# NATURE'S CHALLENGES TO CONFLICT RESOLUTION AND PEACE

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## Abstract

*Humanity aspires for a world without conflict and war but the planet Earth has its natural challenges to conflict resolution and peace. This article, therefore, reviews and analyzes the historical and contemporary evidence of natural challenges to peaceful coexistence and conflict resolution, and suggests some technological policy responses that should be considered for adoption internationally to minimize conflicts and to ensure sustainable peace. Competitive behaviors of organisms for scarce natural resources leading to conflicts, violent attacks, and wars among living things have existed since the start of life. Individuals have always been in competition with others over limited resources. Human societies, in particular, have throughout existence of life, been fraught with conflicts and wars over shortages, inadequacies, or absence of their basic or fundamental needs (Bible, 2015), which include "physiological", "safety" and "security", "belonging" and "love", "esteem", "self-actualization", and "self-transcendence" requirements (Maslow, 1943). Biblical narratives are full of a world of scarce resources and violent competition for them (Schwartz, 1997 and Bible, 2015). The situation is worsened by the geometrically growing global population which is outstripping the arithmetically increasing resources (Malthus, 1798). Since nature operates on the theory of "the survival of the fittest" (Darwin, 1859) and since the resources for survival are limited on*

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*the planet earth, competitions are bound to persist with consequences of conflicts, violence, and wars. Based on Darwin's (1871) theory of "survival of the fittest", the most aggressive competitors will continue to survive while the weak will be progressively subjugated and eventually eliminated as long as there is earthly existence amidst scarcity.*

*Competitions and conflicts between nonhuman biological organisms are inevitable and should be left to natural forces including human interventions to create sustainable balance. Humans, on the other hand, have at least made efforts to address immediate and some root causes of conflicts among themselves (Bondurant, 1988). They have developed nearly 250 methods of conflict resolution that were recently enumerated by the Gandhian Centre for Peace and Conflict Studies (Gangal, 1988). For the existence of peaceful or conflict free society, it is imperative to meet the basic human needs and include among the techniques for resolving conflict (a) reciprocal defense strategy (Maynard, 1982) to overcome general insecurity and threats of conflict, (b) agricultural intensification (Abdulkadir, Orach-Meza and Edaku, 2017) to alleviate nutritional insecurity, and (c) adaptive technology (Boserup, 1965; 1981; Orach-Meza, 2011; Barredo, 2013; Botkin et.al, 2013; Ipate et al., 2015) to promote sustainable environmental and socio-economic development.*

***Keywords:*** Nature, nature's challenges, peace, conflict resolution, basic human needs, adaptive technology

## Introduction

Humanity aspires for a world without conflict and war, but the planet Earth, with its limited natural resources to provide for the needs of humans, has its natural challenges to peaceful coexistence. Nature is the planet earth and the resources on it. The evolution of traits and behavior for successful competitio n for the earth's resources, and survival among living things, based on the theory of "*natural selection*" *(Darwin, 1859)* through which adaptation and speciation take place is one such challenge. Natural selection, according to Darwin *(1869),* is the process in nature by which only the living things best adapted to their surroundings tend to survive and transmit their genetic traits and behavior in increasing numbers to succeeding generations, while those less adapted tend to be eliminated. Both Darwin *(1869)* and Spencer *(1864)* referred to this evolutionary phenomenon as "*survival of the fittest*" in describing the mechanism of "*natural selection*" or "*the preservation of favored race* (species) *in the struggle for life* (existence)".

Darwin *(1871)* and his contemporaries, therefore, theorized the existence of competitive and destructive behaviors as something inherent to living things that evolved to ensure their survival and species perpetuation through reproduction in the limited space and resources. One of the basic needs for physiological existence is food; but food becomes increasingly scarce as the number of consumers increases. It is, therefore, the increasingly limited supply of food and other basic needs for existence that compel organisms including humans to compete for them, at times, violently, even through fighting wars. Humanity has other numerous needs besides food, which, if not met with adequate supplies, could lead to perpetual competition, conflicts, and wars.

Competitive behaviors leading to conflicts, violent attacks, and wars among living things have naturally become part of life. Individuals,

including haploid cells in procreation, have always been in competition with each other over limited resources required for their existence and over dominance. Human societies have throughout existence of life, right from the time of Adam been fraught with conflicts and wars over shortages, inadequacies, or absence of their basic or fundamental needs *(Bible, 2015),*which include *"physiological", "safety"* and *"security", "belonging"* and *"love", "esteem", "self-actualization",* and *"self-transcendence"* requirements *(Maslow, 1943)*. Biblical narratives are full of a world of scarce resources and violent competition for them *(Schwartz, 1997; Bible, 2015)*. The situation is worsened by the geometrically growing global population, which is outstripping the arithmetically increasing resources *(Malthus, 1798)*. Since nature operates on the theory of "survival of the fittest" and since the resources for survival are limited, competitions are bound to persist with consequences of conflicts, violence, and wars. Based on Darwin's *(1871)* theory of "natural selection", the most aggressive competitors will continue to survive while the weak will be progressively deprived and eventually eliminated as long as there is earthly existence amidst scarcity of resources.

Conflicts, arising out of competitions, between certain rivaling organisms are inevitable and should be left to natural forces to balance. However, humans have at least made efforts to address immediate and root causes of conflicts among themselves. They have developed nearly 250 methods of conflict resolution that were recently listed and reviewed by the Gandhian Centre for Peace and Conflict Studies *(Gangal, 1988)*. For the existence of peaceful or conflict free society, it is imperative to include among the techniques for resolving conflict "reciprocal defense strategy", *(Maynard, 1982; von Clausewitz, 1943)* to overcome general insecurity and threats of conflict, "agricultural intensification" *(Abdulkadir, Orach-Meza and Edaku, 2017)* to alleviate nutritional insecurity, and "adaptive technology" or "precision agriculture", *(Boserup, 1965, 1981; Orach-*

*Meza, 2011; Barredo, 2013*; *Ipate et al., 2015)* to promote sustainable environmental and socio-economic development. These and other scientists believe that "the power of ingenuity would always outmatch that of demand" because "necessity is the mother of invention". The global society, therefore, aims at the development of specific solutions based on the recommended techniques that are adaptable to local realities.

## Methods

Relevant and pertinent literature was reviewed and analyzed for historical and contemporary records on scarcity of global natural resources for human existence and on persistence of competitions, conflicts, and wars. This article, therefore, presents evidence, after analyzing the information gathered, on naturally evolving challenges to peaceful coexistence and to conflict resolution. Some technological policy responses that should be considered for adoption and implementation to minimize the likelihood of conflicts were suggested to enhance sustainable peaceful coexistence on earth.

Findings, Discussions, and Recommendations on Natural Challenges to Conflict Resolution and Peace

### (a) Humanity's Common Village: The Struggle for the Limited Space on Earth

The Earth, which is about 4.6 billion years old, is one of the several planets in the Universe on which human nature has been able to evolve within the living ecosystem that comprises the atmosphere (air), hydrosphere (water), lithosphere (soil), and the biosphere (biodiversity or living things that includes humans).

Geographically, it has a surface area of 510,066,000 square kilometers of which 148,429,000 square kilometers (29.1%) is land area and 361,637,000 square kilometers (70.9%) is covered by water of which a small portion

(9,028,300 $Km^2$) is fresh water *(*Strahler, 1963; NASA, 2017*)*. Historical, archeological, chemical, and geological evidence indicates that the increasing human population and their expanding socio-economic activities, as well as demand for survival, are concentrated on the limited land, water, air, and biodiversity. Increasing human actions on the use of resources have been, are, and will continue to (a) affect the quantity and availability of water through modification of streams, rivers, lakes, groundwater, and even the oceans; (b) transform and degrade land through expansion of agriculture, human settlements, development of infrastructure

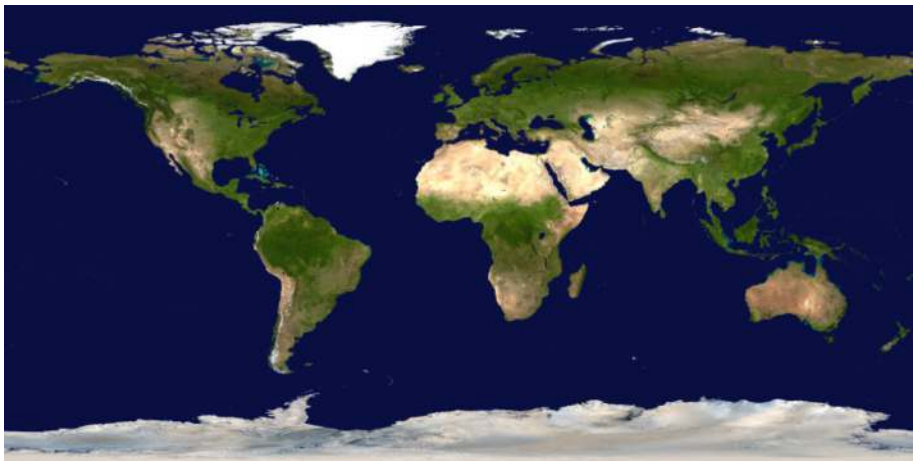

***Fig. 1: Map of the Earth Showing Oceans, Seas, Lakes, and Land (Arable Land, Ice/Snow, Deserts, etc.)***

(Source: Google Map 2017)

mining, and land erosion; (c) pollute water and air through the generation of destructive wastes; and (d) alter the biosphere through changing or destroying natural habitats and causing the extinction of many living species. These actions, which are usually competitive in nature, are often the causes of conflicts among organisms over the scarce natural resources, and the space available.

**Table 1: Share of the Land Area (Source:** *World Bank, 2015; NASA, 2015)*

| **Type of Land** | **Area in $Km^2$** | **Percentage** |
|---|---|---|
| Land for agriculture (crop and pasture) | 71,671,207 | 48.29 |
| Land with poor top soil | 11,110,362 | 7.49 |
| Rocky mountains | 21,780,431 | 14.67 |
| Dry (hot) deserts | 15,767,000 | 10.62 |
| Ice/Snow (mainly Arctic and Antarctica) | 28,100,000 | 18.93 |
| **TOTAL** | **148,429,000** | **100.00** |

The share of the total land area of 148,429,000 square kilometers in Table 1, comprising arable land, ice/snow covered land, deserts, mountains, and land without good top soil for each of the current population of 7.8 billion is about 20,000 square meters. This is about 400 by 50 meters each, but by 2015, the available agricultural land was about 0.194 hectare per person *(World Bank, 2015; NASA, 2015)*. In 2013, Uganda's arable land per capita was estimated at 0.189 hectare, that was a decline of about 10 times from 1.782 hectares per person in 1941. That may be the reason for increased conflicts over land in many parts of the world.

### (b) The Effects of Human Population Growth and the Diverse Cultural Groups

The world population (Fig.2) is currently (2021) just over 7.8 billion people distributed unequally in 195 countries, 193 of which are members of the United Nations. An estimate of the people who have ever lived on Earth to 2016 is about 108+ billion *(Hau; 2017)*. With improvement is human survival rate at global level, despite efforts towards population control, the rapid increase in population will continue. Projections of population growth estimated in 2015 predicted that the world human population was expected to reach 8.5 billion in 2030, 9.7 billion in 2050, and 11.2 billion in 2100 *(United Nations, 2017)*. The annual growth rate of the world population was 0.4 in 1800, 0.6 in 1900, but shot 1.03 in 2021 *(Google 2021)*. It took 127 years from 1800 to 1927 for the human population to increase from one (1) billion to two (2) billion. It wastook another 33 years for the population to increase to three (3) billion in 1960, but only 14 years to grow to four (4) billion in 1974. Then, it took the next 13 years to reach five (5) billion in 1987, and finally dropped to 12 years to increase to six (6) billion in 1999. It was yet another 12 years for it to increase to seven (7) billion in 2011. The current level of 7.8 billion has been reached in six (8) years. At a national level, Uganda's population, which was only 3.5 million in 1941, some 78 years ago, is now 47,123,531 in 2021, and it is projected to grow to 202,867,655 in 2100 *(United Nations, 2021)*.

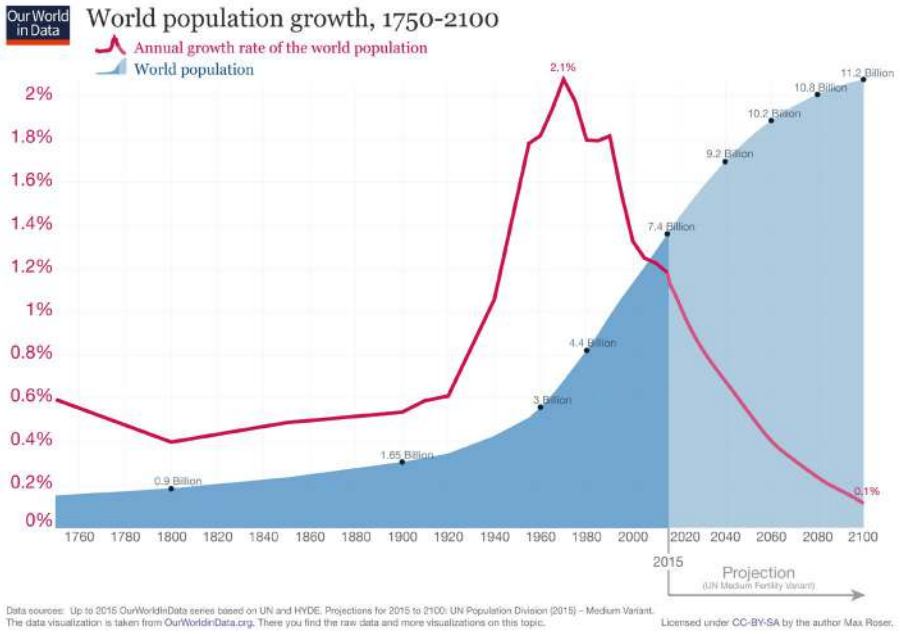


***Fig. 2: World Population Growth and Forecast with the Growth Rate (1760 to 2100)***

*(Source: United Nations, 2021)*

Although about 7,099 major ethnic groups have been identified and listed on Earth *(Lewis et al., 2017 and Levinson, 1998)*, the exact figure of how many different societies, cultures, and ethnic subgroups is not certain. The estimated number of ethnic groups corresponds to the living languages spoken worldwide *(Lewis et al., 2017)* on the assumption that each language is spoken at least by one ethnic group. Fortunately, due to globalization, many cultural differences are increasingly becoming blurred, although ethnicity has remained mostly distinct. Ethnic groups and sub-groups are associated with shared cultural heritage, ancestry, history, homeland, language or dialect, and associations.

The many ethnic groups and their expanding interests and needs would tend to feud increasing competitions for the scarce resources, and hence,

ethnic tensions and conflicts. For instance, Europe had the 20th century cleansing of minority groups, and the conflicts over resources in Africa are mostly between ethnic groups and not between states *(Kiernan, 2007; Ganguly, 2009)*.

For instance, in 1941, there was more than enough land in Uganda for a population of 3.5 million people. Uganda has a total land area of 241,550 square kilometers but 41,030 square kilometers is covered by fresh water in rivers and lakes. The population has since grown to 47,123,531 in 2021. With static land area and about 27 ethnic groups and many more ethnic subgroups whose populations are increasing *(United Nations, 2021)*, the tendency for conflicts over the limited requirement of human needs appears progressively enhanced.

Diversity in human societies, for the purpose of this paper, is having different races, nationalities, ethnic groups, communities, religions, professional organizations, political parties, etc., on earth and in a nation state or country. Humanity is basically diverse in ethnic and socio-cultural terms and can therefore be a source of both benefits and conflicts. Diversity should basically be valued since it recognizes differences in backgrounds, skills, attitudes, and experiences that bring benefits of fresh ideas and perceptions. On the other hand, according to Oyeniyi *(2011)*, "*conflict is an inevitable outcome of human diversity and a world without conflict is not desirable, because it would mean a world without diversity*". In the same vein, Wilson *(2016)* referred to warfare as "humanity's hereditary curse" and another evolutionary psychologist, Pinker *(2013)* believed that "chronic raiding and feuding characterize life in a state of nature". All these views are right, but the latter three seem applicable in this discourse; and the conflicts, feuds, or wars are fueled by the desire to fulfill the fundamental needs of humans, which are entrenched in the limited natural resources.

### (c) The Effects of Scarcity and Limitations of Essential Natural Resources

Natural resources are materials that occur in nature on the Earth and are essential or useful in meeting the needs of humans such as sunlight, air, water, land, and the living things. These resources are limited in the planetary ecosystem comprising of the sun (solar radiation or sunlight), atmosphere (air), hydrosphere (water), lithosphere (land inclusive of all minerals), and the biosphere (living things). Sunlight, geothermal energy, and air can be found everywhere and are known as ubiquitous resources because they are omnipresent and inexhaustible (will not run out in the near future, though air can, however, be polluted). The majority of the other resources on Earth are theoretically exhaustible as they have a finite quantity and their use can deplete them. Water, although limited in volumes of salt and fresh water, is replaceable and can renew itself through water cycle. Minerals are non-renewable but some can be recycled. Living things are renewable through reproduction and, along with some minerals and air, through biogeochemical cycles. Reproduction enables population of organisms to increase in numbers while the amounts of the other resources remain the same.

The capacity of the Earth to support diversity of species, humans included, is large but fundamentally limited. Living organisms exploit their surroundings for natural resources that they use for survival. However, there are limits to the life sustaining resources that the earth, with its limited space, can provide as shown in Fig. 3. Due to the rapid increase in the human population, at the rate of 2.5 per cent in some countries, which in 2011 had peaked at 7 billion, natural resources are being used up at a more rapid rate than in the past. Renewable natural resources can be replenished but when they are used too rapidly and at an increasing rate, they cannot replenish fast enough to meet the human demands. Non-renewable natural resources such as precious metals that are being

exploited can run out completely and be gone forever. Efforts to recycle, reconstitute and/or substitute some non-renewable resources once or more time are possible *(Ehrlich et al., 1977)* but can be prohibitively costly in the long run. The rate of use of some non-renewable resources like groundwater, fossil fuels, and high-grade minerals can be no greater than the rate at which renewable resources that are being used sustainably can be substituted for these non-renewable resources. Basically, there is a finite planetary quantity of each non-renewable resource that can be recovered economically as it is possible to calculate when the earth will run out of a particular resource, given knowledge of the amount of the resource that exists, the technology being used, the costs, and the likely demand. Such resources cannot be used in a sustainable manner. The sustainable rate of emission of pollutants is determined by the degree that they can be absorbed and rendered harmless in the environment.

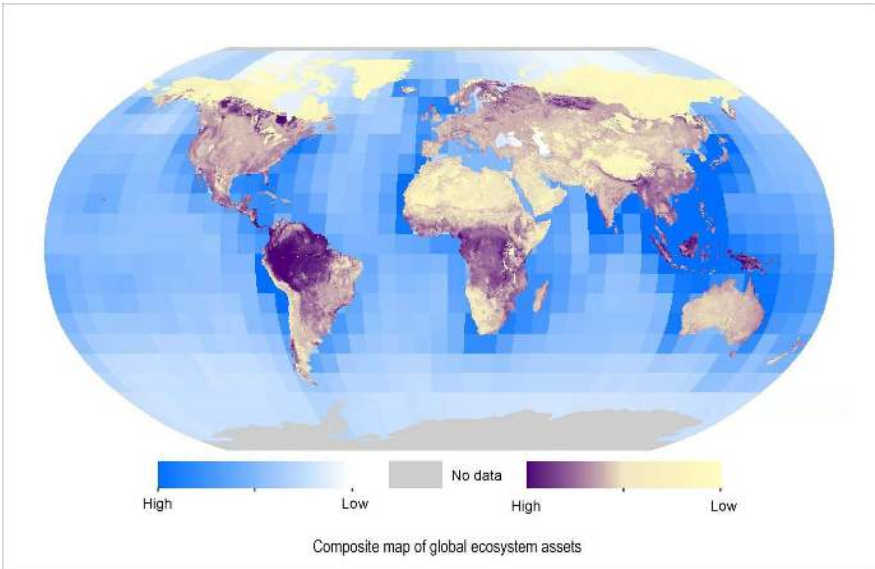


***Fig. 3: Depicting Natural Resources of the World***

(Source: United Nations, 2021)

There are resources that provide free services to humanity without necessarily undergoing depletion or degradation. These include microbial nutrients cyclers and soil generators, natural pest control agents, pollinators of crops, and forests that maintain balances of gases, water, soil, and biodiversity. However, other resources such as those for food, drinking water, energy, and the capacity of the environment to absorb pollutants are either consumed, or dispersed, or degraded as benefits are derived from them.

Depletion of natural resources has been associated with social inequality *(Wittwer, 1989)* since most virgin biodiversities are located in developing countries. These depletions can be viewed as major sources of social unrest and conflicts in developing nations.

Several studies *(USA/IP, 2007; Wittwer, 1989; Le Billon, 2007)* have shown that throughout history, countries have battled over natural resources. Demographic changes, increasing consumption, environmental degradation, and climate change are placing significant and potentially unsustainable pressure on the availability and usability of natural resources.

Two theories were proposed to explain the role of natural resources in conflict (Fig. 4): one argument points to scarcity and the other points to abundance of environmental resources. With scarcity, it is argued by researchers such as Malthus *(1798)* that rapid population growth, environmental degradation, resource depletion, and unequal resource access combine to exacerbate poverty and income inequality among the poorer communities. These deprivations are translated into grievances, increasing the risks of rebellion and societal conflict. This is the problem of overpopulation and scarcity of natural resources. Shortages of natural resources have been associated with population explosion overshooting the carrying capacity of the Earth. It is also argued that resource

abundance is the bigger threat to create conflict due to "resource curse" like corruption, economic stagnation, and violent conflict over access to revenues. For instance, lucrative mineral resources like oil, diamonds, and other strategically important minerals have fueled conflicts in countries of Africa like Sierra Leone, Congo, Angola, and Liberia *(USA/IP, 2007)*.

The natural resources problems, both renewable and nonrenewable, are real and are only going to get worse under the current political-economic system. What happens when resources are in the process of being ruined or depleted? There is a scramble, frequently violent, for the control of the remaining resources.

**A graph illustrating the Malthusian theory of population growth where population increase geometrically while resources increase arithmetically.**
**Note: Point of Crisis**

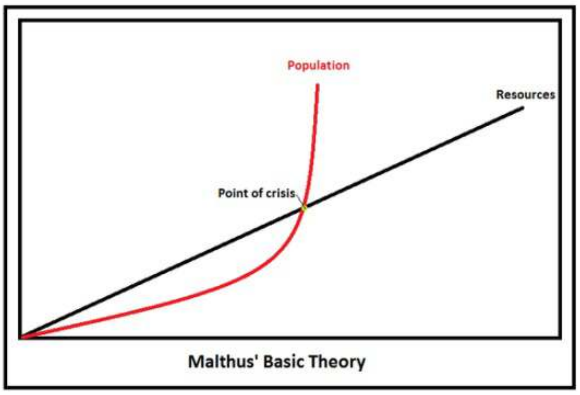


***Fig. 4: Illustration of Malthusian Theory of Population Growth as Against Increase of Resources***

(Source: USA/IP, 2007)

The increasing human population will soon deplete nonrenewable resources. The natural resources are already scarce *per capita* in the world, and thus, the resources crises and the resources wars are already occurring. There is no need to look very far to find evidence of friction,

conflicts, and even some wars over access to resources especially oil and gas, water, and agricultural land *(United Nations, 2017)*. The wars in Iraq and Afghanistan by the United States of America and their military bases and support provided to local governments in the Middle East and Central Asia have been about access to, or control of oil *(Bouvard, 2012)*. The productive aquifers on the Palestinian West Bank must be factored into Israel's reluctance to end the occupation and return to the pre-1967 war borders *(United Nations, 2017)*. In many countries, where no ruling class is in firm control, internal conflicts and even civil wars have been taking place as a result of efforts to profit from the exploitation of resources.

**(d) The Effects of the Slow Progress in Technological Development**

Gradual transition to sustainable development pathways to meet the expanding human needs will require all stakeholders to adapt and adopt state-of-the-art knowledge and technologies, and it will require trying multiple technological models *(Boserup 1981; Godfray, 2010; Orach-Meza, 2011; Borredo, 2013; Botkin et al., 2013, Ipate et al., 2015)*. To address the challenges of increasing food needs will require sustainable agriculture intensification in small and larger farms throughout the world *(Abdulgadir, Orach-Meza, and Edaku, 2017)*. Being able to feed 9 to 10 billion people in 2050 needs to be accomplished by crop and animal productivity increases, reducing food losses and waste, and changing diets, and always keeping in mind that the Earth's natural resources base in finite (Fig. 5). In addition, technologies will have to be developed to guard against running out of water, preserving and improving soils, adapting to climatic extremes, creating better jobs and higher incomes, ensuring healthier diets and lifestyles in all countries.

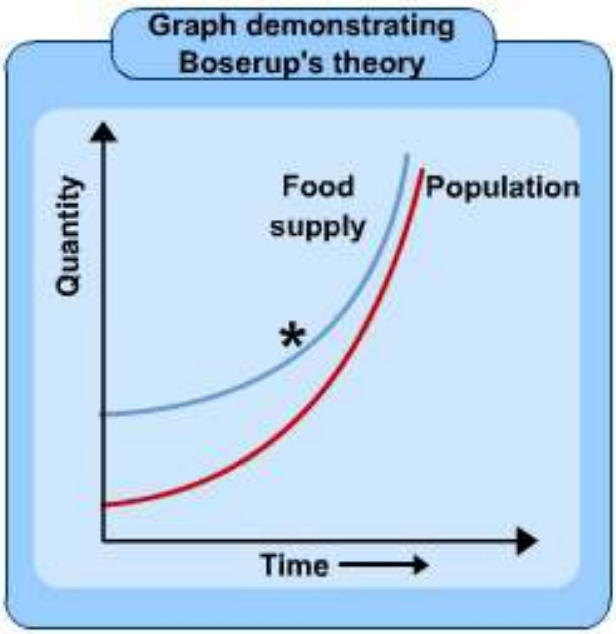


***Fig. 5: Illustration of Increase in Food Supply as Technology Improves***

(Source: Boserup 1965)

A sustainable development path will require decisive and ultimately transformative changes of the global food production systems to increase food availability and utilization, improve environment, make human beings healthier, and create more prosperous rural communities. Measures will have to be taken to address food demand, production, consumption, and losses. Management of population growth, food losses and waste will be important for reducing pressure on agricultural land, water and natural ecosystems, in addition to increases in agricultural productivity and efficiency, and measures to protect natural resources from unsustainable exploitation, degradation, or pollution.

Technological developments may be able to resolve many difficult issues related to human needs on a sustainable basis. However, many of the possible solutions are still ideas. As technology becomes more and more advanced, there will obviously be many more changes. New ideas to-day could become solutions tomorrow. Drones, according to Ipate et al. *(2015)*, are already being used to help with precision agriculture where new technological innovations and systems for monitoring, supervision, management, and controlling are replacing outdated traditional agricultural practices (See Fig. 6). As technology improves, they could do many more things. In addition, every aspect of industry has some technology, including nanotechnology in it, and through these advancements, it is possible to improve the way problems of shortage shall be handled.

It will for example be possible to grow crops in 50 years in order to preserve the land, grow crops without polluting the air or destroying the soil, produce food without soil whether in hydroponic farms on land or platforms at sea, and provide healthy and efficient ways to improve everyday life for humans. The idea about food technology is to solve broader issues, such as helping with world hunger and the fast growing population, waste reduction, health problems, and to create a sustainable environment in which to live.


***Fig. 6: Tomatoes Growing on Soilless Media***

(Source: Courtesy Photo from The Monitor, Uganda)

Nevertheless, many of these are possibilities. Humans live in an ever-changing world in terms of increasing population, resource demands and constraints, possible climate extremes, and even political volatility. The demands of the increasing human population will, for certain, overwhelm the available scarce natural resources on the finite space of the planet Earth with disastrous consequences regarding peaceful coexistence. However, if these technological innovations being designed to satisfy the expanding human needs are combined with the intensification of human population control measures to reach replacement level, they could eventually be the solution for sustainable peaceful coexistence that humanity is searching.

### (e) Expanding Fundamental Needs of Human Society

The concept of human needs, conflict, and peace are interrelated and affect all aspects of human life. Humans need certain essentials of life in order to live and attain well-being. These essentials are human needs. Coate & Rosati (1988) argued that conflicts and violent conflicts that often result in wars are caused by unmet human needs. Violence occurs when certain individuals or groups do not see any other way to meet their needs. Rosenberg (2003) also states that violence is a tragic expression of unmet human needs, implying that all actions undertaken by human beings are attempts to satisfy their needs.

Several studies on human needs theory including human behavior characterize human existence by the fulfillment of fundamental or human needs and they proposed that humans have certain basic universal needs, that if not met, conflict is likely to occur (Burton, 1993; Rosenberg, 2003; Maslow, 1943). Maslow (1943), in his theory, categorized human needs in a pyramid of hierarchy as "physiological", "safety", "belonging" and "love", "esteem", "self-actualization", and "self-transcendence" in that order to explain how the patterns of human motivation to act generally move through. Basically, these begin with the need for food, water, and shelter, followed by the need for safety and security, then belonging or love, self-esteem and finally, personal fulfillment and self-actualization. However, since the human brain is a complex system, having parallel processes running at the same time, the different sources of motivations from the hierarchy can occur simultaneously. It is, therefore, essential to know what each of these needs entail as deprivation from them or their absence can be major sources of natural challenges to conflict resolution and peace.

The first in Maslow's *(1943)* hierarchy in Figure 7 is "*physiological"* or survival needs. These are the basic animal needs for such things as

food, air, warmth, shelter, sex, water, and other body needs. If a person is hungry or thirsty or his body is chemically unbalanced, all of his energies turn toward remedying these deficiencies, and other needs remain inactive. If these basic biological needs required for survival are not met, the human body would struggle to function. Second in the hierarchy is "*safety needs*" that involves human desire for a predictable, orderly and peaceful world in which injustice and inconsistency are under control. Inability to satisfy this can lead to feelings of doubt and shame as well as the need for discipline and orderliness. Third is social "*belonging needs*". This involves friendship, sexual intimacy, and having a supportive and communicative society all of which are emotionally based relationships. Failure to meet this need leads to negative social emotions like guilt with low extraversion values. "*Self-esteem* needs" is the fourth hierarchy. Humans desire recognition, self-esteem, self-respect, and to be respected, and they desire to be involved in activities that give them a sense of contribution or feel accepted and self-valued. Inability to meet this leads to feelings of inferiority, which in turn may lead to low agreeableness. "*Self-actualization* or cognitive needs", the fifth hierarchy, is the need to increase human intelligence and knowledge, which is natural human need to lean, explore, discover, and create to get a better understanding of the world. When this need is not realized, it can lead to confusion and identity crisis. Humans also value pleasant and beautiful surroundings to refresh themselves in the presence and beauty of nature. Missing this need to

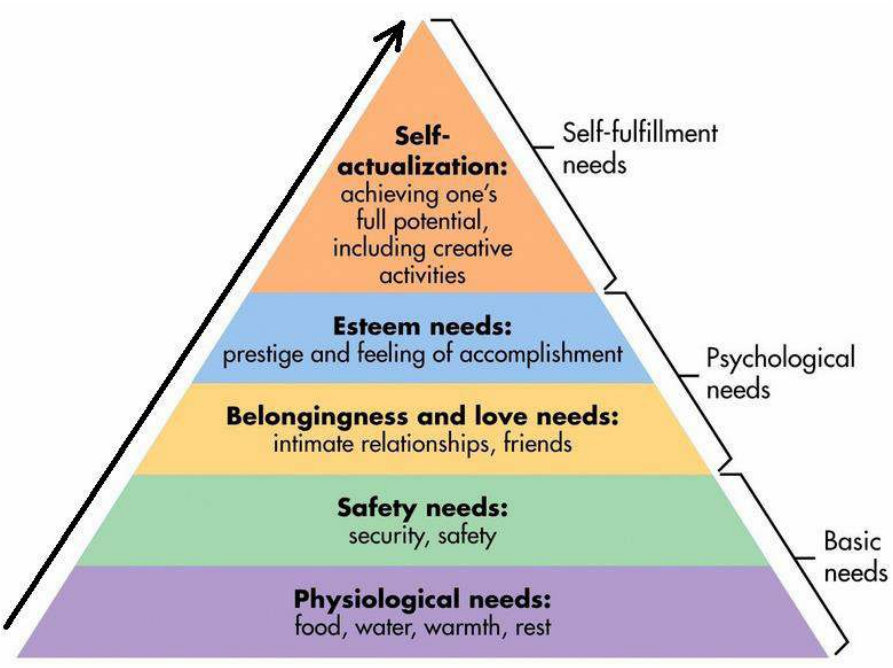


***Fig. 7: Maslow's (1943) Theory: An Explanation of the General Movement Patterns of Human Motivation through the Hierarchy of Human Needs***

(Source: Maslow's (1943)

relate with the beauty of the environment can lead to a feeling of the loss of the beauty that nature has to offer. It is also the need of humans to make the most of their abilities and to strive to be the best they can. Fulfilling this need leads to a feeling of being a generativist or positive contributor to the next generation. The last or the sixth hierarchy he included later is "*self-transcendence needs*". He referred to this as spiritual needs or the power to achieve beyond ones' limits. It is where service to others takes precedence over individual needs. Fulfilling this hierarchy would lead to feelings of integrity and spiritual or highest peace of mind; and there are individuals who aspire to be at that level.

### (f) The Struggle for Existence through Natural Survival Traits

Competitions, conflicts, and even wars are part of life, and they take place when living things are struggling to fulfill their basic universal needs for survival, possession of essential natural resources, dominance, and recognition. Population growth that leads to overcrowding of the Earth increases natural demands of the basic needs thereby escalating the struggle for the scarce natural resources. In the past millennia, overcrowdings on the Earth were resolved by *major mass extinctions* that have, so far, occurred five times besides twenty (20) other smaller events *(*McElwain & Punyasena, 2007*)*. Mass extinction is an occurrence in which a large number of species of life on Earth become extinct in a relatively short period as a result of natural forces. It affects a great many different groups of organisms occupying diverse and widespread environments. New species often emerge after the event. Many scientists are already predicting that the sixth major man-made mass extinction is underway and is being accelerated by climate change *(*Kaplan, 2015*)*.

Competition is one of the most basic functions of nature. Individual organisms best able to compete within an environmental niche survive because they compete for a common resource that occurs in a limited supply relative to their demand. This occurs when the capability of the environment to supply the required resources is smaller than the potential biological requirement causing organisms to struggle or compete with each other for access and possession. As part of inheritance, competition starts with haploid cells, when the fastest sperm cell from the many (hundreds to millions) succeeds in entering and fertilizing the egg and preventing others to enter. The individual produced among many others in the world of scarce resources automatically becomes competitive in order to amass resources to satisfy its needs. Competition is, therefore, part of life and highly essential in natural selection because it relates to

the selection of traits which promote success or survival of the fittest in particular environments.

Humans are naturally competitive beings and competition is rooted in their evolutionary heritage. They compete to win in practically everything regarding human needs. Once competition intensifies, Darwin's (1871) theory of "*survival of the fittest*" commences and the loser is naturally eliminated from the niche.

Conflict, on the other hand, being part of the make of humanity, is a struggle between two forces: a protagonist and an antagonist. The individuals or groups involved seek to achieve their needs by directly challenging the adversary by violence or threat of violence. Every individual differs from each other physically and possesses personal opinions, ideas, sets of beliefs, and own ways of looking at things. Conflict involves individuals, groups of individuals, or a struggle within one's own self. Since individuals or groups have to make choices in case of conflicts, the decision to take and the choice to make are not always going to be acceptable or agreed by both sides. Conflicts arise primarily as a result of a clash of interests in the relationship within and between parties, groups, or states because they are pursuing either opposite or incompatible goals. Conflict is and has, therefore, been throughout history a normal way of conducting disputes between groups. For example, Malthus (1798) considered reduced supply of the means of subsistence as a cause of conflict, and Darwin (1871) considered the struggle for existence or survival of the fittest as the main cause of conflict. Another cause in humans could be the difference between the rate of change in the normal norms of a society and desire, hopes, dissatisfaction, or demands. Major conflicts, according to Oyeniyi (2011), are normally over intrastate and interstate borders; territoriality; ethnicity or racism; politics; governance; persecution; economic performance; foreign intervention; personal, group or national interests or differences; etc., and are normally brought about by the desire to fulfill

the basic human needs for existence. Nonviolent conflict of needs can degenerate into violent conflict, which is war.

War, according to Cambridge Dictionary *(*2016*)* is a state of organized, open-ended, collective armed conflict or hostility between states or societies, and that it is characterized by extreme aggression, destruction, and deaths using regular or irregular military forces. War, being an extension of conflict, is a product of inherited biology of humans. For war to occur, there must be some opposing interests regarding human needs, something to fight about, and capabilities to fight.

A review of the recorded history of humanity reveals that human beings have all along been bloodthirsty and aggressive species (Darwin, 1871; Holsti, 1991; Schwartz, 1997; Rosen, 2005; Bible, 2015). Warfare and brutality have been omnipresent and are natural to human beings. Throughout history, humans have shown themselves willing to fight and die to seize or defend their needs. Based on evolutionary nature in humans, the Bible presents a legacy of intolerant thinking about other people and "authorizes such intolerance as the will of God" with disastrous effects on religious, racial, and ethnic conflicts around the globe starting with Cain committing the first fratricide when he murdered Abel in a jealous rage *(*Schwartz, 1997; Bible, 2015*)*.

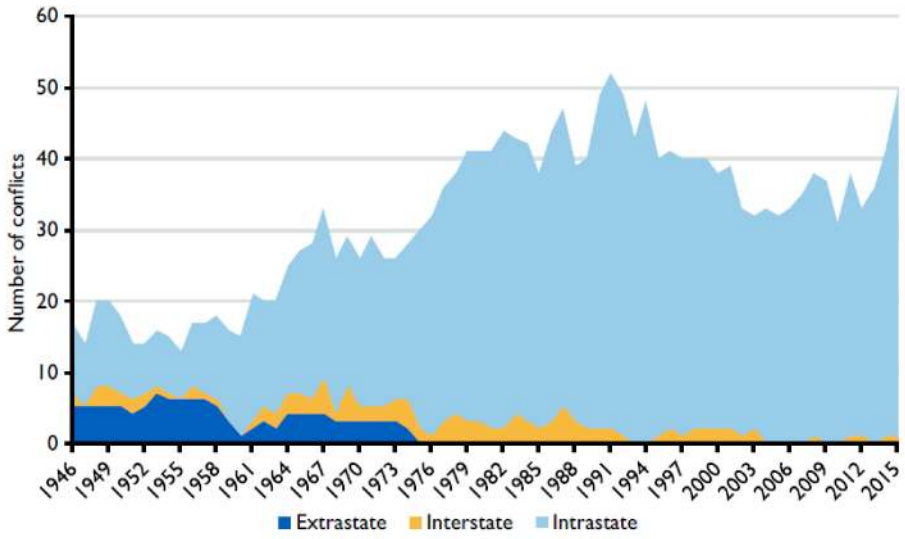


***Fig. 8: Trends in Armed Conflict 1946-2015***

(Source: United Nations 2017)

Territorial behavior is central to some of the most vexing cases of wars because a territory can secure access to key natural resources like water, food, shelter, and security from adversaries among other needs and protects them from competitors. Holsti *(1991)* found that 79 percent of all wars between 1648 and 1989 involved territorial issues, and Toft *(2009)* showed that 73 percent of all ethnic wars involved territorial control (Fig. 8). Another major factor in the cause of civil wars was ethnic and national identity. However, territoriality across the animal kingdom is about the defense of natural resources essential for survival and reproduction besides other needs. In case of human beings, Vasquez *(*2012*)* established that territorial interest influences individuals, groups, and even states to risk an escalation in, and persist with violence over land more often than over other issues. In all cases, the overriding reason for war is survival of the fittest and perpetuation of existence of the surviving species by securing and protecting their needs.

The linkage between competition, conflict, and war has been shown to be rooted in Darwin's *(*1871*)* evolutionary theory and explains their linkage to concerns and needs of living things including humans.

### (g) Current Challenges to Peaceful Co-Existence

Peace is absence of war and meeting human needs satisfactorily. Peaceful co-existence is, therefore, a state of harmony characterized by lack of violent conflict (war), and commonly understood as absence of hostility. Macmillan Dictionary *(*2017*)* further adds that peaceful co-existence suggests the presence of healthy relationships, prosperity in matters of social or economic welfare, equality, and a working political order that serves the true interest of all. Everyone would wish to be in a conflict-free and peaceful status.

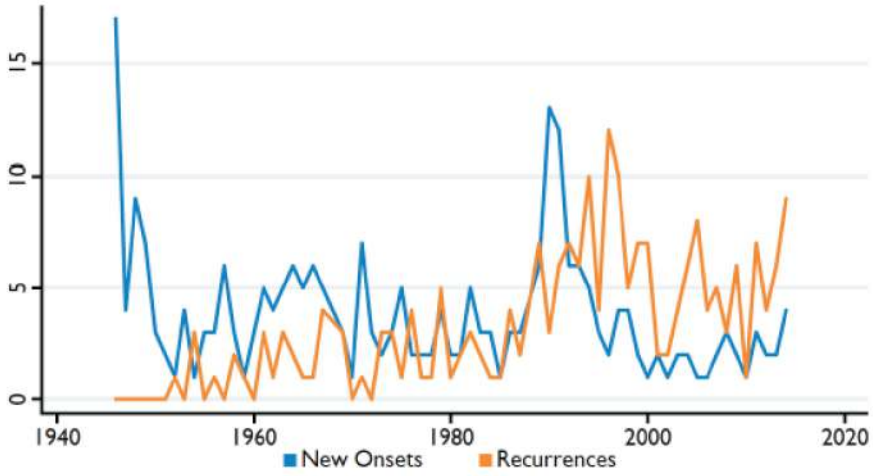


***Fig. 9: New and recurring conflicts globally, 1946-2014 that Illustrates Futility of Mediated Conflict***

(Source: Svensson 2015)

However, conflicts and wars are prevalent in life. Given the characteristic differences in humans and human behaviors, irrespective of current globalized interaction among human beings at family, clan, tribal, ethnic, national, regional, and international level towards conflict resolution and peace, there will always be competition, nonviolent conflict, and violent conflict (war) which are bound to become worse as human population increases. Inevitability of conflicts being part of life is obvious and has been vividly reflected in the Bible (2015) and the theories in the Curse of Cain (Schwartz, 1997), Natural Selection and Survival of the Fittest (Darwin, 1871), Population Growth (Malthus, 1798), Territoriality (Johnson & Toft, 2013), Ethnicity/Racism (Ryan, 1994), Persecution (Limbaugh 2003), Governance (Blainey, 1973), Political Volatility (Gurr, 1991), Economic Inequality (Rosen, 2005), On War (von Clausewitz 1943; Pinker, 2015) and Foreign Intervention (Gurr, 1991), which are still having practical effects in the world. These are being worsened by the prevalence of extreme poverty, political differences, social inequalities, economic disparities, poor governance, high levels of unemployment, environmental degradation, and personal or group deprivation.

Figures 9 and 10 illustrate the futility of current efforts towards conflict resolution. The reasons for flouting the agreed positions during mediation should be researched, and natural challenges should be considered.

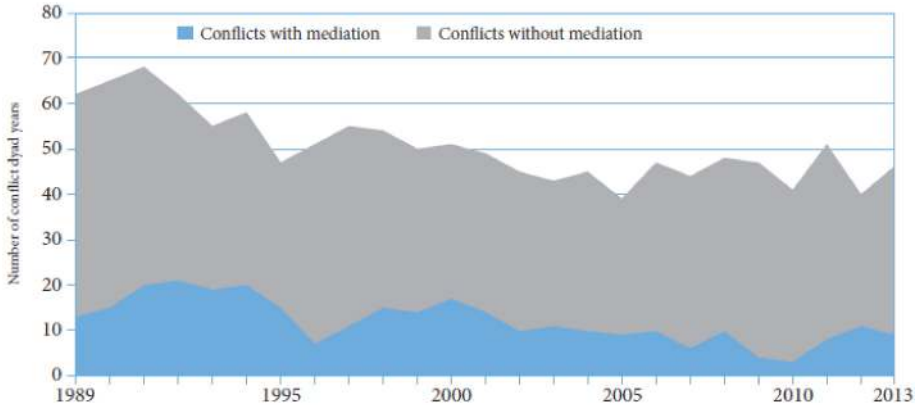


***Fig. 10: Distribution of mediated and non-mediated conflict: 1989-2013***

(Source: Svensson 2015)

Struggle for Sustainable Peaceful Coexistence

Every living thing is born peaceful. It is the environment in which it lives that tempers its behavior to become aggressively competitive and conflict-ridden in its endeavor to survive and perpetuate its existence and that of its future generations amidst scarce and finite natural resources on planet Earth. The only sure way to avoid conflicts with others is for a human being to be able to access the basic needs for its survival and perpetuation of its existence on a sustainable basis.

Today, as illustrated in *Figures 9 and 10*, there are as many ways of conflict resolutions and conflict prevention as there are threats to prospects of conflict resolutions (Sharp, 1973 and Bondurant, 1988). Many deal with resolving contemporary conflicts as they occur without necessarily considering the root causes of the conflicts. The current options for resolutions and/or prevention include early warning systems, human capacity building, creating a climate of peace, preventative deployment for peace enforcement, continental development imperative,

comprehending causes and histories of conflicts, and reverse intervention *(*Oyeniyi, 2011*)*.

In life, every individual is different and each one behaves differently; and every behavior is according to Tinbergen *(*1953*)* driven by "*proximate causes, ontogeny, survival value, and phylogeny"*. (Recall the evolutionary maxim that "*ontogeny recapitulates phylogeny*" and both are tempered by changes in the surrounding environment). Environmental conditions are constantly changing, and individuals must, therefore, adapt their means of existence and behavior to the changes over short, medium, and long geological periods. In the process, those that are best adapted to the changes are selected to survive and perpetuate their kinds, while those that fail to adapt are eliminated *naturally* unless nature's challenges are mitigated.

**Conditions for Sustainable Co-Existence Peacefully and Free of Conflicts**

Sustainable peaceful coexistence among humans shall only prevail provided their basic needs are being met *(Maslow 1943)* with the available natural resources within the limits of the earth. The primary requirement for action will be the development and sharpening of human intellectual and technological capacity to overcome the threats of shortages of needed resources for existence (Boserup, 1965). Intensification of agriculture and food production systems, ensuring territorial integrity and safety for everybody, and establishment of reciprocal and strategic defense mechanisms could be the required strategies. The approaches will have to involve actions along the following strategic plans if conflicts and wars are to be avoided:

(a) Development of technology for the intensification of agriculture, e.g. perpendicular staircase farming system on the available land (Ali et al 2017 and Boserup 1965).

(b) Utilization of the aquatic systems particularly the oceans and seas more intensively for food production and other requirements (Orach-Meza, 2011 and FAO 2018).

(c) Making changes in human diets and feeding habits to include all edible and nutritious substances as foodstuffs (Bell 2019 and Luca et al 2010).

(d) Curbing human induced climate change by using sustainable alternative energy resources (Kaplan, 2015 and Cao and Hu 2016).

(e) Securing ecosystem and biodiversity as well as their services that are useful to humanity (Mayer et al 2009).

(f) Concentrating urbanization for settlements, industries, and recreation in skyscrapers at locations suitable for it (Yaskova, 2018).

(g) Ensuring equitable sharing of water and other natural resources for the benefit of humanity (Ali *et al*., 2017; Alao, 2011).

(h) Implementation of population control of having only replacement off-springs since there shall be better healthcare, reduced infant, maternal, and adult mortalities, and increased lifespan, and also since there will be a limit to the number of human population earth can support (Meyer, 2004; Rosenberg, 2003; Maria, 2002).

(i) Apportioning the finite space on earth into satisfactory territorial and intra-territorial land holding entities with respected boundaries (Johnson & Toft, 2013).

(j) Transforming governance for sustainable development by ensuring absence of political, economic, and societal stresses, and by adopting the following principles of life: ethics, integrity, responsibility, respect for laws and regulations, respect from

majority of citizens by right, the love of work, the effort to save and invest, the will to be productive, and punctuality (Gurr 1991 and Blainey 1973).

(k) Establishment of reciprocal and strategic defense mechanisms by individuals, groups of individuals, and each state or region as deterrence and since war is also costly (Sharp, 1973 and Bondurant, 1988).

## Conclusion

A world without conflict and war is the aspiration of humanity, but the earth has its natural obstacles to peace and conflict resolution. The obstacles have been highlighted in this paper which was greatly influenced by theories based on natural laws. Tinbergen's *(*1953*)* theory on animal behavior (ontology) stressed the role of biological inheritance as a major factor on aggressive behavior in defending survival needs resulting in competition or violent conflict. Maslow *(*1943*)* identified the basic needs that must be met in order to survive and exist. The absence of one or more basic needs results into conflict for access. Darwin *(*1869*)* theorized on how nature selects the fittest genetic traits to survive and perpetuate their existence and eliminate those that are not naturally selected or those that cannot defend their needs or territories. Competing for needs over the scarce natural resources available leads to violent conflict that results in the weak being eliminated by the strong or the fittest. Malthus *(*1798*)* worried over the geometrically increasing human population against the arithmetically increasing desired natural resources that could lead to human population eventually overwhelming the available natural resources. This is a cause for serious competition over the depleting resources that can result into violent conflict (war).

These natural challenges, as analyzed above, are the causes of conflicts and wars among living things including humans. They are, also, therefore,

challenges to peace and conflict resolutions. Unless appropriate mitigation measures for the natural challenges as discussed above are implemented, peace and conflict resolutions cannot be permanently achieved. Only temporary conflict resolutions can be achieved as the conflicts will recur as illustrated by Svensson, *(*2015*)* because their basic natural causes have not been addressed. When the strategic action for the intensification of agriculture and food production systems is enforced, peace can be realized. Such a strategic action ensures territorial integrity and safety of needs for everybody, and establishes reciprocal and strategic defense mechanisms. These are taken along with the specific approaches listed elsewhere in this paper that peace and permanent resolutions can prevail at the levels of individuals, groups of individuals, states, regions, and the whole world. Other organisms will continue to be controlled and manipulated by natural forces coupled with the innovative technological intervention of humans in order to ensure the maximization and perpetuation of their beneficial services to humanity.

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