَقَ السَّمَوَاتِ وَالْأَرْضَ وَمَا بَيْنَهُمَا فِي سِتَّةِ أَيَّامٍ ثُمَّ اسْتَوَىٰ عَلَى الْعَرْشِ مَا لَكُمْ مِّنْ دُونِهِ مِّنْ وَلِيٍّ وَلَا شَفِيعٍ أَفَلَا تَتَذَكَّرُونَ﴾ (سُورَةُ السَّجْدَةِ: 4)

“Allah it is who created the heavens and the earth, and that which is between them, in six Days. Then He mounted the Throne. Ye have not, beside Him, a protecting friend or mediator. Will ye not then remember? ”

﴿وَلَقَدْ خَلَقْنَا السَّمَوَاتِ وَالْأَرْضَ وَمَا بَيْنَهُمَا فِي سِتَّةِ أَيَّامٍ وَمَا مَسَّنَا مِنْ لُغُوبٍ﴾ (سُورَةُ ق: 38)

“And verily We created the heavens and the earth, and all that is between them, in six Days, and naught of weariness touched us.”

Similarly, there are many references in the Holy Qur'an about different spheres of the earth (Lithosphere, Hydrosphere and Atmosphere etc.) and the earth planet itself.

2.1 Spheres of the earth planet

The Earth planet is consists of lithosphere (solid part), hydrosphere (water bodies), atmosphere (blanket of air around the earth) and biosphere (where life exists). These are inter related spheres, therefore, no part of the Earth can be considered in isolation from the other. Based on these parts of the earth natural hazards can be classified in the following types.

3. Types of Natural Hazards / Disasters

Natural hazards and disaster are primarily categorized into geological (Geo-hazards), meteorological, hydrological, and biological hazards.

3.1 Lithospheric (Geological Hazards)

Lithosphere consists of earth's structure and its formation particularly mountains and rocks (Kohlstedt, D. L., et al., 1995). Hazards originated in this part of the earth are called geo-hazards (for example, Earthquake, Volcanoes, Landslide, Weathering etc (Coch, N. K., 1995). Geo-hazard is a relatively recent concept in science that refers to research on natural hazards that affect the earth's lithosphere. It identifies geological, geomorphological, or environmental processes, occurrences, and circumstances that might be hazardous or constitute a threat to the environment or to human life, health, and property (Ayala, A., et al., 2010).

3.1.1 Origin of Geo-Hazards (Mountains)

As the name indicates these hazards are related to hilly areas and therefore, most of geo-hazards are originated in mountainous regions of the world. The world's mountains are delicate eco- and geo-systems that are today experiencing rapid and unprecedented changes brought on by both the growth of (and exploitation by) people and the effects of global climate change (Coppola, E., et al., 2021).

The rapid evolution of mountain environments around the world can be seen in the retreat and thinning of glaciers, the development of glacial lakes, the deterioration of mountain permafrost, the alteration to

mountain stream hydrology, the growth of settlements, and the development of infrastructure (Coch, N. K., 1995).

In the Holy Qur'an the word mountain in both singular and plural form is mentioned in for 49 times. These 49 Qur'anic references can be classified into the following five categories.

3.1.2 Physical and Chemical Aspects of Mountains

Physical and Chemical Aspects of Mountains such as various colors, compositions and origin is also discussed in the Holy Qur'an. These physical and chemical composition of rocks are responsible for geo-hazards phenomena like landslide, volcanic eruption and weathering etc.

The holy Qur'an says:

﴿الَمْ تَرَ أَنَّ اللَّهَ أَنْزَلَ مِنَ السَّمَاءِ مَاءً فَأَخْرَجْنَا بِهِ ثَمَرَاتٍ مُخْتَلِفًا أَلْوَانُهَا وَمِنَ الْجِبَالِ جُدَدٌ بَيْضٌ وَحُمْرٌ مُخْتَلِفٌ أَلْوَانُهَا وَغَرَابِيبُ سُودٌ﴾ (سُورَةُ فَاطِم: 27)

"Have you not seen that Allah makes water to fall from the sky? As a result, we produce fruit in a variety of colours, and amid the hills are streaks of white and red and other colours as well as those that are raven-black".

﴿وَالْأَرْضَ مَدَدْنَاهَا وَأَلْقَيْنَا فِيهَا رَوَاسِيَ وَأَنْبَتْنَا فِيهَا مِنْ كُلِّ شَيْءٍ مَوْزُونٍ﴾ (سُورَةُ الْحَجَر: 19)

"We have spread out the land, built strong hills there, and let anything that seems appropriate to grow there".

﴿وَجَعَلْنَا فِي الْأَرْضِ رَوَاسِيَ أَنْ تَمِيدَ بِهِمْ وَجَعَلْنَا فِيهَا فِجَاجًا سُبُلًا لَعَلَّهُمْ يَهْتَدُونَ﴾ (سُورَةُ الْأَنْبِيَاء: 31)

"In order to prevent the ground from quaking we have placed firm hills therein "and we have created therein ravines as pathways so that perhaps they may find their way."

﴿أَمْ مَنْ جَعَلَ الْأَرْضَ قَرَارًا وَجَعَلَ خِلَالَهَا أَنْهَارًا وَجَعَلَ لَهَا رَوَاسِيَ وَجَعَلَ بَيْنَ الْبَحْرَيْنِ حَاجِزًا ۗ أَعْلَاهُ مَعَ اللَّهِ ۗ بَلْ أَكْثَرُهُمْ لَا يَعْلَمُونَ﴾ (سُورَةُ النَّمل: 61)

"Is not He (best) who made the world a permanent home, positioned rivers in its valleys, established sturdy hills therein, and built a wall between the two oceans?" Exists a deity other than Allah? No, but most of them are ignorant!

﴿وَجَعَلَ فِيهَا رَوَاسِيَ مِنْ فَوْقِهَا وَبَلَكَ فِيهَا وَقَدَّرَ فِيهَا أَقْوَاتَهَا فِي أَرْبَعَةِ أَيَّامٍ سَوَاءً لِّلسَّالِبِينَ﴾ (سُورَةُ فَصَلت: 10)

He blessed it, set strong hills there towering above it, and measured therein its sustenance in four days, equally for (all) who inquire.

3.1.3 Downward extensions of the Mountains:-

A mountain belt is hundreds to thousands of kms long and many tens to hundreds of kms broad.

There was no scientific detail about downward extension of mountains. Mountains were considered the outward heights above the earth surface without mentioning of their sub-surface extensions. However, very lately, since 1960's (plate tectonics) it has proved that the downward portion of mountains are several time greater than their respective heights on the earth surface (Neill, C., et al., 2007). Nevertheless, the Holy Qur'an pointed out this fact of inside mountain extensions fourteen and half centuries ago. There are Qur'anic verses which describe mountain extensions like pegs which are means of earth surface fixation

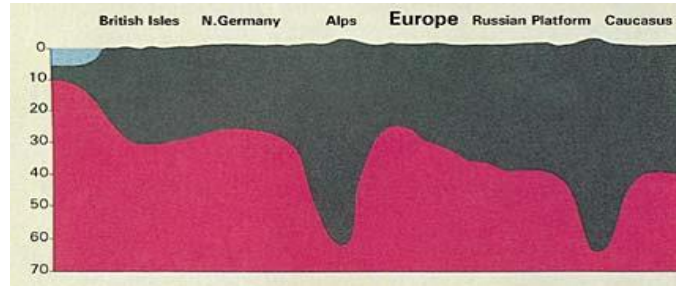
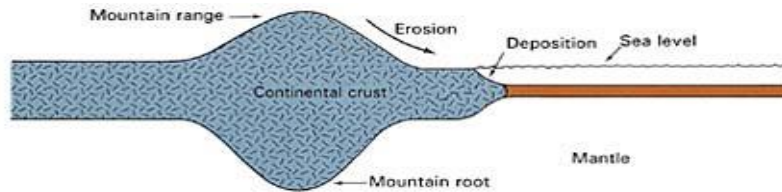


Figure 1:Diagram portion. The mountains are firmly rooted in the earth like pegs.

(Anatomy of the Earth, Cailleux, p. 220.)



For instance the Holy Qur’an says:

﴿الْمَن نَجْعَلِ الْأَرْضَ مِهْلًا وَالْجِبَالَ أَوْتَادًا﴾ (سُورَةُ النَّبَا: 6,7)

“Have we not made the earth as a wide expanse and the mountains as pegs?”

﴿وَأَلْقَى فِي الْأَرْضِ رَوَاسِيَ أَن تَمِيدَ بِكُمْ وَأَنْهَارًا وَسُبُلًا لَّعَلَّكُمْ تَهْتَدُونَ﴾ (سُورَةُ النَّحْلِ: 15)

“And He has set firm mountains in the earth so that it would not shake with you...”

Subaerial and undersea processes such as earthquake, volcanic eruptions, erosion, debris flows, rockfalls, and various forms of landslides and tsunamis are all considered geohazards(Bell, F. G., 2003).

Many volcanoes are built on elevated terrains or mountains (Ayala, A., et al., 2010).

Active volcano chains, like those seen at island arcs, are frequently identified by isolated high mountains that are separated by substantial stretches of low and soft topography(Bostrom et al., 2008).

3.2 Atmospheric (Meteorological Hazards)

Atmosphere is a blanket of air or gaseous sphere surrounding the earth surface(Neil, O., et al., 1998). This is the uniqueness of our planet (earth) because it is the only planet in solar system which has the atmospheric cover (Spiridonov, V., et al., 2011). It was created specially by the Almighty to safeguard this planet from the falling of meteorites and other heavenly bodies. Also this protective cover is of great importance to life and especially for human life (Owen, T., et al., 1995). This atmospheric cover is the source of all waters on the earth (Robert, F., 2001). The hydrological cycle (Evaporation and condensation) cannot exist without it (Lawrence, J. F., et al., 2001).

The process to condense the water vapours present in the atmosphere into liquids is called condensation and necessary for precipitation. Similarly, formation of clouds depends on atmospheric conditions and its instability. This instability of the atmosphere causing variation of temperature and humidity too. Consequently, various level and types of winds, clouds, rainfall and other phenomena come into being. In the result different types of meteorological hazards and disasters (for example, Thunder

storms, cyclones, hailstorm, lightning and drought etc.) occur. The same atmospheric phenomenon has been repeatedly discussed in the Holy Qur'an.

3.2.1 Formation of Clouds

In the atmosphere, of water contents, cloud condensation nuclei, and ice nuclei is associated to cloud formation (Mosso, S. C., 1985). Several factors contribute to ionization of the atmosphere, although cosmic rays are constantly present and their contribution is controlled by the solar cycle (Aplin, K. L., et al., 1999).

Clouds are the major cause of heavy rains which turns into flash and urban floods. With the advancement in modern technology scientists have recently discovered the formation of clouds, its different types, structure and functions by using satellites data, computers soft wares. Whereas, Allah the Almighty has disclosed these information in the Holy Qur'an very early. Allah has said in the Holy Qur'an:

﴿أَلَمْ تَرَ أَنَّ اللَّهَ يُرْجِي سَحَابًا ثُمَّ يُؤَلِّفُ بَيْنَهُ ثُمَّ يَجْعَلُهُ رُكَامًا فَتَرَى الْوَدْقَ يَخْرُجُ مِنْ خَلَاةٍ وَيُنَزَّلُ مِنَ السَّمَاءِ مِنْ جِبَالٍ فِيهَا مِنْ بَرَدٍ فَيُصِيبُ بِهِ مَنْ يَشَاءُ وَيَصْرِفُهُ عَنِ مَن يَشَاءُ يَكَادُ سَنَا بَرْقَةٍ يَذْهَبُ بِالْأَبْصَارِ﴾ (سُورَةُ النَّوْرِ: 43)

"Have you not observed how God causes the clouds to move subtly before stacking them together and causing rain to fall from them?"

3.2.2 Winds and Rainfall.

There are several verses in the Holy Qur'an in which the movements of winds, the breaking up of moisture in the clouds to droplet and appearance of rain drops from the clouds are described, for instance:

In another place the Holy Qur'an says:

﴿وَأَرْسَلْنَا الرِّيْحَ لَوَافِحٍ فَأَنْزَلْنَا مِنَ السَّمَاءِ مَاءً فَأَسْقَيْنَاكُمُوهُ وَمَا أَنْتُمْ لَهُ بِخَازِنِينَ﴾ (سُورَةُ الْحَجْرِ: 22)

"And we direct the winds to spread fertilizer, and we bring water on earth for you to drink. The holders of the shop therein are not you".

Similarly Qur'an says in another place:

﴿وَهُوَ الَّذِي أَرْسَلَ الرِّيْحَ بُشْرًا بَيْنَ يَدَيْ رَحْمَتِهِ وَأَنْزَلْنَا مِنَ السَّمَاءِ مَاءً طَهُورًا﴾ (سُورَةُ الْفُرْقَانِ: 48)

"And He it is who sends the winds, glad tidings heralding His mercy, and We send down purifying water from the sky"

The Holy Qur'an has further said:

﴿وَاللَّهُ الَّذِي أَرْسَلَ الرِّيْحَ فَتُثِيرُ سَحَابًا فَسُقْنَاهُ إِلَى بَلَدٍ مَيِّتٍ فَأَحْيَيْنَا بِهِ الْأَرْضَ بَعْدَ مَوْتِهَا كَذَلِكَ النُّشُورُ﴾ (سُورَةُ فَاطِرٍ: 9)

"And Allah it is who sends the winds and they raise a cloud; then we lead it unto a dead land and revive therewith the earth after its death. Such is the Resurrection"

It is common fact that there are different types of clouds, which are associated with characteristic rainfall. The Holy Qur'an is also illuminating to distinguish between steady rain and thunderstorm with their associated clouds.

Allah says:

(أَلَمْ تَرَ أَنَّ اللَّهَ يَرْجِي سَحَابًا ثُمَّ يُؤَلِّفُ بَيْنَهُ ثُمَّ يَجْعَلُهُ رُكَامًا فَتَرَى الْوَدْقَ يَخْرُجُ مِنْ خِلَالِهِ وَيُنَزِّلُ مِنَ السَّمَاءِ مِنْ جِبَالٍ فِيهَا مِنْ بَرَدٍ فَيُصِيبُ بِهِ مَنْ يَشَاءُ وَيَصْرِفُهُ عَنِ مَنْ يَشَاءُ يَكَادُ سَنَا بَرْقَةٍ يَذْهَبُ بِالْأَبْصَارِ) (سُورَةُ النَّوْرِ: 43)

“Have you ever seen how Allah blows the clouds, gathers them, layers them, and then lets the rain fall from between them? He also sends hail down from the Heavenly Mountains, where it is, and strikes with it or shields it from whoever He pleases. The sight is almost taken away by the flash of His lightning”.

This verse of the Holy Qur'an presents a very good description of two different phenomena, one of them is the appearance of " " or steady rain from in between the stratus clouds and the other one is the appearance of hail and lightning from the cumulonimbus clouds which were associated with storms. (Mossop, S. C., (1985).

It is a common phenomenon that after rainfall some water is absorbed by the earth and therest drain away in the form of runoff. Referring to this fact the Holy Qur'an says:

(وَأَنْزَلْنَا مِنَ السَّمَاءِ مَاءً بِقَدَرٍ فَأَسْكَنْتَهُ فِي الْأَرْضِ طَرْدًا وَإِنَّا عَلَىٰ ذَهَابٍ بِهَا لَقَادِرُونَ) (سُورَةُ الْمُؤْمِنُونَ: 18)

“And we send down from the sky water in measure, and we give it settle in the earth, and lo! We are Able to withdraw it.”

3.3 Hydrospheric (Hydrological Hazards)

Floods and droughts are particularly caused by hydrological hazards ("hydro-hazards"), which are severe phenomena connected with the occurrence, transport, and distribution of water.

Part of the world covered with water is called hydrosphere. These include all liquid components of the earth, i.e., water in the oceans, river, streams, springs and lakes etc. It covers almost 71% of the earth's surface and the world's oceans constitute more than 94% of the Hydrosphere (Harrigan, S. et al., 2018). Some important hazards and disaster originated in these water bodies are called hydrological hazards. Examples are floods, tsunami, heavy rainfall etc. Water converts into various forms and shapes through a cycle called hydrological or water cycle (Lawrence, J. F., et al., 2001).

This great cycle is described by the Holy Qur'an as follows:

"He pours down rain from the sky and with it gives life to the land when it is dead: Verily in that are Signs for the Wise," the Qur'an describes this water cycle.

Water is the major component of all the living matter and we can say that life is impossible without water, the Holy Qur'an points out the important of water for life, as follow:

(وَهُوَ الَّذِي خَلَقَ السَّمَوَاتِ وَالْأَرْضَ فِي سِتَّةِ أَيَّامٍ وَكَانَ عَرْشُهُ عَلَى الْمَاءِ لِيَبْلُغَكُمْ أَحْسَنَ عَمَلًا وَلَئِنْ قُلْتُمْ إِنَّكُمْ مَبْعُوثُونَ مِنْ بَعْدِ الْمَمُوتِ لَيَقُولَنَّ الَّذِينَ كَفَرُوا إِنْ هَذَا إِلَّا سِحْرٌ مُبِينٌ) (سُورَةُ هُودٍ: 7)

“And He is the One Who made the heavens and the earth in six days, and His throne was situated on the sea, in order to test you and see which of you is the most moral. However, if you (O Muhammad) declare: Behold, you shall be risen from the dead! Those who don't believe will undoubtedly claim that this is just plain magic”.

The commentators like A.Yousaf Ali (1934) are of the view that the throne of Allah's authority is metaphorically expressed as over the waters i.e., as regulating all life.

It has been scientifically proved that water makes 60-90% of the weight of living organisms and it is also correct to say that all life evolved out of waters and depends on water, as Holy Qur'an says at another place:

(وَهُوَ الَّذِي خَلَقَ مِنَ الْمَاءِ بَشَرًا فَجَعَلَهُ نَسَبًا وَصِهْرًا وَكَانَ رَبُّكَ قَدِيرًا) (سُورَةُ الْفُرْقَانِ: 54)

“And He is the one who made man out of water and assigned to him both blood and marital kinship; for thy Lord is eternally Powerful”.

3.3.1 Ocean Currents

It is common phenomena within the ocean, that there is no uniform mass of water but a series of well-defined layers, each with its own characteristics such as salinity and temperature variations etc. Due to these variations huge columns of water with different characteristics are flowing are called ocean currents (Fossette et al., 2012). They flow inside the ocean and don't mix up inspite of their free access to each other but are separated with a sharply defined line. The best example of this is the partition of cold water between Labrador Current and Gulf Stream. This phenomenon of keeping separate salt water and fresh water is described in the Holy Qur'an like this:

(وَهُوَ الَّذِي مَرَجَ الْبَحْرَيْنِ هَذَا عَذْبٌ فُرَاتٌ وَهَذَا مِلْحٌ أُجَاجٌ وَجَعَلَ بَيْنَهُمَا بَرْزَخًا وَحِجْرًا مَّحْجُورًا) (سُورَةُ الْفُرْقَانِ: 53)

“And He it is Who hath given independence to the two seas (though they meet); one palatable, sweet, and the other saltish, bitter; and hath set a bar and a forbidding ban between them.”

Ocean currents move not just plants and animals throughout the ocean, but also re-circulate heat and nutrients. They also have enormous effects on cloud formation, marine life, and coastal habitats. There have been significant recent changes to these affects.

Sometime these changes effect the global climate i.e. Alnino and LaNina phenomena resultantly, change and shape the entire communities. La Nia, which occurred recently, is one instance where sea temperatures rose by up to 5°C along the shore. The catastrophic effects of this temperature increase included the extinction of many sessile animals and plants (Feng et al., 2013). Ocean currents also have a significant influence on climate, which in turn affects terrestrial systems including, for example, the frequency of droughts and bushfires.

Scientists have discovered recently that those points where two seas of different characteristics meet together, there is abarricade between them which divides these two seas. They have different temperature, salinity level and water density (Fossette et al., 2012). For example, Mediterranean sea water having characteristics of warm, more saline, and less dense as compared to water of the Atlantic ocean. When water of Mediterranean sea enters to Atlantic ocean through the Gibraltar sill, it flows several hundred kilometers with about 1000 meter depth with its own identity (Fossette et al., 2012).

Even though there are other influences like huge water waves, strong ocean currents and factors of tides, they do not disturb the separate flow of water. The Holy Qur'an mentioned these phenomena as under:

"He has set the two waters at their convergence free. There is a wall separating them. They don't break the law (Al-Qur'an, 55:19-20).

(مَرَجَ الْبَحْرَيْنِ يَلْتَقِيَانِ - بَيْنَهُمَا بَرْزَخٌ لَا يَبْغِيَانِ) (سُورَةُ الرَّحْمٰنِ 20, 19:)

(وَهُوَ الَّذِي مَرَجَ الْبَحْرَيْنِ هَذَا عَذْبٌ فُرَاتٌ وَهَذَا مِلْحٌ أُجَاجٌ وَجَعَلَ بَيْنَهُمَا بَرْزَخًا وَحِجْرًا مَّحْجُورًا) (سُورَةُ الْفُرْقَانِ: 53)

3.3.2 Ocean Resources

For millennia, people have relied on coastal resources. However, the present population boom and the enhanced technological accessibility of coastal resources have led to congested and frequently violent environments (Alexander, et al., 2019).

Oceans fulfill functions of importance for humanity. They are of utmost importance to mankind as a source of fish, salt and pearls and also as an irreplaceable cheapest medium of transportation. The role of maritime economy in the present day is growing appreciably. The ocean is becoming a major source of petroleum, natural gas and other mineral ores. That is why we are witnessing a growing interest in the ocean and its resources in many countries in mastering the sea in improving free and connected highways of water transportation to all quarters of the globe.

The Holy Qur'an refers to all these oceanic resources at various places in different manners.

{وَهُوَ الَّذِي سَخَّرَ الْبَحْرَ لِتَأْكُلُوا مِنْهُ لَحْمًا طَرِيًّا وَتَسْتَخْرِجُوا مِنْهُ حَبًا وَلَبَسُونَهَا وَتَرَى الْفُلْكَ مَوَاجِرَ فِيهِ وَلِتَبْتَغُوا مِنْ فَضْلِهِ وَلِعَلَّكُمْ تَشْكُرُونَ} (سُورَةُ النَّحْلِ: 14)

“And He is the one who has made the sea useful to you by bringing forth decorations for you to wear and allowing you to consume fresh meat from it. And you can see the ships plough it so that people might take advantage of His generosity and perhaps express gratitude”.

While pointing the precious mineral resources of oceans, Qur'an says:

{يَخْرُجُ مِنْهُمَا اللُّؤْلُؤُ وَالْمَرْجَانُ} (سُورَةُ الرَّحْمَنِ: 22)

“There cometh forth from both of them the pearl and coral-stone.”

3.4 Anthropogenic Hazards

Studies revealed that natural hazards (73%) are more commonly than the man-made (anthropogenic) hazards (14%) (Duncan, et al., 2016). Anthropogenic processes may influence the occurrence, frequency or intensity of natural hazards (Guthrie, 2015). There are three words in the Qur'an that denote disaster: First, musibah, which denotes anything that happens to people and might be either good or terrible (Adiyoso W. et al., 2013). Most scholars agree that musibah results from a human sin. The second is the bala, or means test (human promotion). God's plan is fulfilled in bala when people are not involved. Bala seeks to improve human status, absolve sinners, and purify the soul (Acevedo G.A., 2008). Lastly, azab, which is Arabic for "penalty." Azab is described as torment or a torturous punishment in the Qur'an. The only people who receive the retribution from God are the wicked and the unbelievers (Ghafory-Ashtiany M., 2009).

ظَهَرَ الْفَسَادُ فِي الْبَرِّ وَالْبَحْرِ بِمَا كَسَبَتْ أَيْدِي النَّاسِ لِيُذِيقَهُمْ بَعْضَ الَّذِي عَمِلُوا لَعَلَّهُمْ يَرْجِعُونَ (سورة الروم: 41)

Because of what the people's hands have earned, disasters have occurred on land and at sea. He (Allah) does this so they might experience some of the consequences of their actions and turn to the straight path.

4. Motion of heavenly bodies and their effects on the earth

Objects in space such as the sun, moon, planets, and stars are known as celestial bodies or heavenly bodies. They are often quite far away from us and are a part of the enormous cosmos we inhabit. For a very long time, celestial body motion has attracted a lot of attention. The motion of the celestial bodies in space, such as the planets and satellites, follows the principles of physics (Donati, G., 2020). The gravitational pull of gravity causes all celestial bodies, including planets and satellites, to circle in an elliptical pattern, balancing their centrifugal velocity. The extended or skewed circle is an elliptical orbit.

It is a universal fact that the earth revolves round the sun and rotates about its own axis. Similarly moon revolves round the earth and its one complete revolution takes a time of 27½ days (Woolard, E. W., 1953). According to the Holy Qur'an the movement of the sun, moon, earth and other heavenly bodies are controlled by exact mathematical laws. The Holy Qur'an Says:

﴿الشَّمْسُ وَالْقَمَرُ بِحُسْبَانٍ﴾ (سُورَةُ الرَّحْمَنِ:5)

“The sun and the moon are made punctual”

Thus billions of heavenly bodies are constantly moving in their respective orbits without the one striking against the other. As is said by the Almighty:

﴿وَهُوَ الَّذِي خَلَقَ اللَّيْلَ وَالنَّهَارَ وَالشَّمْسَ وَالْقَمَرَ كُلٌّ فِي فَلَكٍ يَسْبَحُونَ﴾ (سُورَةُ الْأَنْبِيَاءِ:33)

“And He is the one who gave rise to day and night, the sun, and the moon. They individually float and are in orbits”.

﴿لَا الشَّمْسُ يَنْبَغِي لَهَا أَنْ تُدْرِكَ الْقَمَرَ وَلَا اللَّيْلُ سَابِقُ النَّهَارِ كُلٌّ فِي فَلَكٍ يَسْبَحُونَ﴾ (سُورَةُ يَس:40)

“It is not for the sun to overtake the moon, nor doth the night outstrip the day. They float each in an orbit.”

It is now an agreed fact that the movements of these heavenly bodies have relationship with the time and changes in season. The Holy Qur'an has referred to all these facts fourteen and a half centuries ago. The Holy Qur'an says that on these movements depend the counts of the days, months and years as well as the intensity of heat and light on the earth and seasonal changes.

Rotation of the earth is interpreted as sequence of days and night and revolution is related with seasonal changes. The Holy Qur'an refers to the earth's rotation and revolution at several places. Normally the Qur'anic description of natural phenomena begins with oaths some examples are the following.

﴿وَاللَّيْلُ إِذَا أَدْبَرَ - وَالصُّبْحُ إِذَا أَسْفَرَ﴾ (سُورَةُ الْمَدْيَنَةِ:34)

“And by the night as it advances and recedes. And the dawn as it breads. And the dawn as it breathes away the darkness.”

﴿وَاللَّيْلُ إِذَا عَسَعَسَ﴾ (سُورَةُ التَّكْوِينِ:17)

“And the close of night.”

﴿وَاللَّيْلُ إِذَا يَسَّرَ﴾ (سُورَةُ الْفَجْرِ:4)

“And the night when it departeth.”

﴿وَالنَّهَارُ إِذَا جَلَّلَهَا - وَاللَّيْلُ إِذَا يَغْشَاهَا﴾ (سُورَةُ الشَّمْسِ:4, 3)

“And the day when it revealeth him, and the night when it enshroudeth him.”

The lengths of the days and nights are also related with the seasonal changes, i.e., revolution of the earth Days are longer in summer and shorter in winter. The Holy Qur'an discuss this phenomena as follows:

﴿أَلَمْ تَرَ أَنَّ اللَّهَ يُولِجُ اللَّيْلَ فِي النَّهَارِ وَيُولِجُ النَّهَارَ فِي اللَّيْلِ وَسَخَّرَ الشَّمْسَ وَالْقَمَرَ كُلٌّ يَجْرِي إِلَىٰ أَجَلٍ مُّسَمًّى وَأَنَّ اللَّهَ بِمَا تَعْمَلُونَ خَبِيرٌ﴾ (سُورَةُ لُقْمَانَ: 29)

"Hast thou not observed how Allah makes the night become the day and makes the day become the night, and hath tamed the sun and the moon (to perform their task), each running towards its allotted period; and that Allah is mindful of what ye do?"

In this **تولج** means to gradually merge into i.e. there is no clear cut line of demarcation between day and night. Both gradually merge into each other. Then there are verses in the Holy Qur'an which discuss the usefulness of these movements for measurement and calculation of the years.

5. Conclusion

The Holy Qur'an is a divine book for the betterment and guidance of Man here in this world and the life here after. The Holy Qur'an is the foundation of the all Muslims' beliefs and faith. All Muslims are believed that the holy Qur'an covers guidance not only for Muslims but for human being, all time and every age. The Holy Qur'an repeatedly and consistently encourages the Muslim Community to observe, explore, investigate and understand the reality. The Holy Qur'an has told and said a lot about the life and natural sciences centuries before. The Holy Qur'an is equally instructive to a man of high intellect, as well as to a man of ordinary intelligence. It appealed to the nomads of the desert of Arabia, fourteen hundred year ago, so much as it does appeal to a space age man of present and shall remain as such for men in all ages to come. The Earth planet consists of lithosphere, hydrosphere, atmosphere and biosphere. These are inter related spheres, therefore, no part of the Earth can be considered in isolation from the other. Based on these parts of the earth natural hazards can be classified into meteorological, hydrological, anthropogenic and geo-hazards. Numerous of the mechanisms that shape these systems are influenced by human activity. Further explorations of nature shall continue to discover all that still lies hidden underneath the surface of the Qur'anic text. The more you become conversant with the scientific discoveries the more you find something new in the Holy Qur'an and the thrill of new idea being verified by the divine book can never be adequately described. The Holy Qur'an referred to so many natural phenomena fourteen century earlier, which have recently been discovered by scientists.

References

1. Acevedo G.A., (2008). 'Islamic fatalism and the clash of civilizations: An appraisal of a contentious and dubious theory', *Social Forces* 86(4), 1711-1752. 10.1353/sof.0.0033 [CrossRef] [Google Scholar]
2. Adiyoso W. & Kanegae H., 2013. 'The preliminary study of the role of Islamic teaching in the disaster risk reduction (A qualitative case study of Banda Aceh, Indonesia)', *Procedia Environmental Sciences* 17, 918-927. 10.1016/j.proenv.2013.02.110 [CrossRef] [Google Scholar]
3. Ahrens, C. D., & Samson, P., (2011). *Extreme weather & climate*. Brooks / Cole, pp.508.
4. Alexander KA, Haward M (2019) The human side of marine ecosystem-based management (EBM): 'sectoral interplay' as a challenge to implementing EBM. *Marine Policy* 101:33-38
5. Aplin, K. L., and Harrison, R.G.: (1999). 'The interaction between air ions and aerosol particles in the atmosphere', in D. M. Taylor (ed.), *Proceedings of 10th International Electrostatics Conference*, Cambridge, Institute of Physics Conference series 163, 411-414.
6. Ayala, I., and Goudie, A. (eds.), (2010). *Geomorphological Hazards and Disaster Prevention*. Cambridge: Cambridge University Press.
7. Bell, F. G., (2003). *Geological Hazards: Their Assessment, Avoidance and Mitigation*. Oxford: Taylor & Francis.
8. Bostrom A. , L. Anselin, J. Farris (2008). **Visualizing seismic risk and uncertainty** *Ann. N. Y. Acad. Sci.*, 1128 (1) (2008), pp. 29-40, 10.1196/annals.1399.005
9. Coch, N. K., 1995. *Geohazards: Natural and Human*. Englewood Cliffs: Prentice Hall.
10. Coppola, E., Raffaele, F., Giorgi, F., (2021). Climate hazard indices projections based on CORDEX-CORE, CMIP5 and CMIP6 ensemble. *Clim. Dyn.* 57, 1293-1383. doi: 10.1007/s00382-021-05640-z.
11. Donati, Gianni. (2020). Notes on the Motion of Celestial Bodies. *Journal of Applied Mathematics and Physics*. 08. 2757-2774. 10.4236/jamp.2020.812204.
12. Duncan, M., S. Edwards, C. Kilburn, J. Twigg, K. Crowley, (2016). **An interrelated hazards approach to**

- anticipating evolving risk** GFDRR (Ed.), *The Making of a Riskier Future: How Our Decisions Are Shaping Future Disaster Risk*, Global Facility for Disaster Reduction and Recovery, Washington, USA (2016), pp. 114-121
13. Feng, M.J. McPhaden, S.P. Xie, J. Hafner (2013). La Nina forces unprecedented Leeuwin Current warming in 2011
 14. Fossette, N.F. Putman, K.J. Lohmann, R. Marsh, G.C., (2012). A biologist's guide to assessing ocean currents: a review *Mar. Ecol. Prog. Ser.*, 457 (2012), pp. 285-301
 15. Fossette, N.F. Putman, K.J. Lohmann, R. Marsh, G.C. Hays (2012). A biologist's guide to assessing ocean currents: a review *Mar. Ecol. Prog. Ser.*, 457 (2012), pp. 285-301
 16. Ghafory-Ashtiany M., 2009, 'View of Islam on earthquakes, human vitality and disaster', *Disaster Prevention and Management: An International Journal* 18(3), 218-32. 10.1108/09653560910965600
 17. Guthrie, R, (2015). The catastrophic nature of humans *Nat. Geosci.*, 8 (6) (2015), pp. 421-422, 10.1038/ngeo2455
 18. Harrigan, S., Prudhomme, C., Formetta, G., and Beevers, L. (2018). Future hot-spots for hydro-hazards in Great Britain: a probabilistic assessment. *Hydrol. Earth Syst. Sci.* 22, 5387-5401. doi: 10.5194/hess-22-5387-2018
 19. Kohlstedt, D. L., Evans, B. & Mackwell, S. J. (1995). Strength of the lithosphere – constraints imposed by laboratory experiments. *J. Geophys. Res. B* 100, 17587-17602.
 20. Lawrence, J. F. & Wyssession, M. E. (2001). *Earth's Deep Water Cycle* (eds Jacobsen, S. D. & van der Lee, S.) 251-260 (AGU Monograph 168, Am. Geophys. Un.).
 21. Lodders, K., (2003). Solar system abundances and condensation temperatures of the elements. *Astrophys. J.* 591, 1220-1247.
 22. Mossop, S. C. (1985). 'The origin and concentration of ice crystals in clouds', *Bull. Am. Meteor. Soc.* 66, 264-273.
 23. Mossop, S. C., (1985). 'The origin and concentration of ice crystals in clouds', *Bull. Am. Meteor. Soc.* 66, 264-273.
 24. Neill, C., Jellinek, A. M. & Lenardic, A. (2007). Conditions for the onset of plate tectonics on terrestrial planets and moons. *Earth Planet. Sci. Lett.* 261, 20-32 (2007).
 25. O'Neil, H. & Palme, H. (1998). in *The Earth's Mantle, Composition, Structure and Evolution* (ed. Jackson, I.) 3-126 (Cambridge Univ. Press.
 26. Owen, T. & Bar-Nun, A. (1995). Comets, impacts, and atmospheres. *Icarus* 116, 215-226 Robert, F. (2001). The origin of water on Earth. *Science* 293, 1056-1058.
 27. Pepin, R. O. (1991). On the origin and early evolution of terrestrial planet atmospheres and meteoritic volatiles. *Icarus* 92, 2-79.
 28. Roger P. J., (2008). *The Road to Reality: A Complete Guide to the Laws of the Universe*.
 29. Spiridonov, V., & Ćurić, M. (2011). *An introduction to meteorology*. ISBN 978-608-65175-0-2 COBISS.MKID 83607306, pp. 241 (1, 2,3,4,6, 10, 11, 12, 16, 17, 18).
 30. Woolard, E. W. (1953). 'Theory of the Rotation of the Earth around Its Center of Mass', *Astron. Papers Amer. Ephemeris* 15, pt. 1.