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# Cloud and Rain: Perspective of Quran and Science

By:

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## Abstract

*Science and Islam have been proven to be interrelated with each other in many aspects of life. Most of the phenomena that occur in this world has been described in the Quran. As Muslims, Allah has instructed us to study the phenomena that occur in our surroundings. Therefore, it is vital to relate all of our scientific findings with the Quran. This paper will discuss on the process of cloud formation and rain based on the Quran and science. The hydrological cycle which is the major process involved in the formation of cloud and rain will also be described in this paper. The scientific view proposes that the formation of cloud begins with the evaporation of sea water into the sky. After some time, when the cloud is unable to hold water inside it, thus, it results in falling rain. In the Quran, this phenomena is described in Surah Ar-Rum: 48 and Surah An-Nur: 43. Also, there are several verses in the Quran that mention the importance of rain to all living things as stated in Surah Al-A'raf:57 and Surah Qaf:9. In the aspect of science, rain has large effects to certain processes such as the leaching and fertilization of soil. As a conclusion, the scientific explanation on the formation of cloud and rain, has been stated in the Quran in which they are consistent with each other.*

**Keywords:** Cloud, Rain, Quran, Science, Hydrological Cycle

## 1.0 INTRODUCTION

According to Merriam-Webster Dictionary (2013), clouds can be termed as a visible mass of particles of condensed vapour (as water or ice) suspended in the atmosphere of a planet (as the earth) or moon. In other words, clouds are made of water drops or ice crystals and float in the sky (B. Dunbar, 2013). The water droplets will have a size that is within the range of few microns to 100 microns (J. G. Speight & S. Lee, 2000). When these droplets are present in a large number, they will come together and form clouds (McCudden, 2015).

Rain is a form of precipitation, and comes from water that has condensed into clouds high up in the atmosphere. When the sun shines on the ocean (or on rivers or lakes), heat builds up in the water. As a result, the hot rays from the sun cause the ocean water to evaporate. This evaporated water floats up into the atmosphere, where it is much cooler there than at the ocean. As the water vapour cools down, it begins to condense to form clouds. If it condenses enough, the water vapour will turn back into a liquid and fall to the earth as rain (5C Science Bus, 2009).

Since the maximum capacity of water droplets that can be accommodated in a cloud is only up to 100 microns, with the help of gravity, water particles with more than 100 microns will fall to earth as rain or also known as precipitation (J. G. Speight & S. Lee, 2000). To simplify things, since warm air can hold more water than cool air, when the warmer air is cooled, the moisture in the air condenses to liquid and thus, rain forms.

## **1.1 Problem Statement**

According to the Mesamerican culture, the one that is responsible for the creation of clouds and precipitation is the rain god which is known as Chac (K. A. Read & Gonzalez, 2000). While, to the Chinese, they believed that the dragon is the one that is able to form clouds and rain (Metzger, 1965). They are able to form clouds just by exhaling and the sound of thunder is made by the scream of the dragons (J. Thorbjarnarson & Wang, 2010).

These are the ancient beliefs of some cultures throughout the globe. Based on these cultures, it is obvious that they also believe in other entities being the regulator to form clouds and rain. These entities are normally connected to god. In the Mesamerican culture, they have a specific god to control the existence of clouds and they can manipulate the rain to fall.

However, belief alone is not enough to prove the actual mechanism of the process. Not to mention that the current society has the ability to think logically, the demand for the truth especially in the scientific way has never been greater. Therefore, the scientific way of cloud formation as well as the rain process will be discussed in this paper. From the findings, the results will be compared to the words of Allah S.W.T in the Quran.

## **1.2 Research Objectives**

This research is carried out to study the formation of cloud and rain based on the scientific perspective as well as the Qur'anic view. The findings of this research will make our understanding on the cloud and rain formation better.

## **2.0 THE SCIENTIFIC VIEW ON THE FORMATION OF CLOUD AND RAIN**

### **2.1 The Hydrological Cycle (Water Cycle)**

As what have been said earlier, water from the ocean gets evaporated by the sun, and then condenses into clouds. The condensed water will come together and increase in size which eventually lead to the formation of clouds. However, the combination of water droplets doesn't just stop when the cloud is formed but the process would rather continue until the cloud becomes heavily populated with these water droplets or in simple terms, it becomes "heavy". Thus, these water droplets will fall back to earth as precipitation or rain (Morgan, 2009). This process is the summary of a cycle known as the water cycle.

The water cycle has been going on for almost as long as the earth has existed. The water that you drink today may have at one point been in the stomach of a dinosaur! But without the water cycle, we would not have any fresh water. The water cycle is how water from the ocean gets recycled and carried up into the mountains to form rivers and lakes which we can drink from. It is a very important part of life here on earth (5C Science Bus, 2009).

The common terms that we normally hear in the water cycle include evaporation, transpiration Precipitation is a part of a complex process that not only gives us water to drink, fish to eat, but also weather patterns that help grow our crops (The Evergreen Project, 1995-1998). Based on an article from the The Evergreen Project (1995-1998), a detailed explanation on the processes involved in the water cycle is discussed below.

### **2.1.1. Evaporation**

Evaporation is a process whereby a liquid, in this case water changes its state from liquid to gas. Liquid water becomes water vapour when it exists in its gaseous state. Although with a low air pressure evaporation can also occur, the key player is the temperature. In this process, some of the water in the oceans and freshwater bodies, such as lakes and rivers, is heated by the rays coming from the sun and this makes the water to evaporate into the atmosphere (The Evergreen Project, 1995-1998). The sun's heat causes the water molecules to separate farther from each other and they reach a certain distance in which they would change their states to gases instead of liquids (H<sub>2</sub>O, 2008-2010). During this process, impurities in the water are left behind. Thus, the evaporated water is cleaner than those on Earth.

### **2.1.2. Condensation**

Condensation is the contradictory process of evaporation. Condensation occurs when the vapour in the air is changed into a liquid. When there is a decrease in temperature of the vapour, that is be the point when condensation will occur. The vapour or water droplets will be suspended in the air. For water to condense into droplets, small dust particles must be exist around the area which the droplet can be formed. Through this process also, clouds will be formed, just as explained earlier (The Evergreen Project, 1995-1998). From this process, it is clear that the condensation process is vital in the formation of clouds (Perlman, 2014).

### **2.1.3. Precipitation**

When the right temperature and atmospheric pressure are achieved, the small droplets of water in clouds combine together and after the maximum capacity of the cloud has been exceeded, precipitation occurs. Rain is a form of liquid precipitation but other forms of precipitations include snow, hail, sleet and others (H<sub>2</sub>O, 2008-2010). It is clear now, with the process of evaporation, condensation and precipitation, water travels from the surface of the Earth into the atmosphere, and fall back to Earth again. This is the most important process that will deliver water in the atmosphere back to Earth (Perlman, 2014).

### **2.1.4. Surface Runoff**

Most of the water that returns to Earth as precipitation will travel through land surfaces and flows down hills into streams, rivers, ponds and lakes. The water will flow into small streams which are connected to larger streams, then into rivers, and eventually the water flows back into the ocean. This phenomenon when water travels at the surface of the Earth is called Surface Runoff. Surface runoff is an important part of the water cycle since much of the water will be returned back into the sea, where a lot of evaporation occurs in which this causes the cycle to begin again (The Evergreen Project, 1995-1998).

### **2.1.5. Infiltration**

Infiltration is a process when rain water soaks into the ground, passing into the soil and through underlying rock layers. Through springs or some low spots downhill, some of this water ultimately returns to the surface. Water that remains under the ground is called groundwater. As the water infiltrates through the soil and rock layers, it filters many of the

impurities in the water. This filtering process helps clean the water (The Evergreen Project, 1995-1998).

### 2.1.6. Transpiration

As water from the soil is absorbed by plants, the water will move from the roots through the stems and then to the leaves. Once the water reaches the leaves, some of it evaporates out of the leaves, increasing the amount of water vapour in the air. This process of evaporation through plant leaves is called transpiration. In large forests, this process occurs widely due to the large amount of trees present and this contribute to the high density of water transpired into the atmosphere (The Evergreen Project, 1995-1998).

### 2.1.7. The Cycle

To summarize this section, each part of the cycle drives the other parts. Water is constantly being cycled between the atmosphere, the ocean and land. This cycling process is a very important process that helps sustain life on Earth. As the water evaporates, vapours rise and condense into clouds. The clouds move over the land, and precipitation falls in the form of rain, ice or snow. The water fills streams and rivers, and eventually flows back into the oceans where evaporation starts the process anew. Learn a lot more about this complicated process in concepts. Water's state (solid, liquid or gas) is determined mostly by temperature. Although water continuously changes states from solid to liquid to gas, the amount of water on Earth remains constant. There is as much water now as there was hundreds or millions of years ago. All of the processes are illustrated below:

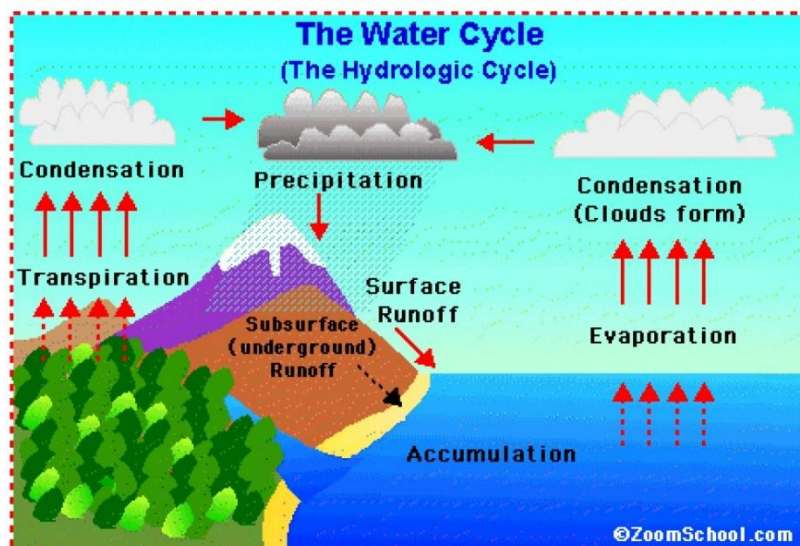


Figure 1: The Water Cycle.

## 2.2 Characteristics of the Cloud

As explained earlier, clouds mainly consist of water in the form of vapour. If they are from water, then why do we see clouds white in colour not clear as water. The answer is when light travels; it carries waves of different lengths whereby each colour has its own unique wavelength. Back to the cloud matter, we see clouds white because the water droplets or ice crystals contained in them are large enough to scatter the light of the seven common

wavelengths which are coloured red, orange, yellow, green, blue, indigo and violet. These colours combine to produce a white light. Due to this white light that we see the colour of clouds to be white (Wicker, 2013).

## **2.2.1 Types of Cloud**

### **i. Cirrus Clouds**

This cloud is the most common among high clouds. They are made up of ice and they are usually a feathery and wispy clouds blown by high winds into long streamers (LMK Webmaster, 2011). Cirrus clouds are usually white and can be used to predict fair to pleasant weathers. The movement of cirrus clouds you can indicate which direction the weather is approaching. Cirrus clouds are also usually used to show that a change in the weather will occur within 24 hours (Wicker, 2013).

### **ii. Cirrostratus Clouds**

This cloud are considered to be a thin, sheet-like high clouds that often cover the entire sky. Cirrostratus clouds usually come 12-24 hours before a rain or snow storm. Since they are so thin, the sun and moon are able to be seen passing through them (Wicker, 2013). When the light passes through the hexagonal-shaped ice crystals of this cloud, the light will be refracted (similar to light passing through a prism) in such a way that a or halo ring may form (LMK Webmaster, 2011).

### **iii. Cirrocumulus Clouds**

This is a cloud that appear as small, rounded white puffs looking like long rows. The small ripples in the cirrocumulus clouds sometime observed as the scales of a fish. Cirrocumulus clouds are usually seen in the winter and indicate fair, but cold weather. In tropical regions, they may signal that a hurricane is approaching (Wicker, 2013).

### **iv. Altostratus Clouds**

This cloud appears normally in grey or blue-grey colour. It is mid-level cloud which is composed of ice crystals and water droplets. The clouds would normally cover the whole sky. In thinner areas of the clouds, the sun may be dimly visible as a round disk. Altostratus clouds often form ahead of storms with continuous rain or snow (Wicker, 2013).

### **v. Altocumulus Clouds**

This is also a mid-level cloud that is made of water droplets and will look like as grey puffy masses. They usually form in groups. If altocumulus clouds are seen on a warm morning, thunderstorms are bound to happen later in the afternoon (Wicker, 2013).

### **vi. Stratus Clouds**

This cloud will appear as a uniform greyish clouds that often cover the entire sky. They are similar to fog that doesn't reach the ground. Light mist or drizzle sometimes falls out of these clouds (Wicker, 2013).

**vii. Stratocumulus Clouds**

This cloud will be formed as a low, puffy and grey mass. Most are formed in rows with blue sky visible in between them. Rain rarely occurs with stratocumulus clouds; however, they can transform into nimbostratus clouds (Wicker, 2013).

**viii. Nimbostratus Clouds**

This cloud will appear as a dark grey, wet looking cloudy layer associated with continuously falling rain or snow. They are always associated with light to moderate precipitation (Wicker, 2013).

**ix. Cumulus Clouds**

This cloud will appear as a white, puffy cloud that looks like pieces of floating cotton. Cumulus clouds are often called "fair-weather clouds". The base of each cloud is flat and the top of each cloud has rounded towers. When the top of the cumulus clouds resemble the head of a cauliflower, it is called cumulus congestus or towering cumulus. These clouds grow upward and they can develop into giant cumulonimbus clouds, which are thunderstorm clouds (Wicker, 2013).

**x. Cumulonimbus Clouds**

This is considered to be a thunderstorm cloud. High winds can flatten the top of the cloud into an anvil-like shape. Cumulonimbus clouds are associated with heavy rain, snow, hail, lightning and even tornadoes. The anvil usually points in the direction the storm is moving. These clouds are illustrated below:

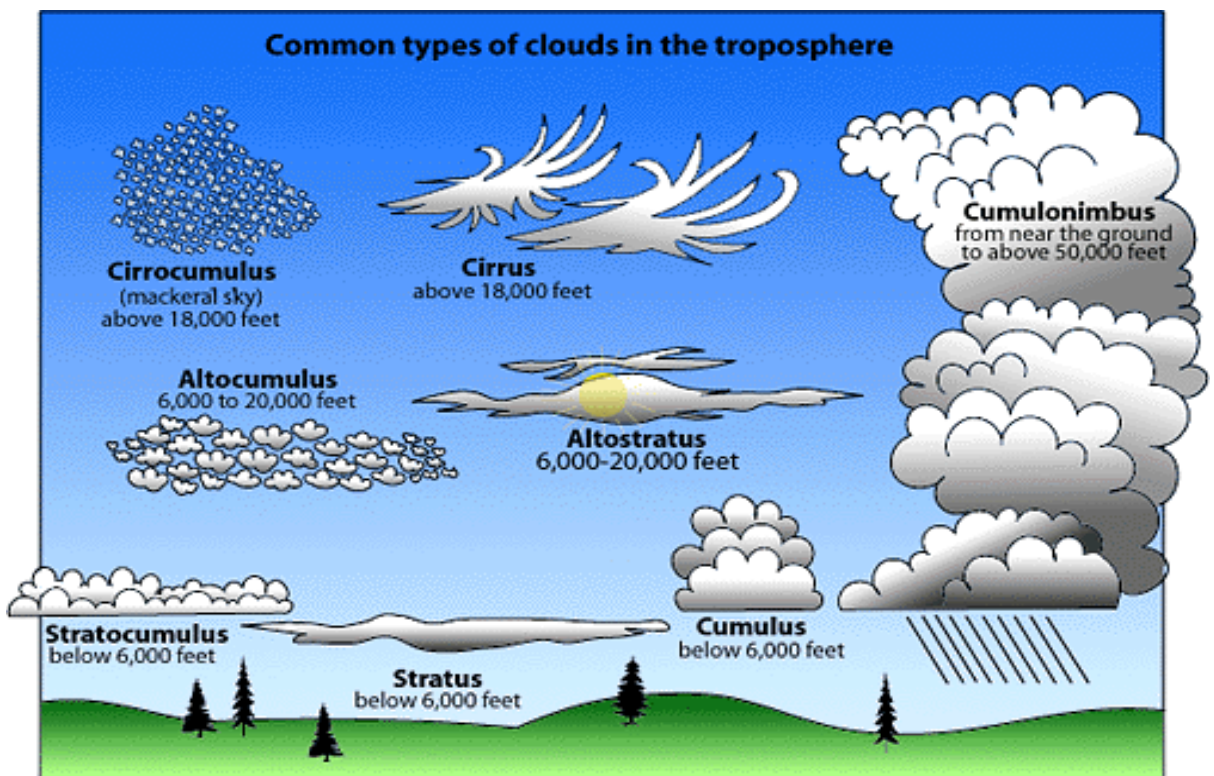


Figure 2: Type of clouds

## **2.3 PRECIPITATION OR RAIN**

### **2.3.1. Formation of Rain**

As we know, the evaporation of water into the air causes it to condense and form clouds. However, the condensation process doesn't end there. It will continue to condense until the cloud cannot hold the water droplets anymore. When the gravity pulls the water droplets in the cloud to fall to Earth, we call the falling water drops "rain". When the air is colder, the water may form snowflakes instead. Freezing rain, sleet or even hail can fall from clouds as a result (B. Dunbar, 2013).

### **2.3.2. Types of Rain**

#### **i. Frontal Rain**

This is a type of rain that occurs when two air masses meet. In a situation where a mass of warm air meets a mass of cold air, they don't mix as they have different densities a similar analogy is water and oil do not mix. Instead, the warm which is less dense air is pushed up over the cold dense air creating the 'front'. As a result, the warm less dense air cools, and the water vapour condenses into water and falls as raindrops. The skies normally appear to be grey and almost all of the sky will be covered in clouds (Met Office, 2014). This type of rain occurs more frequently at the British Isles (Bitesize, 2014).

#### **ii. Orographic Rain or Relief Rain**

This is a type of rain that is produced as a result of clouds formed from the topography or shape of the land. Where there is high ground moist air is forced upwards producing cloud and potentially, precipitation. Mountainous areas close to prevailing westerly winds are most likely to experience this type of rainfall. As we know, when the warm air rises over the obstruction, it cools and clouds form. Rain falls from the clouds, or if the droplets don't grow large enough, fog may form over the hill tops. Fog is basically just clouds at ground level. The air passes over the obstruction and can sink again, gaining warmth as it does so. This air is drier than it was before it lost water as rain, so any clouds left will evaporate again, leaving clear skies. This area has only a little rain because the cloud making process isn't working. Because there is so little rain, the area is said to be in a 'rain shadow' (Met Office, 2014).

#### **iii. Convective Rain**

Convective rain is a product of convective clouds. Convective cloud is formed in vertical motions that is a result of the instability of the atmosphere. The cause of the instability of the atmosphere is the heat rays coming from the sun. As the ground becomes warmer, the moisture in the ground will start to evaporate and rise, also the hot ground also heats the air above it. As the water vapour rises, it cools and condenses into clouds and eventually rain will fall. When you heat the air from below like this, much like in a boiling kettle, you tend to get "bubbles" of rising air, known as updraughts. This tends to give us smaller areas of rain. Sometimes, you can get all three types of rain at once, and this can lead to severe flooding (Met Office, 2014). This type of rainfall is common in the tropical areas (Bitesize, 2014).



### 3.0 FORMATION OF CLOUD AND RAIN IN THE QURAN

#### 3.1. From the Quran

Based on our discovery, the formation of cloud and rain was divided into three stages. First, the "raw material" of rain rises up into the air. Then, clouds are formed. Finally, rain drops appear. All the stages are clearly defined in several verses in Qur'an in which the formation of cloud and rain refers exactly to this process was given centuries in advance before the science field has been established. One of the verses that mentioned the formation of cloud and rain in Qur'an is Surah Ar-Rum: 48 and it is shown below.

اللَّهُ الَّذِي يُرْسِلُ الرِّيحَ فَتُثِيرُ سَحَابًا فَيَبْسُطُهُ فِي السَّمَاءِ كَيْفَ يَشَاءُ  
وَيَجْعَلُهُ كِسْفًا فَتَرَى الْوَدْقَ يَخْرُجُ مِنْ خِلَالِهِ فَإِذَا أَصَابَ بِهِ مَنْ  
يَشَاءُ مِنْ عِبَادِهِ إِذَا هُمْ يَسْتَبْشِرُونَ

*Sahih International*

It is Allah who sends the winds, and they stir the clouds and spread them in the sky however He wills, and He makes them fragments so you see the rain emerge from within them. And when He causes it to fall upon whom He wills of His servants, immediately they rejoice

(30:48)

According to ayah 48 in Surah Ar-Rum above, the three stages of the formation of cloud and rain were mentioned. The first stage started with "It is Allah Who sends the winds ..." This can be interpreted as the countless air bubbles formed by the foams on the surface of the oceans which continuously burst into the air and cause water particles to be ejected towards the sky. These particles are rich in salt will then be carried away by winds and move upwards into the atmosphere. These particles are also called aerosols and they will function as water trap. They will form clouds by collecting around the water vapour themselves that rises from the seas as tiny droplets. The process of the formation will continue to second stage as mentioned in the verse "... and they stir the clouds and spread them in the sky..." The clouds are formed from the condensation of the water vapour around the salt crystal or dust particles in the air. The clouds are suspended in the air and they spread in the sky since the water drops in them are very small with a diameter between 0.01 and 0.02mm. Thus, they will cover the sky. Finally, the process proceeds to the third stage as mentioned in verse "...and He makes them fragments so you see the rain emerge from within them..." The water particles that surround salt crystals and dust particles thicken. This will result the formation of rain drops. Then, the drops which become heavier than air leave the clouds and start to fall to the ground as rain.

As we can see that, the formation of cloud and rain is mentioned in the verses of Qur'an. The stages in the formation are explained in the sequence they take place. The process is also same as well as the information about the formation of the cloud and rain that have been discovered by the science nowadays.

Another verse in Qur'an that mentioned regarding the formation of cloud and rain is Surah An-Nur: 43. The verse is shown below.

أَلَمْ تَرَ أَنَّ اللَّهَ يَرْجِي سَحَابًا ثُمَّ يُؤَلِّفُ بَيْنَهُ ثُمَّ يَجْعَلُهُ رُكَامًا فَتَرَى  
 الْوَدْقَ يَخْرُجُ مِنْ خِلَالِهِ وَيُنزِلُ مِنَ السَّمَاءِ مِنْ جِبَالٍ فِيهَا مِنْ بَرَدٍ فَيُصِيبُ  
 بِهِ مَن يَشَاءُ وَيَصْرِفُهُ عَن مَّن يَشَاءُ يَكَادُ سَنَا بَرْقُهُ يَذْهَبُ  
 بِالْأَبْصَارِ

*Sahih International*

Do you not see that Allah drives clouds? Then He brings them together, then He makes them into a mass, and you see the rain emerge from within it. And He sends down from the sky, mountains [of clouds] within which is hail, and He strikes with it whom He wills and averts it from whom He wills. The flash of its lightning almost takes away the eyesight.

**(24:43)**

There are several types of clouds that covered our sky. In this verse, the Qur'an explained one of the types of cloud which is cumulonimbus. Cumulonimbus is one kind of rain cloud. The formation of rain cloud is explained in order they take place. Rain clouds are formed and shaped according to definite systems and stages. Scientists studying cloud types came across surprising results with regards to the formation of rain clouds. Cumulonimbus can be formed in three stages. The formation is started with the process being driven along which means the winds carried the clouds.

According ayah 43 of Surah An-Nur above, it begins with "Do you not see Allah drives the clouds?" which meant that the clouds are carried along together with the wind. Then, the process will proceed to second step which is joining. This is also mentioned in this verse as "Then He brings them together, and then He makes them into a mass..." The larger cloud is formed when the small cloud which is cumulus cloud driven along by the wind in the first stage joined together. This larger cloud is called cumulonimbus cloud. Lastly, the process is continued to last stage which called stacking. The updrafts within the larger cloud increase after the joining stage. The updrafts near the centre of the cloud are stronger than those near the edges. The cloud is stacked up since those updrafts caused the cloud body to grow vertically. This will result the stretching of the cloud body into cooler region of the atmosphere where drops of water and hail will form and begin to grow larger and larger. These drops of water and hail begin to fall from the cloud as rain, hail and so on when they become too heavy for the updrafts to support them. The stacking stage above also mentioned in this ayah as "...and you see the rain emerge from within it. And He sends down from the sky, mountains [of clouds] within which are hail..."

From the two verses in Qur'an as mentioned above, every stage in the formation of cloud and rain is provided by Allah as stated in the holy Qur'an. The meteorologists have only recently discover the information about cloud formation, structure and function, by using advanced equipment like planes, satellites, computers and many more technologies. This proved that Allah has provided us information that could not have been known 1,400 years ago.

### 3.2 Rain is a Gift from Allah

There are a lot of verses in Qur'an that mentioned the important of the rain to all living thing on the earth. One of the important of the rain is its function as "giving life to dead land". It is stated in several verses such as Surah Al-A'raf ayah 57 and Surah Qaf ayah 9 as shown below.

وَهُوَ الَّذِي يُرْسِلُ الرِّيحَ بُشْرًا بَيْنَ يَدَيْ رَحْمَتِهِ ۗ حَتَّىٰ إِذَا  
 أَقْلَّتْ سَحَابًا ثِقَالًا لَا سُقْنَهُ لِبَلَدٍ مَّيِّتٍ فَأَنْزَلْنَا بِهِ الْمَاءَ فَأَخْرَجْنَا بِهِ  
 مِنْ كُلِّ الثَّمَرَاتِ ۗ كَذَٰلِكَ نُخْرِجُ الْمَوْتَىٰ لَعَلَّكُمْ تَذَكَّرُونَ ﴿٥٧﴾

*Sahih International*

And it is He who sends the winds as good tidings before His mercy until, when they have carried heavy rainclouds, We drive them to a dead land and We send down rain therein and bring forth thereby [some] of all the fruits. Thus will We bring forth the dead; perhaps you may be reminded.

(7:57)

وَنَزَّلْنَا مِنَ السَّمَاءِ مَاءً مُّبْرَكًا فَأَنْبَتْنَا بِهِ جَنَّاتٍ وَحَبَّ  
 الْحَصِيدِ ﴿٩﴾

*Sahih International*

And We have sent down blessed rain from the sky and made grow thereby gardens and grain from the harvest

(50:9)

According to both verses in Qur'an above, there would be no life on earth without rain. The water descending from the sky maintains life through the water cycle. The benefits of this rain are not limited to the land given life, but ultimately this also becomes sustenance for us in the form of agriculture and livestock. In addition, rain keeps the dew balance in to the atmosphere which balances the weather. Other than that, rain also has fertilization effect. Rain drops that reach the clouds after being evaporated from the seas, contain certain substances "that will give life" to a dead land. Salts that fall with rain are small examples of some fertilizers used for increasing fertility. Metals such as calcium, magnesium and

potassium found are elements that increase fertility in the development and production of plants. These substances are also able to develop forests. In every year, 150 million tons of fertilizer falls on the total surface of lands (Yahya, 2014). There would be very little vegetation on the earth if there was not a natural fertilization like this. Thus, the ecological balance would be damaged if there is no rain on the earth.

Besides, the benefits of rain are including provision of fresh water and keeping plants alive. This will result in ensuring a supply of food for both animals and humans. The verses in Qur'an that mentioned about this benefit are Surah Al-Furqan ayah 48-49 and Surah Al-Hijr ayah 22 as shown below.

وَهُوَ الَّذِي أَرْسَلَ الرِّيحَ بُشْرًا بَيْنَ يَدَيْ رَحْمَتِهِ وَأَنْزَلْنَا مِنَ السَّمَاءِ مَاءً طَهُورًا ﴿٤٨﴾

*Sahih International*

And it is He who sends the winds as good tidings before His mercy, and We send down from the sky pure water

لِنُحْيِيَ بِهِ بَلْدَةً مَيِّتًا وَنُسْقِيَهُ مِمَّا خَلَقْنَا أَنْعَمًا وَأُنَاسِي كَثِيرًا ﴿٤٩﴾

*Sahih International*

That We may bring to life thereby a dead land and give it as drink to those We created of numerous livestock and men.

(25:48-49)

وَأَرْسَلْنَا الرِّيحَ لَوَاقِحَ فَأَنْزَلْنَا مِنَ السَّمَاءِ مَاءً فَأَسْقَيْنَاكُمُوهُ وَمَا أَنْتُمْ لَهُ بِخَازِنِينَ ﴿٢٢﴾

*Sahih International*

And We have sent the fertilizing winds and sent down water from the sky and given you drink from it. And you are not its retainers.

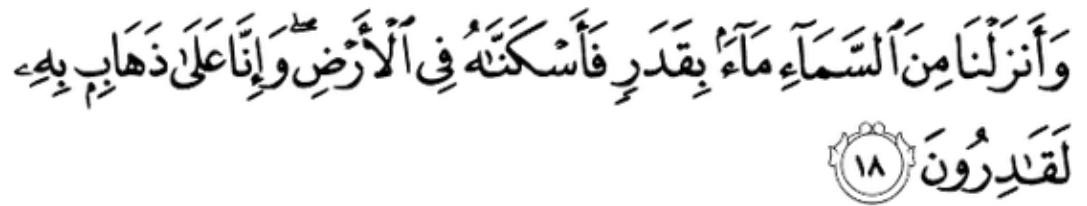
(15:22)

As stated in the Qur'an, rain water is the purest water in the nature. Since it has natural minerals, it gives a lot of health benefits to human. Not only human beings, animals, plants and trees also need rain water for their growth. Animals like cat, horse, dog and others will be healthier while taking the rain water and it is the natural medicine for them. Our house garden will look more pleasant and starts to blossom when it receives the rain and takes the rain

water. Other than that, the rain water will brighten the clothes that we wash since soaps and detergents will work compatibly better with rain water compared with the normal water. Humans will get more refreshment and their skin and hair will get more shine while taking bath in the rain water, and containers that are cleaned using the rain water will be brighter and sparkle like a new one (Vidyaprakash, 2012).

The several benefits of the rain as stated above are evidence for the rain is a gift from Allah. They are also having been mentioned in Qur'an centuries ago and what is more interesting is that this truth, which only have been discovered by modern science nowadays.

### 3.3 The Characteristics of Rain



*Sahih International*

And We have sent down rain from the sky in a measured amount and settled it in the earth. And indeed, We are Able to take it away.

(23:18)

According to Surah Al-Mu'minun ayah 18 shown above, rain water that falls down to earth from the sky is defined as water sent down in "due measure". This verse is related to the characteristics of rain based on the "measure" that have been mentioned.

Firstly, the amount of rain that falls on the earth is always the same as the amount of water that evaporates to the atmosphere. This means that water continuously circulates in a balanced cycle. It is estimated that 16 million tons of water evaporates from the earth in one second. Furthermore, measure related with rain is falling speed of the rain. The minimum altitude of rain clouds is 1200 meters. From the studies, an object which has the same weight and size as a rain drop would continuously fall on the ground with a speed of 558 km/h. With this speed, any object that hits the ground would cause great damage. All living things will be destroyed if rain happened to fall in the same way. That only the speed of rain drop calculated from the rain cloud at a height 1200 meters. Imagine how fast the falling speeds of rain drop if the rain cloud at altitudes of 10 000 meters. However, the average speed of rain drops is only 8-10 km/h when they reach the ground no matter from what height they fall. This happen due to the special form they take. This special form increases the friction effect of the atmosphere and prevents acceleration when the rain drops reach a certain speed "limit" (Yahya, 2010). There is another verse that mentioned about the "measure" of rain in Qur'an which at Surah Az-Zukhruf ayah 11. The verse is shown below.

وَالَّذِي نَزَّلَ مِنَ السَّمَاءِ مَاءً بِقَدَرٍ فَأَنْشَرْنَا بِهِ بَلْدَةً مَيْتًا كَذَلِكَ  
مُخْرِجُونَ ﴿١١﴾

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And who sends down rain from the sky in measured amounts, and We revive thereby a dead land - thus will you be brought forth -

(43:11)

From both of these ayahs, it is obvious that the amounts of water falling back down to earth is the same as the ones evaporated into the sky.

#### 4.0 CONCLUSION

As a conclusion, cloud and rain are two types of phenomena that has already been mentioned in the Qur'an. One of the most important factors for life on the earth is rain. Rain is a prerequisite for the continuity of life. It carries great importance for all living things especially for human beings and all of living things. Cloud and rain are two things that related to each other. The formation of cloud and rain, their proportion and effects are mentioned in various verses of the Qur'an. This information shows us that the Qur'an is the word of Allah since it was not possible for any of this information to have been discovered before the advanced equipment like planes, satellites and computers were developed. For instance, the stages on the formation of cloud and rain remain a great mystery for quite some time and they were discovered only after the weather radar was invented.

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