

CLIMATE CHANGE LINKING TO OVER POPULATION AND OVERCONSUMPTION OF RESOURCES : A REVIEW

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ABSTRACT: Climate change has been described as the biggest global health threat of the 21st century. Climate change and population can be linked through adaptation by reducing vulnerability to the adverse effects of climate change and reducing the greenhouse gases that cause climate change. World population is projected to reach 9.1 billion by 2050, with most of this growth in developing countries. While the principal cause of climate change is high consumption in the developed countries, its impact will be greatest on people in the developing world. The contribution of low-income, high-fertility countries to global carbon emissions has been negligible to date, but is increasing with the economic development that they need to reduce poverty. Rapid population growth endangers human development, provision of basic services and capacity of poor communities to adapt to climate change. Similarly, a better idea would be to take steps to reduce the impacts of climate change on our health, environment, economy, and society by adaptation and mitigation strategy to climate change. Linking population dynamics with climate change is a sensitive issue, but family planning programmes that respect and protect human rights can bring a remarkable range of benefits. Although population is an important factor, demographic trends are more significant for climate change than total population, consumption patterns, together with aging and urbanization in some countries, have bigger implications for health and the reduction of carbon emissions than the total number of people in the world. Climate change already has a severe human impact today and it requires urgent attention.

KEYWORDS: Population dynamics, Urbanization, Economic development Climate change.

INTRODUCTION:-

All human societies, from primitive to advanced, have had to adapt to the challenges posed by climate at global scale. Events like weather-related disasters,

desertification and rising sea levels, exacerbated by climate change, affect individuals and communities around the world. Many people are not resilient to extreme weather patterns and climate variability. They are unable to protect their families, livelihoods and food supply from negative impacts of floods or water scarcity during extended droughts. No doubt human population growth is a major contributor to global warming and of course climate change, given that humans use fossil fuels to power their increasingly mechanized lifestyles. More people means more demand for oil, gas, coal and other fuels mined or drilled from below the Earth's surface that, when burned, spew enough carbon dioxide (CO₂) into the atmosphere to trap warm air inside like a greenhouse. According to the United Nations Population Fund, human population grew from 1.6 billion to 6.1 billion people during the course of the 20th century. During that time emissions of CO₂, the leading greenhouse gas, grew 12-fold. And with worldwide population expected to surpass nine billion over the next 50 years, environmentalists and others are worried about the ability of the planet to withstand the added load of greenhouse gases entering the atmosphere and consequently affecting earth's ecosystems.

According to the United Nations Population Fund, fast-growing developing countries (like China and India) will contribute more than half of global CO₂ emissions by 2050, leading some to wonder if all of the efforts being made to curb U.S. emissions will be erased by other countries' adoption of our long held over-consumptive ways. United Nation (UN) World Population Prospects reveal the world population has reached 6.8 billion with 5.6 billion (82%) living in the less developed regions (**World Population Prospects, 2008**). It is projected to reach 9.1 billion by 2050, an increase close to the combined populations of China and India today. About 80% of carbon dioxide emission is caused by industrialization and the remaining by land use such as deforestation. There is strong evidence that the burning of fossil fuels since the beginning of the industrial

revolution has already caused a 0.75°C rise in global temperatures and 22 cm rise in sea level during the twentieth century. During the twenty-first century, the earth's average surface temperature rises are likely to exceed the realistic target threshold of 2°C above preindustrial average temperature.

The Intergovernmental Panel on Climate Change (IPCC, the leading body on climate change, comprising over 2500 international scientists) estimates that by 2100, global temperatures could rise by 1.1–6.4°C and sea level by 28–79 cm. In addition, weather patterns will become less predictable and extreme climate events, such as storms, floods, heat waves and droughts, will occur with increasing frequency and severity. It is already clear that the impacts of climate change will fall disproportionately upon developing countries and the poorest sectors within all countries, thereby exacerbating inequities in health status and access to adequate food, clean water and other resources (**World Population Prospects, 2008**). A recent Lancet UCL Commission on Managing the Health Effects of Climate Change identified climate change as ‘the biggest global health threat of the twenty-first century’ (**Costello et al., 2009**). The principle cause of climate change is high consumption in developed countries, while the impact of climate change will be worst on poor people in developing countries.

The objective of this paper is review the literature of population growth and consumption patterns in developed and developing countries. Detail analyses of factors responsible for to climate change may depict an understanding of how to reduce the climate change and its impact on our health and environment. This paper was written through review of policies, reports, documents, technical reports and publications on climate change and its impact.

DISCUSSION:-

The world's population is expected to be ten times larger by 2050 (roughly 10 billion) than it was for most of the 19th century (around 1 billion). Asia and Africa are the most populous continents in the world, with the 10 most populated countries being China, India, the United States, Indonesia, Brazil, Pakistan, Nigeria, Bangladesh, Russia and Japan. Rapid population growth can cause a significant increase in demand and often mismanagement of natural resources that are compromised and in decline due to environmental

variability and climate change. For example-United States has the largest population in the developed world, and is the only developed nation experiencing significant population growth: Its population may double before the end of the century.

Current levels of population growth are endangering the sustainability of the planet, with the world's population projected to rise to nearly 10 billion by 2050, a five-fold increase from 1950, when it was just over 2.5 billion. Each birth results in emissions attributable to that person in his or her lifetime and also those of his or her descendants. Most of the projected growth is likely to be in the developing world, where emissions are increasing, as low-income countries strive to lift their populations out of poverty and deprivation. If we consider the human impact on greenhouse-gas emissions, the most heavily industrialized countries contribute more per capita to the burden of overpopulation on climate change. Specifically, in 2012, The United States, and the European Union and China alone contributed about 56 percent of the world's carbon dioxide (CO₂) emissions from fuels: 29 percent from China, 16 percent from the US, and 11 percent from the EU (**Nakicenovic et al., 2009**). America's 300 million inhabitants produce greenhouse gases at a per-capita rate that is more than double that of Europe, five times the global average, and more than 10 times the average of developing nations (**O'Neill et al., 2009**). The U.S. greenhouse gas contribution is driven by a disastrous combination of high population, significant growth, and massive (and rising) consumption levels. India and Russia were a distant fourth and fifth, at respectively, six and five percent. The rest of the entire world only contributed 33 percent of the total carbon emission.

Population, poverty, patterns of production and consumption and the environment are so closely interconnected that none of them can be considered in isolation. Population growth will require increasing numbers of people to be accommodated on earth irrespective of how quickly fertility rates decline and countries to develop policies to ensure the well-being of their growing populations. Until now, high carbon economic growth has been the platform on which developments to address socio-economic inequalities have been built. Such models are acknowledged to be unsustainable and to have negative impacts on health. A global agreement for contraction and convergence, which compels all countries to work towards achieving

equal per capita shares of emissions, together with strategies to reduce population growth have the best chance of achieving a stable climate, improved health and well-being and greater justice and equity in the world.

While acknowledging the lack of association between population growth and greenhouse gases in the past, the relation between these two dynamics in the future becomes more critical. As illustrated in lower-middle income nations, such as China, with rapidly developing economies, are already contributing an increasing proportion of the growth in global greenhouse gas emissions. In simplistic terms, it is the pattern of development and consumer behaviour in such countries that will determine the nature and extent of links between population dynamics and climate change in the future (**Jiang et al., 2009**). This does not detract from the view that 'larger future world populations will face greater challenges than smaller ones in achieving climate-sustainable emissions' and that 'the total human impact on the earth system scales with population (**Newman et al., 2009**). In starker terms, China has claimed that its one-child policy, which is estimated to have reduced the population of China by 500 million (from a projected 1.8 billion without such a policy to the current level of 1.3 billion), should be seen as contributing to its overall actions on climate change.

Although population is an important factor, demographic trends are more significant for climate change than total population, says the review. Consumption patterns, together with aging and urbanization in some countries, have bigger implications for health and the reduction of carbon emissions than the total number of people in the world. The world's poor have contributed little to climate change and yet will experience the biggest effects. Although poor countries have some of the world's highest fertility rates, growth in consumption exceeds growth in population in developing and developed countries. According to the authors reducing consumption and achieving more sustainable lifestyles in rich countries thus represents the most effective way to reduce carbon emissions and ultimately deliver health benefits.

Literature a review says that Population numbers in the rest of the world have been declining for years; the average woman in the world today has half as many children as her grandmother and 2.5 bouncing babies,

compared to more than five back in the 1970s (**Eastwood et al., 1999**). In countries like Britain, only migrants keep the numbers ticking up. Almost everywhere in the world, including the poorest countries, families have been getting smaller. This decline is especially marked as people move to cities, where extra children are a burden rather than a valuable source of farm labour. Teeming megacities may seem to us like a symbol of overpopulation, but in reality they are a powerful means to curb population growth.

Consumption patterns and levels of individuals and households greatly contribute to the society's climate and overall environmental impacts. Most of the environmental policies and measures have targeted eco-efficiency of production processes and product design. Existing consumption-targeting instruments, such as information provision and eco-labelling, rely on actions of individuals and thus need to be backed up by society-wide strategies for developing institutions and infrastructure that enable sustainable lifestyles. Action by governments is needed to lead the shift towards sustainable consumption and well-being, in concert with action by individuals. So, it seems clear that while population growth is an important factor, it is consumers, rather than people per se, who drive climate change. Reducing consumption thus represents the most effective way to reduce carbon emissions. This can have substantial health co-benefits, and consideration of human health should therefore be integral to future plans for tackling climate change.

The challenge of confronting the impacts of climate change is often framed in terms of two potential paths that civilization might take: adaptation and mitigation. Mitigation involves reducing the magnitude of climate change itself and, as we will see in the final two lessons, can be subdivided into two alternative strategies: emissions reductions - dealing with the problem at its very source, and geo engineering - somehow offsetting the effects of greenhouse gas emissions. Adaptation, by contrast, involves efforts to limit our vulnerability to climate change impacts through various measures, while not necessarily dealing with the underlying cause of those impacts. The reference to "our" in the previous sentence is critical, as adaptive measures typically only deal with impacts to human civilization; they cannot deal with impacts to ecosystems and our environment., for example, are unlikely to adapt

to the twin impacts of global warming and ocean acidification. A similar case can be made for other ecosystems and living things. At some level, such considerations call into question what we really mean by adaptation. If we were to see the collapse of major ecosystems such as coral reefs, we would in turn see the loss of the ecosystem services they provide - a potentially catastrophic loss for human civilization **(Bongaarts, et al. 2007)**.

It is important to recognize two distinct ways in which population issues can be linked to climate change: mitigation (reducing the greenhouse gases that cause climate change) and adaptation (reducing vulnerability to the adverse effects of climate change). Few experts doubt the importance of population in relation to climate change adaptation, but the link between population and climate change mitigation is more controversial. The statement that 'people cause climate change' is often made to emphasize that climate change, as it currently unfolds, is a human-induced, rather than a natural, phenomenon. However, the principle cause of climate change is high consumption by people in developed countries where population growth has been low or negative. At national the level, therefore, there is a lack of association between growth of greenhouse gas emissions and growth of populations during the last century **(Campbell et al., 2009)**. It is more accurate to say that consumers, rather than people, cause climate change; there is enormous variation in greenhouse gas emissions between individuals with high consumption levels in developed nations with low fertility rates, and individuals with low or negligible consumption in poor nations with high fertility rates. In other words, climate change is driven more by consumer behaviour than simply by population number.

Contraction and convergence seeks to reduce overall carbon emissions to a sustainable level, according to an equal share of emissions per person globally. Industrialized countries would dramatically reduce their emissions while developing countries would increase theirs up to an internationally agreed 'ceiling' level, to allow for, and stimulate, development and poverty reduction. Population is the major denominator of this model and a major determinant of whether a globally feasible and equitable per capita emission figure can be achieved. Family planning is urgently needed for achievement of both development and climate change goals. Family planning offers a unique solution among

medical interventions. It reduces poverty, and maternal and child mortality; increases primary schooling, and women's education and empowerment; increases environmental sustainability and mitigates the effect of climate change through stabilization of global populations.

Recent evidence indicates continued high levels of unmet need for family planning and other reproductive health services **(Bryant et al. 2009)**. Despite gains in recent years, an estimated 215 million women who want to avoid a pregnancy are not using an effective method of contraception **(Marston et al., 2004)**. Some countries have experienced little recent change in the use of modern family planning, and others continue to have little changes.

CONCLUSION:-

Population growth is an important factor, however, it is consumers, rather than people per se, who drive climate change. Reducing consumption thus represents the most effective way to reduce carbon emissions. This can have substantial health co-benefits, and consideration of human health should therefore be integral to future plans for tackling climate change. The world's poor have contributed little to climate change and yet will experience the biggest effects. Although poor countries have some of the world's highest fertility rates, growth in consumption exceeds growth in population in developing and developed countries. So, it seems that reducing consumption and achieving more sustainable lifestyles in rich countries may act as the most effective way to reduce carbon emissions and ultimately deliver health. The link between population growth and climate change is further complicated by factors such as urbanization and household size. Reductions in household size often linked to lower fertility and higher economic growth may also significantly increase carbon. The most comprehensive modelling analysis to date using climate forecasts from the IPCC identifies population growth, economic growth, technological change and changes in patterns of energy and land use as the major driving forces of CO₂ emissions. While the modelling generally shows positive associations between population size and emissions outcomes, other important variables such as urbanization, ageing and household size have not been adequately taken into account. Reviews clearly indicate that insufficient attention has

been paid to the interconnections between population, development, climate change and human health.

To sum all, we can say that although population is an important factor, demographic trends are more significant for climate change than total population, consumption patterns, together with aging and urbanization in some countries, and have bigger implications for health and the reduction of carbon emissions than the total number of people in the world. Therefore, more research is required to clarify the contribution of population growth, migration, urbanization, ageing and household composition into climate change.

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