

"Earth's Carrying Capacity Must be Protected"

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Mahatma Gandhi has rightly said, "The world has enough for everyone's need, but not enough for everyone's greed." It is of no surprise that the planet 'Earth' is the only planet known to this day that can provide all the essentials required for human survival. To our grief, incessantly growing human population and the anthropogenic activities such as the massive extraction of natural resources to run industries, exploitative consumption and less production, unjust water usage and unchecked urbanization have diminished the earth's capacity to support human beings. All the above mentioned activities have pushed the world into an 'Anthropocene Epoch'—where every human activity is detrimental for the environment. It has now become imperative for every human being wandering on earth to take certain measures to mitigate the declining earth's carrying capacity. By following certain strategies such as responsible resource management, safeguarding natural habitats, making population control policies, using calculated

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resources, the risk of decreasing earth's carrying capability can be dwindled. There is a strong possibility that the immediate actions would avert the risk of mass extinction as denying it would be suicidal.

Firstly, it is important to comprehend the meaning of earth's carrying capacity. Making it extremely simple, earth's carrying capacity is the maximum size of population that an environment can sustain indefinitely. Once the carrying capacity exceeds, a severe crash or collapse of a population follows, coupled with rapid environmental degradation. The concept of carrying capacity has been best illustrated by Thomas Malthus. He explained that human population was growing exponentially at very rapid pace, and production of items and resources was extremely low. This would, ultimately, result in a collapse of a population. The massive, unrestrained extraction of resources and incessantly growing population would be deleterious for earth's capacity of supporting human

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and other species survival.

Having discussed the concept of earth's carrying capacity, the upcoming paragraphs would illustrate the major factors that plummeted earth's carrying capacity.

The first and the foremost anthropogenic factor that assaulted the earth's carrying capacity is unchecked population growth. No other species has ever harmed the earth, but the human beings. The unchecked growth of human population is the biggest burden on the natural resources. The more population demands more resources. But this was not the case in the past. There were about one billion people on earth in the beginning of eighteenth century which increased to two billion till the beginning of the 20th century. But the crisis arose when population reached to almost 6.7 billion in the early years of 21st century. Analysts predicts that population would reach 9.7 billion by 2050 and it

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would be a challenge for the mother earth to provide essential resources to meet the demands. Thus, the unbridled population growth poses a serious threat to earth's carrying capacity by depleting the resources.

Moreover, growing population has increased the technological growth since the industrial revolution. Although, the revolution has eased human life in multiple ways, it has also negatively impacted the mother earth. It has extracted and utilized the natural resources of earth more than anything else. Raw material from all parts of the world was extracted at an exponentially devastating rate. The by-products of the industries such as carbon dioxide (CO_2), chemicals, untreated water etc. have changed the natural environment cycle. The by-products annihilated marine life, created air and water pollution and destroyed the natural habitat by erecting industries at vast land. Thereby, generating uncalculated technological products which become garbage in years later. According

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Some estimates, forty million ton e-waste is being produced every year. This waste in turn becomes poisonous for all living things on or inside the earth, destroying the earth's natural capacity.

Furthermore, the industrial revolution has made humans to consume resources and modern products in an exploitative manner. The growing population and ~~growing~~ the increasing demands deranged the humans to use resources at rapid pace, which the world has never witnessed before. Human beings produced the different modern products and utilized these products as well as other resources unchecked, and the cost of which is bound to be paid in the future. According to World Energy Council, one-third of the oil reservoirs has been utilized and the remaining would end by the end of the 21st century if the utilization continues at the current rate. Despite oil reservoirs, extensive water fetching from ground and wasting it in unusual activities have added to the

declining of earth's natural resources which would result in abating its capacity of supporting humans. The availability of these resources in the cities forced people to leave pastoral life for urban.

Subsequently, people left rural areas for cities to relish their greed for resources. People moved to big cities as these cities were promising more resources. The natural habitat around the vicinity of cities began to decline. Humans cut off the forests, even changed the natural water flows of rivers which had deleterious effect on natural habitat. Huge grasslands, cultivatable land and forests cleared off for the purpose of commercialism. This in turn put many endangered species near to the verge of extinction. Moreover, the consumer of natural resources increased multiple times. The cosmopolitans such as New York, Tokyo, Paris etc. are consuming resources 20 times more than the whole rural life of Africa. In return, big cities are producing huge mass of toxic garbage

which is not only detrimental for animals, insects and marine life, but also for human beings. Conclusively, all these factors are collectively ~~declining~~ declining the earth's carrying capacity.

Undoubtedly, the anthropogenic factors have reduced the earth's carrying capacity to unprecedented level. The upcoming paragraph would elaborate the ways to determine the earth's carrying capacity.

The earth's carrying capacity can be determined by; scientific and anthropogenic research method. Scientific method is the objective study of any phenomena, making new theories and rejecting the previous ones. On the other hand, anthropogenic research method involves cross-cultural comparison or ethnographic method. As anthropology studies the human in totality, the convergence of scientific method and anthropogenic method would elucidate

Comprehensively the causes of declining earth's carrying capacity. It would also provide the best constructive and the functional measures to halt the earth's declining carrying capacity and revitalize it for the upcoming generation. On the bases of scientific and anthropological research methods, the constructive measures would be discussed in the upcoming paragraphs.

Firstly, the responsible resource management of agricultural practices should be ensured. Agricultural practices are necessary for human survival as these are the major source of food production. Uncalculated and abundant watering to the crops has swept much of the underground fresh water. This has in return disturbed the water cycle, contributing in diminishing the earth's capacity. Therefore, drip irrigation system must be promoted so as to avoid massive water loss. Moreover, rotational cropping and avoiding ~~to~~ land setting on fire would revamp the earth's

natural carrying capacity. Recently, Chinese government has barred its people to grow rice in China. It was owing to avoid water loss. Thus, responsible management of agricultural practices would revitalize the earth's carrying capacity.

Along with responsible management of agricultural practices, the responsible management of industrial and technological production is also necessary. In this modern age, production of minor to colossal items is just a matter of minutes to few hours. Immense raw material extraction and uncalculated production have destroyed the equilibrium of earth. It is estimated that around one billion cellphones and three million computers are produced each year, and these products come up as a forty million tons of garbage annually. Thus, strict monitoring is required for extraction and production of gadgets. Recently, EU 2050 Energy Council has forced the Apple Company not produce data cables more than the requirement. Consequently, the Apple moved to C-type

capable. Thus such arrangements should be made at all levels and the monitoring of production and utilization must be ensured to lessen the burden on the natural resources of earth.

Additionally, controlling population growth would be extremely beneficial in revitalizing the earth's carrying capacity. Unprecedented growth, especially, after mid-twentieth century has swept the earth's natural resources. Currently, more than eight billion people are wandering on the surface of earth extracting resources from all corners of earth. At this pace, the earth would soon be washed away from resources, putting human as well as all other organisms on threat. So, population should be controlled by promoting contraceptives and avoiding early marriages. Family planning should be promoted at a state level as done by the government of Singapore. Singapore, a small state, introduced 'Stay at 2' policy amid growing population at rapid rates after World War II. Introduced

in 1965, the population growth policy ensured sustainable growth which made Singapore one of best self-reliant and developing economy. Therefore, the state and citizens should join hands to control population so that the earth can maintain its carrying capacity for the upcoming generations.

To add on, shifting towards the renewable resources would prove to be the best policy to cater degrading earth's carrying capacity. Renewable energy resources are also abundant all around the globe. But people preferred non-renewable resources solely motivated by commercialism. Renewable resources are usable multiple times, free of any harmful impact on the earth's capacity and are very economical. For energy source, solar energy, wind energy and biomass energy can be harnessed for domestic and industrial purposes. These energy resources have zero negative impact on humans as well as on the earth. A major development in this case is the shifting

from oil-running vehicles to electric vehicles. Major technological companies namely Tesla and Benz Mercedes have pledged to shift from oil-based vehicles to e-vehicles. Many such developments are the need of time to lessen the burden on mother earth's natural resources.

Apart from using renewable resources, restoring and protecting the forests would expedite the healing process of ailing earth. Forests are the source of providing oxygen gas necessary for the survival of all organisms and engulfing the lethal carbon dioxide gas from the atmosphere. This natural process of earth is disturbed by the mass deforestation which in return would change the composition of gas accumulation in the atmosphere. The process has directly and indirectly perturbed the earth's natural cycle. Therefore, to save the planet, mass reforestation is required and is imperative for human survival. One potent example for the world is the 'One Billion Tree Tsunami' project of Pakistan.

The state at state level and the individuals at domestic level must ensure reforestation as this process would expedite the earth to recover from declining mode.

Along with reforestation, safeguarding the natural habitat is imperative for the recovery of earth to a level where it can support human population. Having discussed earlier, human beings have disturbed the natural cycle of earth more than any other species. Illegal hunting and poaching have pushed many birds and other marine life animals to the verge of being extinct. The illegal trade and hunting must be stopped. Mark Twain in his essay 'The Damned Human Race' has mentioned that human beings hunt birds and animals more than their requirement as a food. This inhuman activity should be minimized and policies for their protection should be devised. Moreover, the vast greenlands, shrublands, water bodies and savannahs should also be protected and preserved.

Among all ways, minimizing the expansion of urbanization by promoting and facilitating rural and suburbs of countries. The huge influx of people from rural areas to urban areas has devastating effect on earth's carrying capacity. Usually, people ~~leave~~ leave countryside for big cities to avail job opportunities. This influx is solely motivated for earning money, getting education and immediate provision or availability of resources. The states should devise a plan to provide all the facilities to the rural people. The establishment of educational institutions, roads, hospitals and availability of daily usable, much needed items would halt the urbanization. Minimizing the urbanization is also the 11th goal of 'Sustainable Development Goals' (SDGs). Therefore, the state and the international stakeholders can play a vital role in minimizing the urbanization and lessening the burden on earth's natural resources.

Along with the state, the international

Community can perform ~~the~~ its pivotal role in the sustainable use of resources so that the earth's carrying capacity may not decline exponentially. Many global stakeholders are in continuous efforts to ensure the moderate use of resources. After industrial revolution, humans extracted natural resources at very alarming pace and has caused unreparable damage. However, the scientists informed about the misuse of earth's resources. The global community came up with 'Sustainable Development Goals 2030' (SDGs) to moderate the pace of natural resource consumption. Still the implementation is not up to the mark. The organizations such as World Wildlife Fund (WWF), World Economic Forum, United Nations Framework Convention on Climate Change (UNFCCC) etc. can play cardinal role and need to expedite their efforts to protect earth's carrying capacity.

Last but not the least is the public awareness as after all public has to face the consequences. Public awareness

is of great significance as the public is also the contributor in this regard.

The lack of knowledge and inability to envisage the future consequences of misuse of natural resources, the states should policies ~~of~~ to enhance the sphere of awareness. The states should use the digital as well as the traditional platforms to make general mass aware of the misuse of natural resources. Conferences at public halls and in educational institutions should be convened and the awareness and proper use of resources should elucidated. This attempt would prove to be a butterfly effect that would slowly and gradually bring fruits.

On the contrary, the question that haunts every individual is that what if humans fail to protect the earth's carrying capacity. The answer to this particular question is that it would be the self-destruction of human beings. The unbridled extraction of resources, polluting the air and water, acidification

Water bodies and clamorous activities of humans would not be detrimental for humans but also the other organisms. A 'Boom-Bust' cycle of growth was observed in Alaska.

Twenty-nine reindeer were initially introduced in 1944 and their number increased to six thousand till 1955. The reindeer decreased to only around fifty by 1964.

Likewise, human population and the depleting natural resources if not monitored, the human beings may face the 'Boom-Bust' cycle and it would be regarded as the suicidal attempt.

In the light of the above discussion, it can be concluded that the unbridled population growth and the anthropogenic factors have dwindled the earth's carrying capacity; it is, however, imperative for all human beings to join hands and make collective efforts to protect earth's carrying capacity. Many man-caused factors such as massive and unplanned population growth, industrial and technological production, exploitation of natural resources

and unregulated urbanization have contributing in deteriorating of the earth's carrying capacity that is essential for the survival of living organisms. However, human beings have the potential to revitalize the earth's ability to support human beings survival in the future. By controlling population growth, using the renewable energy sources, promoting sustainable urbanization and safeguarding the natural habitat ^{human} would protect the earth's carrying capacity. It is of no surprise that human beings caused all the mess; however, there is a cogent possibility that humans can protect the earth's carrying capacity by following constructive measure with all force. Otherwise, denying it would be a suicidal.