



# Humanity's Top Ten Existential Concerns

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Some 50 years ago, diverse thought leaders drawn together on a platform known as “Club of Rome” shared a profound concern for the long-term future of humanity and the planet. Acknowledging that humans have only one precious planet Earth, and no other viable alternatives, world leaders came together at a historic UN Summit in September 2015 and adopted the 17 Sustainable Development Goals (SDGs), which resulted from the decades of efforts by scholars and policy makers. Main purpose of the UN 17 SDGs is to tackle climate change, fight inequalities, and end all forms of poverty with no one left behind for a sustainable and harmonious life on Earth. Unfortunately, the humanity has been subjected to even more devastating effects of extreme weathers, life-threatening pathogens, and massive disruptions to the supply of daily essentials food, energy, water, and clean air. Analyzing these reports and imaging the sustainable future for the rest of twenty-first century and beyond, we believe that the following are top ten concerns of humanity (Fig. 1). They call for sincere and pervasive actions for ensuring sustainability of Earth as well as all its living beings, who directly and/or indirectly influence the well-being of humans.

1. **New pathogenic threats:** Although the COVID-19 pandemic has turned into an endemic, monkeypox virus, although previously known, put forward another pandemic threat. One another later story is the emergence of a dangerous variant of the deformed wing virus worldwide, which infects honeybees (Paxton et al. 2022). The new variant has already replaced the original strain of the virus in Europe and is spreading

to other regions of the world and causing entire bee colonies to collapse (Paxton et al. 2022). These kinds of pathogens could cut essential supply to human beings. Besides, many parts of the world started seeing more symptoms of flu likely due to mutated pathogens. These pathogens are dangerous to most living species as they cannot be controlled outside of living species because of their smaller size, enormity in their population, and their ultrafast multiplication rates. Although great resilience has already demonstrated by human beings from many pandemics thought out the history, if not adequately prepared and dealt, inadvertently they have the potential to decimate human race from earth.

2. **Extreme weathers:** Global warming and consequent heat waves impact differently on human lives as sudden floods, forest fires, low agricultural yield, pollution, etc. The greenhouse gas emission keeps increasing despite every nation's promise to reduce it and implementing many policies. One of the major causes of this gap between the set goals and achievements are lack of much improved science-led innovative technological solutions and mechanisms to control emissions (Ramakrishna and Jose 2022). Lately, reports indicate that the atmospheric methane is increasing at a dangerously faster rate (Ed Dlugokencky and GML (gml.noaa.gov, ccgg, trends\_ch4,). Accessed on 7 Sep 2022); methane is at least 28 times as potent as carbon dioxide on global warming, indicating that global warming itself on a catastrophic rise.
3. **Security of essential resources (food, energy, water, and air):** Despite the alarming statistics on the decrease in fertility rate in many countries, the global human population continue to increase. On an average, currently 1 billion new human beings are added to the society in about 15 years, and the world population is expected to reach 8 billion during November 2022. They all need adequate nutritious food, energy, and clean water and clean air for their healthy living. While industrialization and technologies help in enhancing the food production and purifying water, many millions lose their lives

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**Fig. 1** Humanity's top 10 existential challenges (outer circle) which are broadly classified into health, environmental, resources, and society

due to poor air quality. Although technologies help in food production yield and water purification, their affordability to larger communities are scarce. Bad air quality affects everyone equally irrespective of financial status unless the richer preferred to live in isolated, quality environments from birth to death.

4. **Sustainable resourcing:** Since the beginning of the industrial revolution, large quantities of materials required for manufacturing of numerous products have been resourced from earth with or without mining which made larger anthropogenic mass compared to all the living biomass as of 2020. Overexploitation of the terrestrial resources contributed to natural disasters and social costs besides wealth and jobs. Over 185 billion tons of materials are needed in 2050, up from ~84 billion tons in 2015; adversely, the material production contributes nearly 30% of the total greenhouse gas emission. A growing population and consumption thereby demand sustainable resourcing than depending on the finite terrestrial resources.
5. **Sustainable agriculture:** In continuation of the previous concern on sustainable resourcing, many parts of the world have removed the natural arable surface of the earth by concretes and bitumen. Many statistics are in favor of the facts that cities expand, and their population grow continuously along with consumption and waste generation, but with a disappointing consequence of reducing arable land. Besides the urbanization, many parts of the world have

witnessed loss of arable land or making it unsuitable for a particular type of crop. Recent reports show that transportation of food contributes much more carbon emission than that due to transportation of industrial materials (Li et al. 2022), demanding development of agriculture at every part of the world.

6. **Inequality:** Half of the world's emission is by the richest 10 countries and the poorer 50% countries contribute only 10% of the global emissions; similar is the observation from emissions related to food transport — half of transport related emission is by the richest 10 countries. Accumulation of wealth to a very few fractions of the 8 billion population and the associated division of goods and services make the world divided into rich and poor; overprivileged, privileged, underprivileged, and non-privileged; mainstream and marginalized; and so on. This inequality should be addressed expeditiously; otherwise, the countries will slide into the risk of instability.
7. **Social threats:** Similar to “terrorism and war,” social threats are to be considered with grave concern. While some nations suffer from extreme drought, some others have a major portion of their land submerged in flood water; when some countries are suffering from war, weapons being exported or supported to some other countries! Even after witnessing natural warnings, sustainability has not become the subject of discussion of even half of world population or leadership. A recent Nature editorial desperately asks, “Sustainability movement turned to fifty; why are world leaders ignoring it?” (Editorial 2022).
8. **Human values:** Geopolitics and clannish mindsets are eroding human values. It is to be noted that human values are the glue for the humanity to strive together for better future and sustainability. Human values provide a collective purpose and for generations to rally behind, emulate, and strive for. Scholars, policy makers, leaders, and communities uphold human values above everything else. This requires serious, fact-based, unbiased, honest conversations, reflections, and co-exist harmoniously for the sake of present and future generations.
9. **Demographic shifts:** Between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12 to 22%, as the World Health Organization predicts. In other words, in the near future, our societies will shift from scenario of more young people joining the workforce and driving economies to scenario of societies inundated with people who are in mid-life or above. Ensuring a happy life economically, socially, and healthily for this new demographic normal will place significant questions before the society.

10. **Mental health:** All available information points to limited resources in the future for a larger population, which will bring in unhealthy competition to access them and thus will adversely affect the mental health of a considerable population. Furthermore, a growing number of reports point to the adverse effects of climate change and pandemic on the mental health and well-being of human beings. Work-life balance, cost of living, health and well-being, and enlightened self-interests are the drivers of twenty-first-century mindsets; all these factors pose significant threats. Socializing in cyberspace has already shown symptoms of ill-mental health, and the population feeling aloneness while being digitally connected 7/24 h and 365 days are growing!

Aforementioned concerns of humanity call for real attention as well as impactful actions by the material community, scientific community at large, economic community, policy and leadership community, and general community of all walks of life.

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