

Resilience and climate action

The influence of demographic growth on Society

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Abstract: According to the UN calculations, today we notice more than 7 billion human living on Earth instead of 1 billion 200 years ago and it's estimated that there will be 10 billion by 2056. This explosion of the demographic rate is due to the development of medicine, to the increase ways and style of livelihood and the increase of birth-rates. This rapid growth impacts many fields related to economy and climate. This situation necessitates more governance and resilience. That becomes not only a necessity but an emergency because of the increase in threats caused by the huge consumption of resources, the emission of CO₂ and GHGs .

Adapting demographic growth needs to the safety of the planet is a hard question because of many difficulties related to the number and the type of contributors, cost, resources, policies and economic issues.

Keywords : resilience, issues, demographic growth, resources, safety, needs, mitigation.

Introduction

Climate change is a fundamental and a central question which is impacted by many sectors and fields. Furthermore, the industrial revolution has had a direct impact on climate change by causing the global warming and the increase of the temperature of the atmosphere at an abnormal rate.

This global phenomenon is very rooted, thus, dealing with it becomes a very serious necessity, on one hand we need to produce more to meet the needs of the population, which include employment, housing, infrastructure, and environmental concerns. On other hand, we have a responsibility to safeguard our environment and lessen the impact of climate change. This dilemma constitutes the axe and the problematic of our work.

In 2013 scientific studies have shown and concluded that atmospheric concentrations of CO₂ exceeded 400 parts per million for the first time in human history. Therefore, emissions of GHGs such as nitrous oxide, methane and fluorinated gases have continued to increase.

This situation has direct and indirect effects on climate change which impacts livelihoods, lives and public infrastructure worldwide. So, we are all invited to be engaged and implicated to develop and adopt measures of resilience, think and reconceptualize the world by another sight. First thing to do is looking how to lower the temperature and how to measure the impacts of our daily activities, particularly in the urban space.

Moreover, today our planet is facing serious dangers and actors are in tremendous dilemma between how to keep and protect technological, industrial advancement and the obligation to

reduce the global warming by reducing the consumption which necessitates a paradigm shift in how we approach economic and social development and the safety on the planet.

The development of industrial activities, specifically in the big cities caused and causes actually a deep demographic explosion. This involves urban planning to incorporate and create green spaces and sustain the infrastructure by adopting of more adaptive capacity against serious social, economic and environmental threats in many countries including non-industrial ones.

Certainly, we mustn't neglect that many efforts and conventions have been done and settled in order to reduce global warming by 1.5 degrees Celsius. As it happens, we mention here the adoption of the Rio Declaration on Environment and development in 1992 and the Paris Climate Agreement signed by 200 nations, which target to reduce the temperature by 2100 if everyone around the world engages in it.

The purpose of this paper is to explain on one side how to tackle the challenges of population growth in the urban areas and their impact on the climate change, on the other side, how to build resilient and green and safe cities by reducing environmental damage and tackling climate change wisely and efficiently.

To do that, we refer to many recent studies, videos, debates of the specialist scientists and scientific interventions that aim to prioritize the climate policy by adapting the needs to expenses.

1- Resilience and intersection

Resilience is used in many fields such as psychology, anthropology, sociology, and so on. In the narrow sense, the resilience refers to the return rate to equilibrium upon a perturbation. In a different perspective, resilience is defined as bouncing-back after a disturbance or recovery time.

Today we are talking about the approach of adaptive resilience with adaptive systems. This means learning how to cope with challenges and changes by developing the capacity to deal with them.

In this sense, Holling.C.S (1973) states that there is a relationship between resilience and ecosystems or global environment by considering the resilience as a way to absorb change and understand the ecosystem capacity.

Furthermore, the concept of ecological resilience is related to adaptive management, according to Folke.C. resilience reflects the ability of people, communities, societies and cultures to live in development with change, with ever-changing environments and cultivates the capacities to sustain development in the face of change.

In a few words, we can summarize that ecological resilience is focused on the adaptability to the environmental changes and on the capacity to sustain development by creating favourable conditions and enabling them to meet needs throughout mitigation, for Adger (2003,p.1), resilience focuses on “the ability to persist and the ability to adapt”.

We notice that the urban area can undergo many dynamic and interactive changes and is characterized by the presence of many difficulties related to the demographic transition, the human population growth, the heavy traffic on the roads and pollution (air, water and land). In

fact, these social and economic difficulties among others impact ecosystem, human and animal lives and contribute to raising the global warming. The questions we can ask are : how to surrender the threats causing by the demographic growth? How can we protect our environment and balance population growth with resilience in urban areas? What are the efficient issues and solutions to limit the influences of the growth demographic on urban area?

2- The impact of population growth on climate change.

Demographic growth or population growth refers, in general, to the increase in the rate of population in a region or in a particular group, it usually dues to many factors such as birth rates exceeding death rates, immigration, cultural and religious influences, improved healthcare, social and economic factors and government policies.

The demographic growth can have both positive and negative implications. The growing population is necessary to contribute to economic development, wealth and cultural diversity, it can however pose challenges related to urban issues. In addition, demographic growth raises anthropogenic disturbances and often causes overpopulated urban areas due to migration to cities in the order to find the better opportunities which causes traffic congestion, insufficient infrastructure, a lower quality of life and inadequate housing, strained resources and environmental impact. This factor, among others, contributes to environmental degradation, increasing pollution, deforestation and escalating demand for resources and energy.

The main impact that interests us is the increase in populations, which immediately leads to an increasing in Carbone missions by unpredictable agents such as the emergence of new properties which influences the interaction of all agents (e.g., Lansing and Kremer 1993, Levin et al.2013).

To combat the negative effects of demographic growth on climate change, it's important to have sustainable and comprehensive policies that address issues like resource management, social equality, urban planning, and environmental conservation.

Scientists, researchers and policymakers must consider all these challenges in order to ensure social equality, the well-being of current and future generations and the safety of our planet.

3- Resilient issues

Without a doubt resilience, climate change and demographic growth are interrelated concepts. They pose a real problem that requires a comprehensive and collective set of strategies and policies that involve the ability of individuals, ecosystems, institutions, communities and societies.

Undertaking methodology and pedagogy to tackle climate change by adapting human needs and demographic growth in the urban area and the safety of the ecosystem by applicable resilience is very hard to achieve because of many reasons and factor witch implicate efficient approaches and measures.

3.1- Effective leadership and institutions

Adger (2000 ,p.351) studies institutions as a result of the level of exclusivity and inclusivity, moreover, strengthening global governance structures and institutions enhances the balance

between knowledge (facilitate learning), action and updating assessments. The inclusion of government structures in equitable governance that ensures powerful measures emanated from authority in social systems (Kenneth, 2005).

3.2- Infrastructure resilience standards

To confront positively demographic growth in urban area, it is essential to incorporate climate-resilient standards into the planning and construction of infrastructure. This can include the investing in housing, education, healthcare, green spaces and. These investments including in innovative technologies can all contribute also to increased infrastructure resilience and responding to demographic growth.

Furthermore, these measures develop the sense of resilience, for Norris et.al. (2008 :130) stability could mean a lack of resilience and indicate failure of the function of the resilience.

3.3- Establishment of global cooperation and governance

Promoting international collaboration and assisting vulnerable nations in building resilience and enhancing their participation in the international community becomes a vital requirement.

Thus, the global cooperation must be done by unanimous convention, agreements and approvals target justice and equity in the distribution of resources, limitation of global temperature rise and encouraging the concerned countries to adopt sustainable practices in the order to decrease the rate of international immigration and rural exodus .

3.4- Electric vehicles alternative

Studies have shown that using electric vehicle can reduce the greenhouse gas emissions and lower carbon dioxide emissions. Besides, Lomborg Bjorn(2020) affirms that Electric cars are been promoted as another effective way to reduce carbon emissions. Most drivers are reluctant and hesitant to change to electric cars because they are substantially and significantly more expensive and the need for recharging causes range anxiety. In a different way, Lomborg compares also the damage costs of gasoline-powered cars and electric cars.

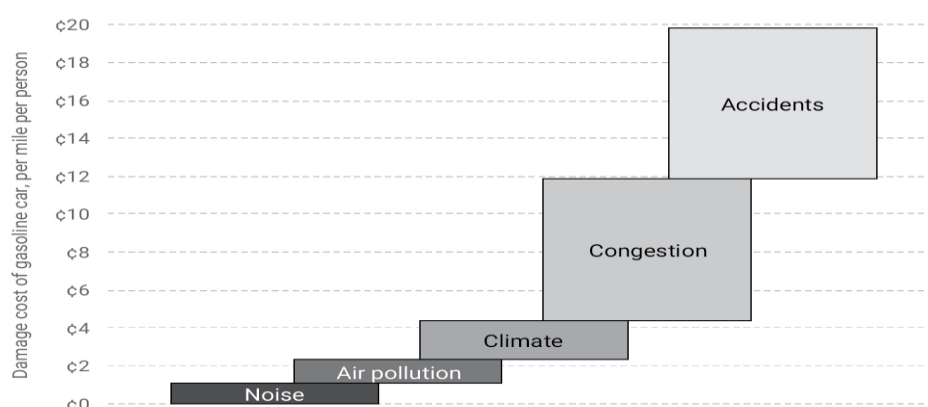


FIGURE : Damage costs of driving a gasoline-powered car one mile, per person. (Notice the climate impact is likely vastly exaggerated.)

Generally, electric vehicles seem to be another aspect of resilience to respond to the demographic growth in urban areas .

3.5- Promoting Nuclear energy

Scientists and researchers confirm that nuclear energy is very safe and doesn't emit carbon dioxide, it also emits less radioactivity than coal.

According to Bjorn Lomborg (2020), the nuclear energy has the lowest risks if death of any form of energy, besides Lomborg declares that nuclear energy kills about two thousand times fewer people than coal power, because of coal's due to massive pollution. It encourages the development and adoption of clean energy technologies and reduce the rate of climate change.

3.6- Raising carbon taxes emission and promoting renewable energy

It's the type of penalty to punish the industries that pollute the atmosphere, in general, it's a price on carbon missions encouraging companies and individuals to reduce their carbon footprint and provide flexibility for industries to transition.

Renewable energy encourages the development by the adopting clean energy technologies. Financing and investing in renewable projects permits acceleration of the energetic transition away from fossil fuels, so it reduces the negative impact on climate change.

3.7- Common transport and green spaces

Common or public transport leads to a reduction in pollution in the atmosphere and emission by the reduction of the number of vehicles on the roads.

Green spaces provide better health clean air and improve quality of life and sustainability of cities, they are also essential of climate-proof and sustainable environment and rebuild green and smart cities.

4- Results

The purpose of results shows that there are many keys of resilience which can put in place in the urban area (city) in order to deal with demographic growth focused on the intersection of institutions, leadership, cooperation, governance, infrastructure. In this sense, many alternative such as common transport, renewable energy, extension of green space, raising carbon taxes, encouraging and promoting electrical vehicles and nuclear energy.

However, putting these issues in place involves more costs by the implantation of more infrastructure, investing in education, finding global concertation between different actors and adapting sources with needs and consumption.

Putting in place a real urban resilience in order to minimize the impacts of climate change and of environmental degradation requires a common commitment, domestic and foreign investment.

Conclusion

Facing demographic growth by resilient policies implies the intervention of scientists, policymakers, citizens, different institutions on local and international scale in order to reduce

the vulnerability and the impact of climate change and ensure the current and future generation the wellbeing.

Green cities, green economy and safety planet are a common target. Certainly, that provides more cost, more commitment and implication of each one. Today resilience is required in all fields and particularly in climate change which poses many threats as greenhouse, micro-climate, cyclones, storms, hurricanes, floods, heatwaves, ice sheets, shifts of distribution of animal and plant species, etc.

This situation causes more emigration and more concentration of the population in specific areas. This contributes to have more demographic growth.

Resilience by adaptation, mitigation and innovation remains the essential key to facing the negative effects of demographic growth.

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