

How the Human Needs Evolving into SDGs – Miracle of the Rivers

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ABSTRACT:

Over 7000 years ago, great civilizations started by settlements around the great rivers of the Near East. One of them is the Area called Mesopotamia. The region is broadly defined to include now eastern Syria, south-eastern Turkey, and Iraq. In the narrow sense, Mesopotamia is between Euphrates and Tigris rivers. The world of mathematics and astronomy owes much to the Babylonians—for instance, the sexagesimal system for the calculation of time and angles, which is still practical because of the multiple divisibility of the number 60; the Greek day of 12 "double-hours"; and the zodiac and its signs. The region was the center of a culture whose influence extended throughout the Middle East and the Indus Valley, Far East, Egypt, and the Mediterranean. In this paper, we will describe how different cultures were influenced by the Mesopotamian civilization and their way of Life in harmony with Nature and, later, how we had to take care of our current needs in compliance with Nature.

INTRODUCTION

Rivers are essential to our environment, significantly influencing humanity and science. Rivers have been vital to human health, livelihoods, and development, from providing water for drinking, irrigation, and electricity generation to supporting various ecosystem services like fishery, transportation, and recreation. They have also been the subject of scientific research to understand their hydrology, morphology, ecology, and water quality and quantity, among other aspects, and to solve various human and environmental problems related to climate change, water scarcity, pollution, and restoration. Rivers are, therefore, an important area of study for science as they help to understand the interconnectedness of natural systems and human society.

On the other hand, the first settlements were along the rivers because rivers provided several benefits to early human civilizations. Rivers were a source of water which was essential for survival. Furthermore, rivers offered fertile land and resources for people to cultivate crops. The water from the rivers also provided a mode of transportation for people to trade goods and access other resources. Additionally, rivers provide fish, an important protein source for people living in these settlements.

2. RIVERS AND THEIR INFLUENCES

2.1 Tigris and Euphrates, Mesopotamia

The Tigris and Euphrates rivers of ancient Mesopotamia were not just bodies of water; they were the lifeblood of one of the most influential civilizations in human history. These rivers provided fertile land for agriculture, which allowed for the rise of great civilizations such as Sumer, Akkad, Babylon, and Assyria. The rivers also served as a trade and communication means, fostering cultural exchange and innovation. The rivers inspired the Mesopotamians to create some of the earliest forms of writing, mathematics, astronomy, law, and literature. These advancements were impressive for their time and laid the foundation for modern society as we know it today. However, the rivers were not without their challenges and dangers. Floods, droughts, and invasions posed significant threats to the Mesopotamians, but they rose to the occasion and devised solutions and strategies for survival and prosperity. These challenges only served to strengthen their resolve and ingenuity.

In conclusion, the Tigris and Euphrates Rivers were not just bodies of water. Still, they were the source of Life and knowledge for one of the oldest and most influential civilizations in human history. Their impact on humanity and science cannot be overstated, and their legacy continues to inspire us today.



Fig1 Area of the Fertile Crescent, circa 7500 BC, with main archaeological sites of the Pre-Pottery Neolithic period. At that time, the Area of Mesopotamia was not yet settled by humans. {1}

As shown in Fig 1, one of the settlements around along the so-called fertile Crescent is Göbekli Tepe, which is located in Upper Mesopotamia, the birthplace of the world's earliest farming communities; these are monumental structures that hunter-gatherers erected during the Pre-Pottery Neolithic period. These structures, interpreted as massive communal buildings or enclosures, were likely used for social events and rituals. This property presents monumental round-oval and rectangular megalithic structures erected by hunter-gatherers in the Pre-Pottery Neolithic age between 9,600 and 8,200 BCE. These

monuments were probably used in connection with rituals, most likely funerary. Distinctive T-shaped pillars are carved with images of wild animals, providing insight into the way of Life and beliefs of people living in Upper Mesopotamia about 11,500 years ago. [UNESCO,2002]



Fig 2. One of the T-shaped pillars (courtesy. O. Altan2022)

The Babylonians later settled in the Area and significantly contributed to mathematics and astronomy. Their sexagesimal system, which uses the number 60 for time and angle calculations, is still practiced today. They also introduced the Greek day of 12 double hours, the zodiac, and its signs. However, the origins and routes of some of their borrowings remain obscure, such as the survival of ancient Mesopotamian legal theory.

The Mesopotamian civilization was remarkable in its moral, aesthetic, scientific, and literary aspects. Legal theory was sophisticated early on and expressed in several collections of legal decisions, including the famous Code of Hammurabi. The ruler's concern for the weak, the widow, and the orphan is evident throughout these codes, even if some phrases were only literary clichés. Mesopotamian art had specific peaks, such as the art of Uruk IV, the seal engraving of the Akkad period, and the relief sculpture of Ashurbanipal. However, Egyptian art was more sophisticated.

Mesopotamian science was characterized by meticulous enumeration and ordering into columns and series, with the ultimate ideal of including everything in the world. However, they did not have the wish or ability to synthesize and reduce the material to a system. Not a single general scientific law has been found, and the use of analogy was rare. Nevertheless, their achievement in discovering Pythagoras' law, which states that the sum of the squares on the two shorter sides of a right-angled triangle equals the square on the longest side, is highly commendable.

Overall, the Babylonians and Mesopotamians left a lasting impact on the world of mathematics, astronomy, and legal theory. Their art, science, and literary achievements are also noteworthy, even if they did not reach the same level of sophistication as other civilizations.

2.2 The Nile River

The Nile River is a majestic and awe-inspiring natural wonder that has captivated the hearts and minds of people for thousands of years. It is one of the longest and most important rivers in the world and has been a source of Life, culture, and civilization for countless generations. But did you know that the Nile River has also played a pivotal role in the development of science?

Throughout history, the Nile River has enabled and inspired numerous scientific contributions that have shaped the course of human progress. From astronomy to chemistry, the Nile River has catalyzed innovation and discovery.

Let's take a closer look at some of how the Nile River has influenced the development of science:

Astronomy: The ancient Egyptians were master astronomers who used the stars and planets to predict the annual flooding of the Nile, which was essential for agriculture. They also developed a sophisticated calendar based on the lunar and solar cycles and aligned their monuments and temples with celestial events.

Mathematics: The ancient Egyptians were pioneers in mathematics, using it to measure land, calculate taxes, design buildings, and solve problems. They invented hieroglyphic numerals, fractions, geometry, algebra, and trigonometry. They also used a decimal system and a unit of length based on the human body.

Medicine: The ancient Egyptians were skilled physicians who practiced medicine based on empirical observation, experimentation, and rational thinking. They diagnosed and treated diseases, performed surgeries, used herbal remedies, and wrote medical texts. They also studied anatomy, physiology, pharmacology, and dentistry.

Engineering: The ancient Egyptians were master engineers who built monumental structures such as pyramids, temples, tombs, and obelisks using advanced techniques. They also constructed irrigation systems, canals, dams, bridges, and boats to harness the power of the Nile River. They invented tools such as ramps, levers, pulleys, and cranes.

Chemistry: The ancient Egyptians used chemistry to produce cosmetics, perfumes, paints, dyes, glazes, glass, metals, alloys, and explosives. They also developed the art of mummification to preserve the bodies of the dead using chemicals such as natron, resin, oils, and spices.

These are examples of how the Nile River has influenced the science of humanity. The Nile River is a natural wonder and a cultural and scientific legacy that inspires us today.

On the other hand, the Library of Alexandria, founded on the delta of the Nile River, was one of the most important centers of knowledge in the ancient world. Built in the 3rd century BCE, it was a vast collection of scrolls and books that contained the sum of human knowledge at the time. The library provided excellent philosophy, science, literature, and art knowledge. It was a hub of scholarship and learning, attracting intellectuals from all over

the world. The library played a significant role in spreading knowledge throughout the ancient world, and its legacy is still felt today.

The Library of Alexandria had a profound impact on the Western world. It was responsible for the preservation and dissemination of knowledge from various cultures. Scholars would come to the library to study and translate texts from different languages, such as Greek, Latin, and Arabic. The knowledge they acquired influenced the development of many fields, such as medicine, mathematics, astronomy, and philosophy. The works of great thinkers such as Plato and Aristotle were also preserved in the library, contributing to the development of Western philosophy. (Pollard, Justin, and Reid, Howard. 2006)

2.3 The Chinese Rivers

China's rich history of scientific and technological achievements is closely intertwined with its rivers. The Yellow River, the Yangtze River, and the Pearl River are the three major river systems that have nurtured China's civilization and culture. These rivers have also profoundly impacted the development of various fields of science, including astronomy, geography, hydrology, engineering, agriculture, medicine, and ecology.

The ancient Chinese were astute observers of the celestial bodies that moved along the Yellow River. They pioneered a sophisticated calendar system and astronomical instruments ahead of their time. Along the Yangtze River, the ancient Chinese meticulously mapped the terrain and climate of the regions, establishing the principles of geomancy and feng shui. These principles have been used for centuries to create harmonious living spaces and promote good fortune.

The Pearl River was the site of many engineering marvels, including dams, canals, and irrigation systems. These innovations improved water management and agriculture techniques, allowing for greater crop yields and more efficient use of resources. The ancient Chinese also discovered and used various herbs and minerals along the rivers, creating a rich tradition of herbal medicine and pharmacology, still practiced today.

In conclusion, China's rivers have played a crucial role in shaping its scientific and technological achievements. From astronomy to medicine, the influence of these rivers can be seen in every aspect of Chinese culture. The ancient Chinese studied the flora and fauna of the river ecosystems and contributed to the fields of botany, zoology, and ecology.

Moreover, the rivers in China have provided natural resources and inspiration for scientific inquiry and facilitated cultural exchange and communication among different regions and peoples. The rivers in China have been a source of both challenges and opportunities for science throughout history. As we continue to explore the mysteries of the Universe and the natural world, we can look to China's rich history for inspiration and guidance.

3. HUMAN NEEDS THROUGH THE CENTURIES

3.1 Human Needs at the Beginning of Life

We can look at the basic biological and psychological needs that have evolved to answer what humans need. According to Maslow's hierarchy of needs, humans have five categories of

needs: physiological, safety, belongingness, esteem, and self-actualization.

Physiological needs include food, water, air, and sleep. Safety needs are related to physical and emotional security, such as shelter, health, and stability. Belongingness needs are about social connection and acceptance, such as family, friends, and love. Esteem needs are about self-respect and recognition, such as achievement, competence, and status. Self-actualization needs are about fulfilling one's potential and creativity, such as growth, learning, and expression.

At the beginning of Life, humans may have prioritized physiological and safety needs over the other categories as they faced harsh environmental conditions and threats from predators and other humans. However, as humans developed culture, language, and technology, they may have pursued higher-order needs, such as belongingness, esteem, and self-actualization. Therefore, the needs of humans at the beginning of Life were not static or fixed but dynamic and adaptive to their changing circumstances.

In conclusion, understanding the basic needs of humans can help us better understand their behavior and motivations. As humans evolve and adapt, their needs will also change and develop.

3.2 Human Needs during the Middle Ages

During the Middle Ages, humans had many needs that shaped their lives and societies. These needs ranged from basic necessities such as food, water, shelter, clothing, and healthcare to more complex requirements such as security, justice, religion, education, and culture. How these needs were met varied greatly depending on social status, geographic location, political situation, and historical context.

For instance, peasants relied on farming and trade to sustain themselves, while nobles enjoyed the privileges of land ownership and feudal rights. The church provided spiritual guidance, moral authority, social services, and education. Meanwhile, monarchs and lords-maintained law and order but also waged wars and conflicts. Merchants and artisans contributed to economic growth and innovation but faced competition and regulation. Scholars and artists preserved and transmitted knowledge and culture but challenged and criticized established norms.

The needs of humans during the Middle Ages were diverse and dynamic, reflecting the richness and complexity of this historical period. It is fascinating to consider how these needs were met and how they influenced the development of societies during this time. By understanding the various needs of humans during the Middle Ages, we can gain a deeper appreciation for the challenges and triumphs of this era.

During the Area where clerical choices dominate daily Life, another part of the world had other priorities. It is once more the Middle East. The Middle East, the cradle of civilization, contributed significantly to scientific advancements during the Middle Ages. Greek, Persian and Islamic cultures heavily influenced science in the Middle East during this period. Scholars from different fields, including mathematics, astronomy, physics, and medicine, made remarkable discoveries and achievements.

One of the most significant contributions of the Middle East during the Middle Ages was in the field of mathematics. Arab mathematicians invented the concept of modern algebra and trigonometry. Many scholars also contributed to the development of arithmetic, including using decimals and fractions, which was crucial to science and technology. The Arabic numeral system, still used today, was also developed during this period.

Astronomy was another field that saw significant contributions from the Middle East. Scholars from this region made noteworthy developments in studying the stars and planets. They built advanced astronomical instruments and maps, enabling them to predict celestial movements accurately. The Middle East's astronomical discoveries made a vital contribution to the development of modern astrology.

Islamic medicine was also among the most significant contributions of the Middle East to science during the Middle Ages. Scholars from this region made remarkable discoveries in the field, including the development of surgical instruments and anesthesia. They also made significant progress in studying anatomy and physiology, which led to a better understanding of the human body and improved medical treatments.

Physics was another field where the Middle East made significant contributions during the Middle Ages. Scholars made notable discoveries in optics, from using mirrors and lenses to magnify objects to the invention of spectacles to aid vision. They also made inroads in mechanics and the study of light, sound, and equilibrium.

In conclusion, the Middle East significantly contributed to science during the Middle Ages. The advancements in mathematics, astronomy, medicine, physics, and other fields helped shape today's modern world. The achievements of the scholars from this region were a significant contribution to the world, and it is essential to recognize and acknowledge these contributions.

Avicenna (Ibn Sina) and Averroes (Ibn Rust) were the most influential Muslim philosophers of the Middle Ages. Avicenna was born in Uzbekistan in the 10th century and was known for his extensive knowledge of medicine and philosophy. He wrote many important philosophical works, including "The Book of Healing" and "The Canon of Medicine", which became standard medical textbooks in Europe for centuries. Avicenna's philosophy was based on the idea that humans could reason and understand the Universe.

On the other hand, Averroes was born in Andalusia/Spain, in the 12th century and was known for his commentaries on the works of Aristotle. Averroes believed that reason and philosophy were compatible with religious faith, and he argued that it was possible to reconcile the teachings of Islam with the writings of Aristotle. He also believed there was no conflict between the study of philosophy and theology, and both were necessary for a complete understanding of the Universe.

Avicenna and Averroes played a vital role in developing philosophy in the Muslim world, and their ideas significantly impacted European philosophy. Their work inspired many thinkers in the Middle Ages, including Thomas Aquinas, who used their ideas to develop a new synthesis of Christian theology and Aristotelian philosophy. Their legacy lives on today, and their opinions influence philosophers and scholars worldwide. [A. Herbert Davidson, 1992]

3.3 Human Needs during the Industrial Revolution

The Industrial Revolution was a pivotal period in history that brought about rapid economic and social change, transforming the lives of millions of people. During this time, one of the primary needs was to find new sources of energy and materials to power the growing industries and urban centers. Coal, iron, steam, and electricity were crucial resources that enabled the development of factories, railways, and machines. However, this transformation also brought about the need for humans to adapt to new working and living conditions.

This economic shift changed how work was done, goods were produced, and how people related to one another and the planet. This societal reorganization continues, producing several effects that have rippled throughout Earth's political, ecological, and cultural spheres. Below, we will explore some of the significant benefits and shortcomings of the Industrial Revolution.

Let's start with the positive aspects. One of the most significant benefits was that goods became more affordable and accessible to the average person. The rapid evolution of labor-saving inventions also made work more accessible and efficient. Additionally, the Industrial Revolution brought about advancements in medicine, enhancing the quality of Life for many people. The rise of specialist professions also allowed for greater specialization and expertise in various fields.

However, there were also negative consequences associated with this period of rapid change. Overcrowding of cities and industrial towns led to poor living conditions and increased disease. Pollution and other environmental ills also became more prevalent, leading to long-term health and ecological consequences. Poor working conditions, including long hours and low pay, were also a significant issue. Finally, the rise in unhealthy habits, such as smoking and drinking, became more common.

In conclusion, the Industrial Revolution was a time of significant change with positive and negative consequences. While it allowed for significant advancements in technology and medicine, it also led to environmental degradation, poor working conditions, and other societal issues.

As technology advances, the availability of cheap labor-saving devices has increased. While this has made grueling farm-related labor far more accessible and safer, it has also decreased physical activity. Tractors and other specialized vehicles have replaced animal and human power, reducing the amount of healthy exercise people partake in daily. Additionally, professions that required physical exertion outdoors have been replaced by sedentary office work. This trend is also evident in leisure time, as passive entertainment, such as television, dominates. Furthermore, processed foods containing high levels of salt and sugar have become more prevalent, leading to increased lifestyle-related diseases such as heart disease, diabetes, and certain forms of cancer.

It is essential to recognize the impact of these lifestyle trends on our health. As we become more reliant on technology and less active, we must consciously incorporate physical activity into our daily routines. This can be as simple as taking a walk during lunch breaks or taking the stairs instead of the elevator. Additionally, we must be mindful of our food choices and strive to consume whole, unprocessed foods that nourish our bodies.

Making small changes to our daily habits can improve our overall health and reduce the risk of lifestyle-related diseases. We must take responsibility for our well-being and prioritize our health in a world that increasingly values convenience over physical activity.

There were several attempts to define the human needs. One of them is Maslow's pyramid. Maslow, the creator of behavioral psychology, began by creating a classification scheme with the demands of society as a whole as its foundation before moving on to more developed emotions (Maslow 1943). Maslow's hierarchy of needs examines how human behavior is organically motivated. Maslow coined the phrases "physiological," "safety," "belonging and love," "social needs," or "esteem," and "self-actualization" to characterize the pattern through which human drives typically go. In a pyramid he described (Maslow 1943); (see also Figure 3).

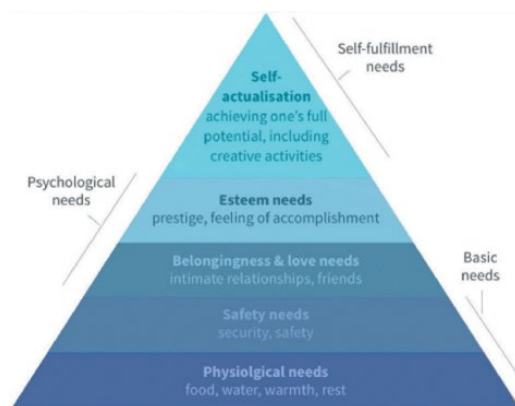


Figure 3. Maslow's hierarchy of needs is a pyramid with the more basic needs at the bottom.

Throughout history, humankind has consistently been driven to fulfill its daily needs. When traditional methods of securing these necessities proved insufficient, we sought alternative routes and sources. This pursuit of security and safety has led to countless developments, such as exploring new continents and establishing sea routes connecting distant regions.

These explorations were often fraught with mistreatment of the inhabitants of newly discovered areas. However, the underlying principle of respecting and worshiping mother nature has remained a constant throughout these endeavors.

While there have been numerous attempts to define human needs, Maslow's theory remains a helpful framework for understanding our motivations and behaviours. As we continue to evolve and adapt, we must remain mindful of our impact on the world and strive to meet our needs sustainably and responsibly.

Later the clashes in Human needs are somehow reflected by the "speech" or "letter" attributed to Chief Seattle has been widely cited as a "powerful, bittersweet plea for respect of Native American rights and environmental values". [ChiefSeattle, Eli Gifford,1989]

Moreover, in the centuries that followed the iconic speech of Indian Chief Seattle, his message of environmental advocacy was regrettably forgotten. Instead, humanity became consumed with a relentless pursuit of power, often at the expense of the majority, and an insatiable desire for financial gain. Tragically, this has resulted in the devastation of our planet and the loss of countless

lives, as evidenced by the two World Wars that ravaged the globe. The Industrial Age transformed the world's belief in the economy as a first parameter, and states were competing to maximize their economic benefit. (Colonialism).

Despite these tumultuous times, geospatial technologies continued to advance at an unprecedented pace, with a primary focus on exploring the potential of our natural resources. However, as we delve deeper into remote sensing and geospatial information sciences, we realize that our basic needs are not the only ones that require attention. Instead, the most pressing issue facing us today is sustainability - the need to ensure that our actions do not compromise the ability of future generations to meet their own needs.

3.4 Human Needs during the Second Part of the Twentieth Century

Following all these awful occurrences, humanity attempted to remember that peaceful cooperation with all nations is unavoidable, and they established several institutions (such as the United Nations or UNESCO).

Still, there was no evidence of understanding that living in balance with Nature is the only way to sustain Life on Earth. If you meddle with acts outside Mother Earth's system, the Earth system replies in a very attentional and persistent manner (Jodlbauer, 1926).

We have observed a movement from cultures based on agriculture and handicrafts to societies based on large-scale industry, manufacturing, and the division of labor since the commencement of the Industrial Revolution in the mid-18th century.

There was a common understanding that we must heed past lessons and embrace a more responsible approach to our relationship with the environment. By leveraging the power of geospatial technologies, we can gain a deeper understanding of the complex interplay between human activity and the natural world and develop innovative solutions that promote sustainable development.

The world leaders realized this fact, and at the G8 Hokkaido Toyako Summit Leaders Declaration, they mentioned under Environment and Climate Change Section:

We reconfirm the significance of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) as providing the most comprehensive science assessment and encouraging the continuation of the science-based approach that should guide our climate protection efforts. We reaffirm our commitment to take strong leadership in combating climate change and, in this respect, welcome decisions taken in Bali as the foundation for reaching a global agreement in the United Nations Framework Convention on Climate Change (UNFCCC) process by 2009. We are committed to its successful conclusion. Enhanced commitments or actions by all major economies are essential for tackling climate change. Therefore, we endorse the positive contribution of the Major Economies Leaders Meeting to the UNFCCC. (G8 Summit).

Furthermore, they quote:

We note the opportunity to promote research on complementary technological approaches which may contribute towards maintaining a stable climate.

To respond to the growing demand for Earth observation data, we will accelerate efforts within the Global Earth Observation System of Systems (GEOSS), which builds on the work of UN specialized agencies and programs, in priority areas, among other things, climate change and water resources management, by strengthening observation, prediction and data sharing. We also support capacity building for developing countries in earth observations and promote interoperability and linkage with other partners.

After all, approaching the new millennium, in 1997, the UN General Assembly agreed to an extraordinary Millennium Assembly and forum. It led to "the Millennium Development Goals," enunciating some of them in their eventual wording and indicating the remaining issues in formulating a definitive set.

The Millennium Development Goals (MDGs) were eight goals established by the United Nations in 2000 to improve global health, education, and poverty reduction by 2015. Some of the significant achievements of the MDGs included reducing extreme poverty rates by more than half, reducing child mortality rates by two-thirds, providing access to improved drinking water sources to over 2 billion people, and ensuring that more girls attend school than ever before. However, some goals, such as reducing maternal mortality rates and ensuring environmental sustainability, fell short of their targets. The MDGs helped raise awareness and mobilize resources to improve global development. However, much work must ensure everyone has equal access to basic human needs and living standards.

Significant strides have been made in implementing the Millennium Development Goals (MDGs), with the initial target of reducing the extreme poverty rate by 50% achieved by 2015. However, progress has not been uniform across all goals. Following the expiration of the MDGs in 2015, the global community remains committed to sustainable development, which balances environmental sustainability, social inclusion, and economic growth. The Rio+20 conference convened in June 2012 to spearhead the creation of the Sustainable Development Goals (SDGs) to build on the MDG's progress and provide a coherent global development framework beyond 2015, as stated on the website <https://www.un.org/sustainabledevelopment/>.

In 2015, the United Nations adopted a set of objectives known as the Sustainable Development Goals (SDGs) to address several pressing global issues, including poverty, hunger, climate change, and inequality. While there has been some success and even some failure in meeting the Sustainable Development Goals (SDGs), considerable progress has been made in certain areas.

One of the Sustainable Development Goals achieved is a considerable decrease in people living in extreme poverty. Before implementing the Sustainable Development Goals, around 10 percent of the world's population lived in abject poverty. However, by 2020, this percentage has fallen to 8.2%, suggesting that the Sustainable Development Goals have helped bring millions of people out of poverty. In addition, progress has been made in terms of access to clean water and sanitation, with an increase in the number of people with access to these fundamental commodities. In addition, there have been efforts made to increase gender equality, and there has been some

progress made in terms of women's representation and participation in the process of decision-making.

On the other hand, there have been several setbacks in accomplishing the SDGs. The widening gap between people's levels of wealth is one of the most significant problems. Income disparities have expanded over the years, with the top one percent of the population having disproportionate wealth. This is the case even if progress has been made in reducing poverty. In addition, the efforts made to mitigate climate change have not been successful, and the worldwide emissions of greenhouse gases have continued to climb. This inability to adequately address climate change poses a substantial danger to achieving many of the Sustainable Development Goals (SDGs) since it hinders efforts to alleviate poverty and promote sustainable development.

In conclusion, implementing Sustainable Development Goals has been met with triumphs and failures. Even though poverty has been reduced, access to water and sanitation has been achieved, and efforts have been made to promote gender equality, challenges such as economic inequality and climate change still exist. To ensure the success of the Sustainable Development Goals (SDGs) and realize a more sustainable and equitable world for all people, governments, civil society groups, and individual people need to maintain their commitments and work together.

4. CONCLUSIONS

According to Shao et al. 2020, urbanization is one of the most significant human activities around the globe. It influences the quality of Urban Life and the sustainable development of cities. The notion known as "Meaning of Life" is described in the following way by Wikipedia: "A meaningful life is a construct having to do with the purpose, significance, fulfillment, and satisfaction of life" (<https://council.science/about-us>). And here is where the human needs come into play, which we touched on in the beginning, specifically the upper portion of the triangle, where we find the self-fulfillment needs (self-actualization: achieving one's full potential, including creative activity). If this is the case, then the concept of self-actualization needs to be understood broader, and its relevance to contemporary culture needs to be emphasized.

We need to understand society's capacity and channel it toward accomplishing global activities so that we may rely on a precisely defined foundation and objective that includes targets and indicators. This can only be achieved by utilizing geoinformatics in GIS, remote sensing, and census data, all obtained from well-defined societal and regional data (Area). Particularly effective is the practice of earth observation (Shao et al. 2019c; Hollwich, Dieckhaus, and Meiners 1926). Crosschecks are essential in this context since the information that can be extracted from data in the modern era cannot be concealed because so many technical advancements can prove the connections between things.

As a result, the wishes (desires) of humans must be satisfied in such a way that their satisfaction is no longer the satisfaction of a solitary need but rather, IT IS A SOCIETAL NEED or, even better, IT IS A GLOBAL NEED.

At this point, we should be moving forward with geoinformatics sciences and technology beyond of their typical application domains and into the realm of developing new partnerships. In this regard, not only the adjacent disciplinary fields but also other disciplinary fields ought to be partners in the investigation of new application sectors.

The study of human behavior, also known as the social sciences, is an emerging field for collaboration. On the other hand, this ought to be supplemented by various projects and working groups. One of the most brilliant minds of our time was Stephan Hawkins, and he once stated, "While physics and mathematics may tell us how the universe began, they are not much use in predicting human behavior because there are far too many equations to solve." Hawkins is one of the greatest geniuses of our time. It is not within the scope of geospatial technologies to solve these equations to forecast human behavior; nonetheless, these technologies can assist in better comprehending the human impact on long-term sustainability "to advance science as a global public good" (Greg and Abbas 2017).

Our deep and honest hope is that the meaning of Life may one day be understood by all humans on this world in the same way that Chief Seattle explained it to us several centuries ago: that we are not alone on this Earth and that our actions, along with those of others, have a significant impact on all of us. On this planet, there is no circumstance in which a human being can live a life that is both sustainable and fulfilling without engaging in some productive activity in a manner that is congruent with the requirements of "others."

The other does not just consist of humans; it comprises every living thing on our planet (and in the Universe). After the days motivated by COVID, we have hope once again to learn that the systems of Earth (and the Universe) are made up of numerous tiny, undetectable systems that are harmoniously contained inside one another and exist in a stable form. This "System of Systems" will react upon us and serve as a reminder of a variety of things in very different ways if we attempt to interact with it and shift the equilibrium away from its stable position. [Altan, Dowman 2021]

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