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SEMANTIC AND SCIENCE RESEARCH MODEL: RELATION UNDERGROUND WATER CONCEPT WITH AGRICULTURAL GROWTH IN QUR'AN

Abdul Qudus Al Faruq
Universitas Islam Negeri Sunan Ampel, Surabaya
abdulqudusalfaruq@gmail.com

Ulfatul Halimah
Sekolah Tinggi Ilmu Al-Qur'an dan Sains Al Ishlah, Lamongan
ulfatulhalimah@stiqsi.ac.id

Abu Bakar
Universitas Islam Negeri Sunan Ampel, Surabaya
abubakaryamani@yahoo.com

Abstract

This research explores the relationship between the concept of underground water and agricultural plant growth as mentioned in the Qur'an, focusing on Surah Az-Zumar verse 21 and Al-Baqarah verse 74. The identified issue there is a correlation between modern scientific theory and what is explained in the Qur'an. The research study uses a descriptive-analytical method with a semantic and scientific approach, employing theories of isytiqaq (derivation) and siyaq (context) for Qur'anic text analysis. The research demonstrates that rainwater seeping into the ground and stored in underground reservoirs is a vital source of life, as illustrated in the Qur'an. The study argues that the Qur'an provides clear guidance on natural processes that sustain life, which is later validated by modern science, showcasing the scientific evidence of i'jaz ilmy in a broader context.

Keywords: Semantic Science; Relation; Underground Water; Agricultural.

Abstrak

Penelitian ini membahas hubungan antara konsep air bawah tanah dan pertumbuhan tanaman pertanian dalam Al-Qur'an, dengan fokus pada Surah Az-Zumar ayat 21 dan Al-Baqarah ayat 74. Masalah yang diidentifikasi adalah terdapat korelasi antara teori ilmiah modern terhadap dengan apa yang dijelaskan oleh Al-Qur'an. Penelitian ini menggunakan metode deskriptif-analitis dengan pendekatan semantik dan ilmiah, menggunakan teori isytiqaq (derivasi) dan siyaq (konteks) untuk analisis teks. Penelitian ini menunjukkan bahwa air hujan yang meresap ke dalam tanah dan tersimpan dalam reservoir bawah tanah merupakan sumber kehidupan yang penting, seperti yang diilustrasikan dalam Al-Qur'an. Penelitian ini berargumen bahwa Al-Qur'an memberikan panduan jelas tentang proses-proses alami yang menopang kehidupan, yang kemudian divalidasi oleh ilmu pengetahuan modern, memperlihatkan bukti ilmiah i'jaz ilmy dalam konteks yang lebih luas.

Kata kunci: Semantik Sains; Relasi; Air Bawah Tanah; Tanaman Pertanian

Introduction

Research on the concept of the presence of underground water according to scientists has received a lot of recognition. recently there was a study at 14 points in Gunungtiga which resulted in a statement that the groundwater level is relatively shallow towards the west or towards a higher topography meaning as a recharge area and flows towards the east which has a lower topography, this study results in that the physical properties of groundwater in the study area do not have taste, smell, and color (Hilman et al., 2023). The second research has established a population base using groundwater for drinking especially in South Asia and the Pacific, showing that the presence of water in the ground is very important for life (Carrard et al., 2019). Besides the latest research, according to science fact that this groundwater concept has been acquired research since Henry Darcy established what we now call Darcy's law based on column experiments conducted in 1855 and 1856 (Wang & Manga, 2021). than developed through interdisciplinary studies by Allan Freeze and John A. Cherry in 1978 as Geological and Earth. Named by concept of underground water and the hydrologic cycle (Freeze & Cherry, 1979). As for the more interesting fact that before the concept initiated by scientists in the 19th century, it turned out to have been mentioned first in the Qur'an.

In Surah Az-Zumar verse 21 and Al-Baqarah verse 74 Allah has explained about relation of underground water concept with agricultural growth by vaguely word. Concept of underground water in Ānzala Mina Al-Samāʾi Māʾ Fasalakahu Yanabīʿa Fī Al-ʾārdi in surah Az-Zumar verse 21 and hydrologic cycle in Wa Īnna Mina Al-Ḥijāraẗi Lammā Yatafajjaru Minhu Al-ʾānhār Waīna Minhā Yašaqqaqu Fayakhruju Minhu Al-Māʾ in surah Al-Baqarah verse 74 (Al-Mushlih, 2008). These Qur'an texts clearly indicate the existence of underground water reservoirs, and invite researcher to search for them and benefit from them. Due to the strong water pressure, the water can explode in the form of springs (Najjār, 2008). With language

and literature studies as a priority for obtaining meaning, in this case linguistic studies become the basis for interpreting texts (Irfani, 2024). The West often promotes secularization, which is the separation of science and religion (Al Faruqi et al., 2021). referring to a division between scientific knowledge with islam (Yatusa'dah, 2022). However, the Qur'an, as a holy book, contains miracles or i'jaz that reveal knowledge previously unknown to humans (Musyafa & Abidin, 2021). An example of this can be found in the study of climate, as mentioned in Surah Az-Zukhruf, verse 11, where Allah speaks about the process of rain, watering the earth, and bringing dead land back to life phenomena that are explored in modern science (Zamawi & Septinawati, 2024). This shows that religion and science are interconnected and do not need to be separated. As before this research, the authors found several previous studies that discussed underground water but used different methodologies, research approaches and steps.

The different point from previous research is researcher using semantic and scientific approach for this research, hopes the conclusion will be different by previous research. The first previous research discussed the problem of groundwater according to contemporary interpretations, in his thesis he did not focus on in-depth linguistic discussions, and many of his written references took Hamka's interpretations (Hasanah, 2023). Secondly, it discusses the problem of water in the Qur'an, in its scientific articles it also does not focus on in-depth linguistic discussions, so it is feared that there is a mismatch between the Qur'an and the reality of science (Haddade, 2016). Third, it only discusses the repetition of the word water in the Qur'an and does not focus on discussing the concept that the researcher wants to raise (sawaluddinsiregar, 2018). Fourth, focuses only on the use of water in plant growth, and does not focus on discussing the concept of underground water (Suskha et al., 2020). as this research has significant innovations and differences.

The point of difference between this study and the previous one is the application of semantic and scientific research approach model, then the focus of the discussion of this study is on the relationship between the concept of groundwater and plant growth in the Qur'an, using contemporary linguistic and scientific theories to deepen an understanding of the theme raised. Then it is necessary for researchers to focus on a formulation of the problem to always be on the main line of research. Researcher formulates a problem formulation to examine the relationship between underground water concept and agricultural growth in the Qur'an. looking at the background of the problem along with previous studies, this research provides a correlation between modern scientific theory and what is explained in the Qur'an through Semantics and Science. With focus on relation underground water concept with agricultural growth in surah Az-Zumar verse 21 and Al-Baqarah verse 74.

Method

This research using two approach, semantic "linguistic" and science. Contemporary approach for linguistic research with various linguistic theories for Qur'anic verse called by 'Ilm Dalalah Qur'aniyyah (Zubaidi, 2019). Then look for its scientific correlation with scientific evidence so as to prove the miracle of the Qur'an through by I'jaz Ilmy (Najjār, 2012). This research uses descriptive, analytical methods and data collection method (Sujarweni, 2014). linguistic theory "semantics" has many theories (Umar, 1998). but researchers use 2 linguistic theories those are isytiqaq "derivation" and Siyaq "context" for semantic analyse (Zubaidi, 2019). The type of research is library research (Baidan, 2016). That is, the data obtained comes from text studies, books, journals, and other literature relevant to the subject matter raised (Sugiyono, 2013). This research falls into the interdisciplinary study category which combines 2 studies and approaches, namely semantic and science (White, 1981). With focus

research on relation underground water concept with agricultural growth in surah Az-Zumar verse 21 and Al-Baqarah verse 74.

Discussion Research

Semantic Qur'an Analyze

Semantic analysis is developed into a study of the use of words to construct sentences. Michel Bréal's work in the late nineteenth century, has concentrated on establishing a systematic approach to understanding and categorizing the changing aspects of meaning in language. It also focuses on creating guidelines to track and analyze how these meanings evolve over time (Būzuwādaï, 2008). Just like theories in natural sciences such as physics and chemistry, semantic theories are considered to be universal (Al-Khulî, 2001). To conduct a scientific study, the researcher utilizes two semantic theories recognized by linguists: Isytiqaq or Derivation and Siyaq or Context.

1. Isytiqaq Analyze

Isytiqaq or Derivation is a linguistic theory that examines the rules of word formation in Arabic, focusing on how words are derived from one another to convey both primary and secondary meanings (Al-Fādānī, n.d.). The researcher applied the Isytiqaq Shogir Theory in his study, which involves the alignment and sequencing of letters within words to form different tenses: future, past, command and create various forms such as nouns and objects from a root word. This concept is integral to the study of Arabic morphology (Al-Sirāj, 1972). Starting by discussing the derivation of core words that have the meaning of the concept underground water and the hydrologic cycle for agricultural growth.

أَلَمْ تَرَ أَنَّ ٱللَّهَ أَنزَلَ مِنَ ٱلسَّمَآءِ مَآءً فَسَلَكَهُۥ يَنَٰبِيعَ فِى ٱلْأَرْضِ ثُمَّ يُخْرِجُ بِهِۦ زَرْعًا مُّخْتَلِفًا أَلْوَٰنُهُۥ)الزمر الآية 21(

وَإِنَّ مِنَ ٱلْحِجَارَةِ لَمَا يَتَفَجَّرُ مِنْهُ ٱلْأَنْهَٰرُ ۚ وَإِنَّ مِنْهَا لَمَا يَشَّقَّقُ فَيَخْرُجُ مِنْهُ ٱلْمَآءُ وَإِنَّ مِنْهَا لَمَا يَهْبِطُ)البقرة الآية 74(

Table 1. Derivation Types and Short Meaning

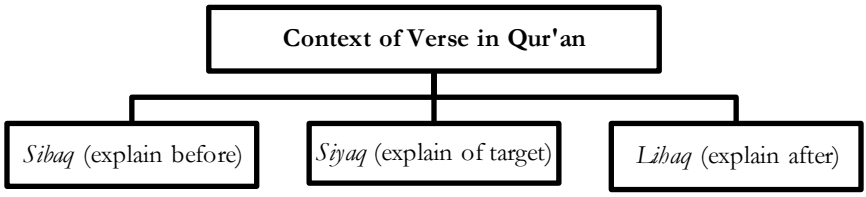
No	Word	Derivation	Explanation & Meaning
1.	*Salaka*	*Fi'lu Al-Māḍī*	Verb meaning is *ānfaḏzahā fīhā* "Apply" or *Dakhala* "Enter" (Al-Jamal, 2003).
2.	*Yanabi'a*	*Ism Jama'*	Jama' from Yanbu' in *Fiʿlu Al-Māḍī* is *na-ba-ʿa* meaning underground water or spring (Al-Zuhaili, 1991). *al-Jadwal yajrī fīhi al-māʾ* "the table full of water" (Al-Jamal, 2003).
3.	*Yukhraju*	*Fi'lu Al-Mājhul*	Passive verb or *Fiʿlu Al-Mājhul* from *Kharaja* meaning is *Baraza Minhu* "It emerged from it" (Al-Jamal, 2003).
4.	*Khijarah*	*Ism Jama'*	Jama' from *Hajar* "rock" or *al-mādah al-ṣulbah al-maʿrūfah allatī tattakẖiḏu min al-jibāl* "The known solid material that is formed from mountains" (Al-Jamal, 2003).
5.	*Yatafajjaru*	*Fi'lu Mudhari'*	Verb meaning is *yakẖruju wayanbaʿu bikaṯsrah* "It comes out and springs abundantly" (Al-Zuhaili, 1991). Or refers to bursting open with abundance and copiousness (Al-Zamaẖšyarī, 1987).
6.	*Al-Anhar*	*Ism Jama'*	Jama' from *Nahr* meaning *al-ʾuẖdūd al-wāsiʿ al-mustaṭīl fī al-ʾārḍi yajrī fīhi al-māʾ* "wide rectangular groove in the ground through

			which water runs" (Al-Jamal, 2003).
7.	*Yasyaqqaqu*	*Fi'lu Mudhari'*	Verb meaning is *yatafattaḥu šyuqūqān ṭaūlān āū ʿarḍān* "It opens up cracks lengthwise or widthwise" (Al-Zuhaili, 1991).
8.	*Yahbitu*	*Fi'lu Mudhari'*	Verb meaning is *yanẓilu min ʿulū īla āsfal* "descend from high to low" (Al-Zuhaili, 1991).

Siyaq Analyze

Context in Arabic Siyaq meaning by derived from a root that implies direction or guidance (Ahmad, 1998). Refers to the linguistic environment where a language unit, like a word or sentence, interacts with both linguistic and non-linguistic elements (Zubaidi, 2019). This theory is utilized in Qur'anic research for two primary reasons: first, it is crucial for grasping the speaker's intent; second, it helps identify the speaker (Al-Zarkašī, 1957). The core principle of this theory is that understanding the discourse in relation to its surrounding context is more effective than interpreting it in isolation. This theory aims to: first, identify and describe the audience; second, explain the semantics of words and structures; and third, analyze the use of pronouns (Shahrānī, 2016). In this discussion, the researcher will examine the context by first providing a detailed explanation of the I'rab (parsing) of the verse and exploring its meaning based on the opinions of scholars. Following this, the researcher will use three classifications to identify the type of internal context with explain about Sibaq, Siyaq and Lihaq for best result of discussion this theory:

Table 2. Siyaq Theory in Qur'an



Siyaq Discussion Surah Az-Zumar [39] Verse 21 (أَلَمْ تَرَ أَنَّ ٱللَّهَ أَنزَلَ مِنَ ٱلسَّمَآءِ مَآءً) This statement is introduced as an independent sentence aimed at illustrating the transient nature of worldly life and its swift disappearance. The interrogative particle أَلَمْ "Have you not?" is used for rhetorical questioning, with لَمْ serving as a particle of negation, inversion, and making the verb following it in the jussive mood (Ad-Durrah, 2009). The verb تَرَ "see" is in the jussive mood, with the sign of jussiveness being the omission of the final vowel, and its subject is implied as "you" (Al-Zuhaili, 1991). The phrase أن "that" along with what follows functions as a substitute for the two objects of تَرَ "see", or as its object because it is a verb of the heart "i.e., cognitive" or perception. أنزل "sent down" is the predicate of أن and مِنَ السَّماءِ "from the sky" is connected to أنزل "sent down" while ماءً "water" is the direct object (Ad-Darwiyš, 2009). Allah sent down water from the sky (Ibn ʿāšyūr, 1984). which is identified as rain. It is also said that all water on earth originates from the sky, descending into the rocks (Al-Zamaẖšyarī, 1987).

(فَسَلَكَهُۥ يَنَٰبِيعَ فِى ٱلْأَرْضِ) The phrase فَسَلَكَهُ "and made it flow" begins with a coordinating conjunction فَ and سلك "made flow" is a past tense verb, with its subject implied as "He" referring to Allah (Al-Zuhaili, 1991). ينابيع "as springs" if understood as meaning source, would be an adverbial phrase for the omitted gerund, indicating "He made it flow as a flowing into springs". Since this phrase stands in for the gerund, its accusative case is explained by this substitution. If ينابيع "springs" is understood as gushing, it would be in the accusative case, functioning as a circumstantial phrase, meaning flowing as springs

(Ibn ʿāšyūr, 1984). Al-Shihab al-Khafaji raised an objection to the circumstantial interpretation, arguing that in this case, it should have been expressed as from the earth and in the earth. This would make في الأَرْضِ an attribute of ينابيع in both interpretations. However, I do not see a problem with considering ينابيع as a specification, similar to the phrase "We caused the earth to gush forth with springs" (فجرنا الأرض عيونا). None of the scholars who analyzed the Quran's grammar mentioned this point (Ad-Darwiyš, 2009).

Al-Zamakhshari's explicit statement supports this interpretation: then God allocates this water, channeling it into springs within the earth forming springs or underground water, pathways, and streams, akin to veins in living bodies (Al-Zamaẖšyarī, 1987). Many refrained from parsing ينابيع due to its complexity. In Al-Shawkani's commentary, he states and made it flow as springs in the earth: that is, He introduced and settled it there. ينابيع is the plural of ينبوع "spring". from the verb نبع الماء "the water sprang forth". ينبوع means a water spring and refers to the places where water springs forth, so according to the second interpretation, it is accusative due to the omission of the preposition (Ad-Darwiyš, 2009). Ibn Asyur said: He made it into springs and wells in the earth or The water entering the ground (Ibn ʿāšyūr, 1984). Allah causes water to descend from the sky, which subsequently permeates the earth. The Almighty then distributes it throughout various regions of the earth according to His will, making it emerge as springs and wells of varying sizes, corresponding to the necessity (Ibn Katsir, 1998). (ثُمَّ يُخْرِجُ بِهِۦ زَرْعًا مُّخْتَلِفًا أَلْوَٰنُهُ) Then He brings forth with it crops of different colors: ثم is a particle for sequential ordering with delay. يخرج "He brings forth" is a present tense verb, and the shift to the present tense instead of the past is for vividness. به "with it" is connected to يخرج and زرعا "crops" is the direct object. مختلفا "different" is an adjective for زرعا and ألوانه "its colors" is the subject of مختلف (Ad-Darwiyš, 2009). The water make varies of agricultural growth in colors, manifesting in

shades of green, red, yellow, white, and others (Al-Zamaẖšyarī, 1987). The phrase 'then He brings forth crops with it' (ثُمَّ يُخْرِجُ بِهِ زَرْعاً) employs the particle thumma (ثُمَّ) to indicate a gradual progression in time or significance, as is customary in connecting sentences (Ad-Durrah, 2009). This is because the emergence of crops from the earth after it has become barren has a greater impact on people's hearts, as it is more apparent to their eyes and more beneficial to their livelihood, being the primary purpose of the rain (Ibn ʿāšyūr, 1984). The water exhibits diverse forms agricultural plant growth from tastes, scents, and benefits. Over time, however, it undergoes a process of withering; after its initial freshness and vigor, it begins to age, ultimately turning yellow (Ibn Katsir, 1998).

Siyaq Discussion Surah Al-Baqarah [2] Verse 74 (وَإِنَّ مِنَ ٱلْحِجَارَةِ لَمَا يَتَفَجَّرُ مِنْهُ ٱلْأَنْهٰرُ) word و "waw" is a resumption particle, and إِنَّ "inna" is a particle that introduces a statement. the prepositional phrase مِنَ الْحِجارَةِ "min al-hijarah" is related to an implied predicate, which is placed before the subject (Ad-Durrah, 2009). (لَما), where the لام "la" is the emphatic "laam" that has been displaced, and ما "ma" is a relative pronoun serving as the delayed subject of يَتَفَجَّرُ "yatafajjar" is a present tense verb in the indicative mood, and the clause مِنْهُ "from it" is connected to يَتَفَجَّرُ (Ad-Darwiyš, 2009). The subject الْأَنْهارُ "al-anhar" means the rivers, is the subject of يَتَفَجَّرُ. Al-Tafajjur (التفجر) refers to bursting open with abundance and copiousness. Malik ibn Dinar read it as yanfajir (ينفجر) with a "nun" (Al-Zamaẖšyarī, 1987). Meaning when the water is compressed by its own weight due to accumulation or by other pressures such as from underground air, it seeks an outlet. If it encounters a rocky or clay layer, it rises to the surface there. when these springs converge in one place, they give rise to rivers (Ibn ʿāšyūr, 1984). (وَإِنَّ مِنْهَا لَمَا يَشَّقَّقُ فَيَخْرُجُ مِنْهُ ٱلْمَآءُ) this phrase is connected to the first إِنَّ "inna". From them الحجارة the prepositional phrase مِنْها "minha" serves as the predicate before the subject (Ad-Durrah, 2009). (لَما) the لام is the emphatic "laam," and ما

"ma" is a relative pronoun serving as the delayed subject of يَشَّقَّقُ "yashaqqaq" is a present tense verb in the indicative mood. فَيَخْرُجُ "fayakhruju" is coordinated with يَشَّقَّقُ "yashaqqaq" (Ad-Darwiyš, 2009). Yashaqqaq (يَشَّقَّقُ) means "to split apart", as read by Al-A'mash. The meaning is that some stones have wide openings through which abundant water flows, while others split either lengthwise or crosswise, from which water also springs forth (Al-Zamaẖšyarī, 1987). meaning when sandstone absorbs water, but rocks and clay do not allow water to pass through unless the rocks contain calcareous materials. If the water carries with particles of carbonic acid, it can dissolve the lime, creating holes in the calcareous rocks through which the water bursts forth, forming underground water. as seen in wells, or into a layer beneath, where it remains stored until it is released by one of the aforementioned processes (Ibn ʿāšyūr, 1984). (وَإِنَّ مِنْها لَما يَهْبِطُ) word يَهْبِطُ "yahbitu" means fall down, acting as a causal explanation for the action (Ad-Darwiyš, 2009). Yahbit (يَهْبِطُ) means "to descend" or "to fall from the top of the mountain". It is also read with a "dammah" on the "ba" (Al-Zamaẖšyarī, 1987). with another definition that this word is included in the Majaz 'Aqli for Kafir, namely it is likened to water falling from top to bottom or means waterfall (Ibn ʿāšyūr, 1984). Ibnu katsir said some descend from the mountain tops out of fear of Allah, indicating an awareness of this, each according to its capacity (Ibn Katsir, 1998). Together, these verses illustrate the Qur'anic view of nature as a complex, interconnected system where water plays a pivotal role in sustaining life and symbolizes the varying manifestations of divine will.

The analysis of verses through the Siyaq theory reveals a Qur'anic depiction of water as a symbol of divine orchestration in nature. Surah Az-Zumar [39]: 21 illustrates the process of water descending from the sky, nourishing the earth, and leading to varied agricultural growth, representing the transient nature of worldly life. Meanwhile, Surah Al-Baqarah [2]: 74 highlights different reactions of stones to water, symbolizing the diversity in how creation responds to

divine influence from rivers bursting forth to gentle springs emerging. Together, these verses underscore the intricate and purposeful design in nature as willed by the Allah. The Siyaq theory helps uncover the deeper meanings behind these natural phenomena, offering a comprehensive perspective on the divine wisdom embedded in the natural world.

Table 3. Result of Siyaq Theory

Surah & Verse Lafadz Purpose Analysis of Siyaq Theory

Surah & Verse	***Lafadz***	**Purpose Analysis of *Siyaq* Theory**
Az-Zumar [39]: 21	أَنَّ ٱللَّهَ أَنزَلَ مِنَ ٱلسَّمَآءِ مَآءً	water falls from the sky (rain)
	فَسَلَكَهُۥ يَنَٰبِيعَ فِى ٱلْأَرْضِ	water enters the ground (Underground water)
	ثُمَّ يُخْرِجُ بِهِۦ زَرْعًا مُّخْتَلِفًا أَلْوَٰنُهُۥ	Plants come out in different colors (Agricultural Growth)
Al-Baqarah [2]: 74	وَإِنَّ مِنَ ٱلْحِجَارَةِ لَمَا يَتَفَجَّرُ مِنْهُ ٱلْأَنْهَٰرُ	water flow that presses through a river (river with high flow)
	وَإِنَّ مِنْهَا لَمَا يَشَّقَّقُ فَيَخْرُجُ مِنْهُ ٱلْمَآءُ	water coming out from spring (Underground water becomes the upstream of the river)
	وَإِنَّ مِنْها لَما يَهْبِطُ	water falling from top to bottom (waterfall)

The table of verses analyzed through the lens of the Siyaq theory (context theory) demonstrates a nuanced understanding of how water and its effects are described in different Qur'anic contexts. Surah Az-Zumar [39]: 21 highlights the stages of water descending

from the sky, seeping into the earth, and leading to agricultural growth, emphasizing the divine orchestration of natural processes. This is portrayed as a metaphor for the transient nature of worldly life, where water symbolizes sustenance that eventually leads to the flourishing of plants, each with distinct colors and benefits, before withering. In contrast, Surah Al-Baqarah [2]: 74 focuses on the different reactions of stones to water, symbolizing varying responses to divine influence. Some stones burst forth with rivers, representing an abundant and visible flow of life. Others merely crack, allowing water to seep out, indicating a subtler emergence of life. Finally, some stones descend from mountain tops, metaphorically expressing submission to divine will. This verse suggests a spectrum of natural phenomena, from the powerful flow of rivers to the gentle seepage of springs, all orchestrated by divine command.

Science Qur'an Analyze

The term I'jaz Ilmy, often referred to in the Qur'an, is derived from two words: I'jaz, meaning miracle, and Ilmy meaning science (Ibn-Manẓūr, 2009). The root عجز ʿain - jim - zai transforms into أعجز a'jaz, to be unable, and further into إعجاز i'jaz, miracle with the addition of alif (Al-Ḥamṣī, 1980). In this context, it conveys the idea of an extraordinary phenomenon that demonstrates divine superiority and serves as a challenge to mankind, confirming the prophethood (Al-Mushlih, 2008). The word science originates from the root علم knowledge and contrasts with ignorance, signifying one of Allah's attributes as the All-Knowing (Ibn-Manẓūr, 2009). Science broadly encompasses the understanding of reality, including various fields like earth and language sciences, and extends to natural sciences grounded in experimentation and observation (Anis et al., 1972).

I'jaz Ilmy term which combines the words miracle and scientific. refers to excellence in understanding scientific and theoretical information (Muḥammad, 2011). It specifically relates to interpreting the verses of the Qur'an and hadith within the context of knowledge

about the universe, with the aim of reinforcing faith in Allah as the Creator (Najjār, 2012). The science of miracles refers to the Qur'an's presentation of facts that have been validated by recent experimental research, which were not accessible to people through human means during the time of the Prophet Muhammad (Al-Zandānī, 2008). To take steps to apply the study of the science of the Qur'an, a very deep understanding of the language is required especially for interpretate text qur'an, then researching the sources of the interpretation of the Qur'an and looking for relation with new scientific phenomena.

Mufassir Interpretation

ʿAbdullah bin Abdul Aziz Al-Mushlih as Professor in Study Qur'an make a book under the tittle "Al-I'jaz Al-'Ilmiy Fi Al-Qur'an wa As-Sunnah" discus about correlation underground water concept in surah Az-Zumar verse 21 and Al-Baqarah verse 74. According to him when rain falls on the ground, a significant portion of it moves downward to settle beneath the surface in underground reservoirs. This is why humans dig wells in arid deserts with scarce rainfall. Today, people know that some rocks contain pores or voids, while others do not; those without are called non-porous. Porosity refers to the presence of voids in the rock, which is the primary factor in storing water underground. Permeability, the second factor, indicates the presence of channels or passages, such as cracks, through which water moves in underground reservoirs. If rocks did not have pores, cracks, or openings, water could not be stored. The water that falls on the ground can only be stored if there are such cracks. Due to osmotic pressure, groundwater is under high pressure, so when it emerges in a low-lying area, it bursts forth (Al-Mushlih, 2008). This is because rocks that store water may burst forth rivers due to immense internal pressures, such as the pressure of the stored water, or due to external pressures, or both. One of the significant external pressures comes from the movement of tectonic plates in the Earth's crust (Najjār, 2008).

Ar-razi state Allah sends down water from the sky, which is rain, and it is said that everything on earth originates from the sky. He then directs this water to various locations and divides it, channeling it into springs within the earth. This means He introduces and organizes it into springs, pathways, and streams, much like veins in the body. Through this water, He causes plants to grow with different colors, such as green, red, yellow, and white, among others (Ar-Razi, 2004). The water properties of soil and rocks vary according to their physical characteristics. For instance, clay rocks change in form depending on the amount of water they contain; they transform from solid or semi-solid rocks to a completely fluid state as the water content increases. This change allows for the assessment of their ability to withstand external loads and their stability on slopes or their likelihood of sliding down. When fine pores in rocks absorb water, the rock can swell and change shape. If the water is subsequently drawn out, the rock contracts, often resulting in cracks and fractures. If the rock has stored a significant amount of water, this process can cause the release of the water (Najjār, 2008).

Tantawi Jauhari state Yanabi'a is which are the sources or channels found beneath the earth, carry substantial amounts of flowing or stored groundwater. This illustrates that Allah, in His wisdom, sends abundant rain from the high clouds in the sky and directs it into springs and channels within the earth. These springs and channels can be either visible on the surface or hidden underground. This process exemplifies Allah's immense power and mercy towards His creation. Furthermore, Allah reveals another aspect of His power by explaining that this rainwater, which He has skillfully managed, results in the growth of plants with varying colors and forms such as green, yellow, and others demonstrating His perfect ability and creative power (Ṭanṭawī, 1992).

Al-Baqarah verse 74 discussed about the bursting forth of water from the earth, specifically from rocks, is confined to these two conditions. This aligns with what has been established in the field of

physical geography, where it is understood that water descending onto the earth gradually penetrates it, as water naturally moves downward due to gravity (Ibn ʿāšyūr, 1984). Water in the seas has an upper level known as sea level, which serves as a reference point for measuring elevations above or depressions below it. Similarly, water flowing in rivers and lakes has levels that vary from place to place, and underground water also has a level called the groundwater level, which also varies by location. When water recedes in a river, lake, or groundwater reservoir, it becomes difficult for humans to access it. Throughout Earth's history, sea levels have risen and fallen, with the seas encroaching on and retreating from the land during different geological ages (Al-Mushlih, 2008).

Water may also find an opening in its path before or after entering the rocks, leading to its emergence at the surface of the rocks it flows over. Additionally, water may encounter depressions within the earth where it settles, and when more water joins it, it seeks an outlet, following one of the previously mentioned routes. This is why rivers often burst forth following earthquakes (Ibn ʿāšyūr, 1984). Out of His mercy, Allah stores water underground in quantities more than thirty times greater than all the water in the world's rivers and lakes combined. In His magnificent creation, Allah has provided abundant freshwater reserves beneath the earth's surface, benefiting those who dwell in mountains as well as those living in deserts, plains, and valleys. The truth indicated by these Qur'an verses could not have been known by humans without the use of remote sensing technology and satellites. Through these means, it was discovered that the subterranean reservoirs represent a vital water reserve for the future, with some of this water being stored in the pores of rocks, which function as a massive natural filter and purifier. These water sources can extend far, as seen in the case of Zamzam water. Herein lies another scientific miracle in Qur'an "Hijarah" The meaning is not all stones, but some of them (Al-Mushlih, 2008).

It is now scientifically established that the water stored in the Earth's rocks, as decreed by Allah (Exalted and Glorified), originates entirely from rain that Allah has sent down over extended periods of time. This water moves vertically through surface saturation zones and then horizontally or obliquely until it is stored in subterranean reservoirs prepared by divine wisdom. This storage can last for thousands of years, potentially replenished annually by rain or not. During its movement beneath the Earth's surface, this stored water may encounter faults, fractures, or cracks, which cause it to rise to the surface as springs or water sources (Najjār, 2008).

The emergence of diverse plants and crops, all nourished by a single source of water, highlights the exceptional ability bestowed by Allah to each plant to select the nutrients and compounds it requires from the soil. Without this divine creativity in encoding the genetic blueprint for each plant species and indeed, each individual plant the Earth would not be able to produce vegetation. Moreover, without the rain from the sky, this genetic blueprint would remain inactive. The ability given by Allah to the germinating seed to absorb water, expand in size, and exert immense pressure on its seed coat, causing it to crack and burst, is essential for the growth of the seeds. Similarly, the interaction between the soil and the rainwater where the soil absorbs and swells, becoming sufficiently pliable enables the tender, moist shoot emerging from the seed to reach the surface of the Earth (Najjār, 2008).

Scientist Theory

From the many discussions about underground water, scientists agree on the theory that the existence of water in the ground is very useful for the lives of all living things (Green, 2011). The Earth's water is endlessly recycled in the hydrological cycle, a process often known simply as the water cycle. A drop of water can complete one cycle in less than a day or it can take millions of years. During this time, the water changes states between liquid, gas, and solid

(Spilsbury, 2010). Water fall from sky seeps through the soil, moving along cracks and filling the spaces between soil particles. Some of the water is taken up by plant roots, but the rest moves deeper still. Eventually, the ground holds as much water as is possible with all the spaces filled with water. When this happens, the ground is described as being saturated (Morgan, 2012). Ground filled with water is called an aquifer. The top of the aquifer is called the water table. In wet weather, the water table is closer to the surface. In dry weather, it is farther down. people can reach the water table by digging a well (Green, 2011).

The study of groundwater flow through porous media is important for several related disciplines, including groundwater hydrogeology, contaminant transport, reservoir engineering, chemical engineering and, more recently, earthquake hydrology (Wang & Manga, 2021). Winding its way gently and silently through tiny spaces, water slowly travels through the rocks underground. Water is found at some depth everywhere beneath the land surface. Most of this water is rain that soaked into the ground after a shower and was not immediately used up by plant roots. Some rainwater passes through the underground rocks quickly and emerges only a few hours, days, or weeks later at a spring seeping out into a river valley. Sometimes the water stays underground for many thousands of years, either because it travels a long way or because it travels slowly. During such a long time in the rocks, water usually picks up and dissolves minerals from the rocks. In this way, the water can widen cracks in the rock until eventually an enormous underground cave forms. Underground rivers run through some caves (Van Rose, 1994).

Among the underground water there are standardizations for its use so that not all of it can be consumed directly (Nielsen & National Water Well Association, 1991). because scientists have researched that the levels of each water are different in terms of their content because each sediment contains bacteria (Kanematsu, 2015). as the groundwater system is usually divided into three parts: the zone

of aeration, the zone of saturation, and, between them, the fluctuating water table. Water percolates downward through the zone of aeration, where air fills most of the openings between soil and rock particles. Eventually a depth is reached below which all openings are filled or saturated with water; this is the zone of saturation. The depth where the two zones meet is the water table. The fluctuating water table varies due to changes in precipitation. During dry seasons or years, the water table drops; during wet seasons or years, the water table rises (Gabler, 1999).

Water plays a crucial role in the life of the plant. Photosynthesis requires that plants draw carbon dioxide from the atmosphere, and at the same time exposes them to water loss and the threat of dehydration. To prevent leaf desiccation, water must be absorbed by the roots, and transported through the plant body. Even slight imbalances between the uptake and transport of water and the loss of water to the atmosphere can cause water deficits and severe malfunctioning of many cellular processes. Thus, balancing the uptake, transport, and loss of water represents an important challenge for land plants (Taiz & Zeiger, 2010). Plants take in water through their roots. Plants that grow in ponds or lakes have a continuous supply of water all around them. Plants that grow on the land take in water from the soil. If the soil where a plant grows is very dry. its roots may have to grow very deep in order to find enough moisture. In woodland that is full of trees with deep roots, other plants may grow roots just below the surface of the soil. That way they can gather rainwater as it falls, before it soaks away into deeper ground (Richard & Spilsbury, 2009).

The importance of good plant water conditions must be related to the fact that the flux of water is about two to three orders of magnitude greater than the flux of water (Perttu, 1989). concept of water potential in the water relations of plant cells. As plants do not possess an active mechanism to increase the water potential ("water pumps"), water moves only passively, i.e. it follows a decreasing gradient.

Therefore, water transport in the cell is always exergonic (Mohr & Schopfer, 1995). So there is a relationship between underground water and agricultural plant growth, because water is a source for plants to grow and develop.

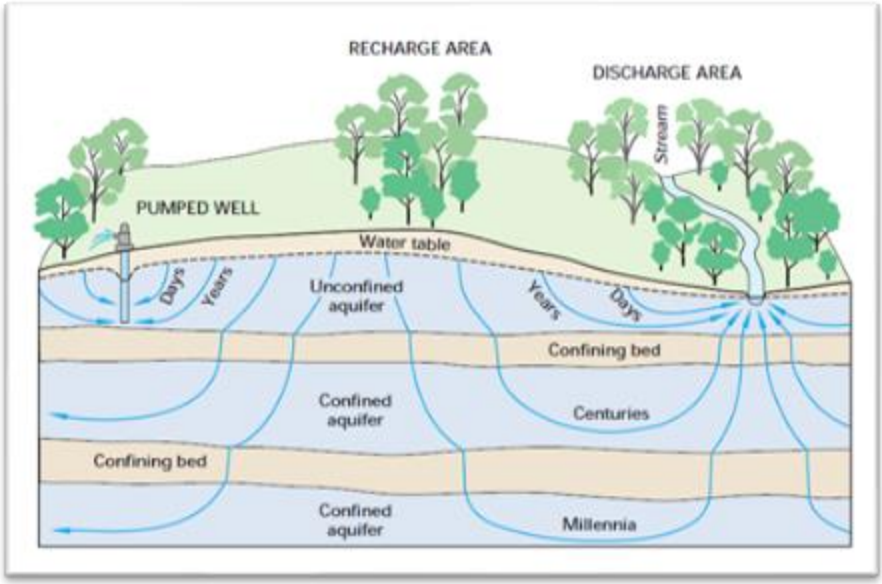
Relation Underground Water Concept with Agricultural Growth in Qur'an

The relationship between underground water and agricultural plant growth as discussed in the Qur'an reveals a profound understanding of the natural processes that sustain life. The concept of underground water, as described in Surah Az-Zumar and Al-Baqarah, highlights the essential role of rainwater in penetrating the earth, where it is stored in subterranean reservoirs. This process, orchestrated by divine wisdom, ensures that water is available even in the most arid regions, supporting both human life and the growth of vegetation. The descriptions provided by scholars like Al-Mushlih, Ar-Razi, and Tantawi Jauhari emphasize that the presence of water within the earth is a miraculous provision from Allah, who has designed the earth's geological features to store and channel water in ways that sustain plant life.

Furthermore, the Qur'anic verses point to the intricate relationship between water and plant growth. The stored underground water, when it surfaces through springs or is drawn out through wells, nourishes plants, enabling them to flourish in a variety of colors and forms. This growth is not just a simple biological process but a manifestation of Allah's creative power, as the water interacts with the soil and the genetic blueprint within each seed to produce life. The varying properties of rocks and soil, such as porosity and permeability, also play a significant role in how water is stored and later released, ensuring that plants have a continuous supply of the essential moisture needed for their survival and development.

The scientific insights into underground water further validate the Qur'anic descriptions, showing how water is stored in the pores and

cracks of rocks, acting as a natural filter and purifier. This water, stored over thousands of years, is a crucial resource for future generations, especially in regions where surface water is scarce. The hydrological cycle, which includes the movement of water through the atmosphere, soil, and underground, is a testament to the wisdom behind Allah's creation, ensuring that the earth remains fertile and capable of supporting diverse forms of life. This intricate connection between underground water and agricultural plant growth underscores the Qur'an's timeless guidance on the essential elements that sustain life on earth.



Picture 1: Hydrologic of Relation Underground Water Concept with Agricultural Plant Growth

Conclusion

The relationship between underground water and agricultural plant growth as described in the Qur'an illustrates a deep understanding of natural processes that sustain life. Verses from Surah Az-Zumar and Al-Baqarah emphasize the critical role of rainwater in penetrating the earth, where it is stored in subterranean reservoirs, ensuring water availability in arid regions. Muslim scholars like Al-Mushlih, Ar-Razi, and Tantawi Jauhari highlight this process as a divine provision, where water stored in the earth nourishes plants, enabling them to flourish in various forms and colors. This growth process is seen as a manifestation of Allah's creative power, where water interacts with soil and the genetic blueprint within seeds to produce life. Scientific insights further validate these descriptions, showing how water is stored in rock pores and cracks, acting as a natural filter and purifier, and serving as a crucial resource for future generations. This connection between underground water and plant growth underscores the Qur'an's guidance on the essential elements that sustain life on earth.

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