A Comparative Analysis of the Progress of Curbing Ozone Layer Depletion and Climate Change by the International Community

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Abstract

The international community and the leaders who, in 1987, took part in the pact that led to reduction of the substances causing the depletion of the ozone layer need to be, indeed, commended. If there was no agreement, the feat of improvement in the ozone layer will not be achieved. Pursuant to this, these international and scientific achievements should continue unabated. It is against this backdrop, that this paper, using modest comparative analysis, analyses reasons why and how it is imperative that the issues surrounding global climate change should be tackled in order to bring down the heat that is ravaging and destroying the planetary, humans and ecosystems resources.

Keywords: Ozone depletion, Global climate Change, International Community, Calamity and Catastrophe

1. Introduction

The world was in celebration mood when it was announced by the United Nations that the "earth protective but fragile ozone layer is finally starting to rebound...Analysis of several different satellite records and surface monitoring instruments indicates that the ozone layer is no longer declining" (Rothkopf, 2014). This, according to the United Nations and Scientists, is "rare environmental good news, demonstrating that when the world comes together it can stop a brewing ecological crisis" (Rothkopf, 2014). The satellite records and surface monitoring instruments shows that "that the ozone layer, the life-enabling boundary that shields the Earth from the sun's ultraviolet rays, is showing signs of slight thickening after years of depletion."

This announcement came shortly before the United Nations Climate Submit 2014 with the theme 'Catalysing Action.' While the news of the improvement in ozone layer was being reported, simultaneously the United Nations Submit was emphasizing on the need for more efforts to be made in order to tackle global warming and climate change. Both environmental news came at the time when countries like Bangladesh, Pakistan and India were battling with excessive rainfall and massive floods which had swept and eroded away both living and non-living things in their countries. These environmental disasters and the subsequent catastrophe have been scientifically proven to have manifested as a result of climate change. Chakraborty and Newton, (2011) assert that since "1750, global emissions of radioactive gases, including CO₂, have increased rapidly, a trend that is likely to accelerate if increase in global emissions cannot be curbed effectively. Man-made increases in CO₂ emissions have come from industry, particularly as a result of the use of carbon-based fuels. Over the last 100 years, the global mean temperature has increased by 0.74°C and atmospheric CO₂ concentration has increased from 280 p.p.m. in 1750 to 368 Temperature is projected to increase by 3-4°C and CO₂ concentration to increase to 1250 p.p.m. by ~2095 under the A2 scenario, accompanied by much greater variability in climate and more extreme weather-related events."

At the United Nations Climate Submit 2014, while there were general exchange of pleasantries and applauding that the international community is doing a lot to slow down and reduce global emissions and climate change, Graça Machel, "the widow of Nelson Mandela, punctured the self-congratulatory mood of the UN summit saying world leaders had failed to rise to the challenge of climate change." She asserted further that "there is a huge mismatch between the magnitude of the challenge and the response we heard here today...the scale is much more than we have achieved." Machel observation is against backdrop that despite the fact that close to 300,000 people turned out for the climate march, the international community and the leaders "held back on making new commitments to cut greenhouse gas emissions or to give significant climate finance to developing countries, leaving it to business, cities and campaign groups to produce the real action on climate."

The good news on the improvement in the ozone layer is therefore one step forward but the news on the massive rainfall and the floods that swept people and properties away in the countries mentioned above took the world many

steps backward.

2. Ozone Layer's Improvement: What and How?

Receiving the good news that the ozone layer has witnessed tremendous improvement is commendable and very relieving. The catalyst for this was as a result of the collective stance of the international community to ban the use of chemicals in making aerosols and refrigerants. The intervention that was made about 30 years back is now yielding satisfactory result and both the environment and the people living in it are healthier and happier. Sustaining and possibly improving on this achievement should therefore be the concern and stance of the international community. To this end, dermatologist Clay J. Cockerell, M.D., president of the American Academy of Dermatology admonished that "this news about the ozone layer is encouraging, but people should not get a false sense of security. Ultraviolet radiation is still dangerous and we urge people to be 'sun smart' when outdoors."

With regard to the ensuing bad news of the impact of the global climate change, it is hoped that the international community will also have the determination as they did in 1987 to ensure that emissions reduction are vigorously pursued and more importantly combat and curb carbon emission in order to reduce the warming of the atmosphere. If the intervention then has worked for ozone layer, it can also work for curbing carbon emissions global climate change.

3. Impact of Human Activities Causing Harmful Emissions

It has been scientifically proven since 1970 that the depletion of the ozone layer is majorly as a result of human activity. "man-made chlorofluorocarbons, called CFCs, released chlorine and bromine, which destroyed ozone molecules high in the air. After scientists raised the alarm, countries around the world agreed to a treaty in 1987 that phased out CFCs. Levels of those chemicals between 30 and 50 miles up are decreasing" (Rothkopf, 2014).

Destruction of the ozone layer as a result of these man-made activities are causing health problem like cancer and the United Nations has indicated that "without the pact, by 2030 there would have been an extra 2 million skin cancer cases a year around the world." This is similar to the destruction of the atmosphere as a result of burning of fossil fuels which release noxious and dangerous substances including carbon dioxide causing various environmental problems (Dincer, 2001) including the destruction of agricultural sector thereby causing uncertainties such as food insecurity, (Kaur, 2007) diseases and health hazards and threatening the existence of human and ecosystems (Chu and Karr, 2001).

Global climate change is generally caused by emission of carbon dioxide into the atmosphere (Solomon et al. 2009). This has been happening since the beginning of the industrial revolution and the momentum has now increased drastically as a result of competition for economic growth and development especially by the economies that are departing from developing to emerging economies (Hardy, 2003). According to Chakraborty and Newton, (2011) "the earth's climate has always changed in response to changes in the cryosphere, hydrosphere, biosphere and other atmospheric and interacting factors. It is widely accepted that human activities are now increasingly influencing changes in global climate." In the same vein, Hardy (2003) also pointed out that "unprecedented changes in climate are taking place. If we continue on our present course, life on earth will be inextricably altered." The study conducted by Solomon et al. (2009) revealed that "the severity of damaging human-induced climate change depends not only on the magnitude of the change but also on the potential for irreversibility... the climate change that takes place due to increases in carbon dioxide concentration is largely irreversible for 1,000 years after emissions stop."

Despite all these warnings, industrialised countries are not slowing down; they are still using massive fossil fuel energy which causes emissions for industrial activities (Armaroli and Balzani, 2006). The combination of all these unfriendly environmental activities is now causing the earth's temperature to rise leading to climate change. (Llewellyn, 2007).

In their seminal study, McMichael and Woodruff (2005) assert that "global climate change is one of a larger set of large-scale environmental changes occurring in today's world. These changes reflect, in various ways, the increasing human domination of the ecosphere, as human numbers continue their unprecedented expansion and as human economic activities intensify. All of these changes — climate change, stratospheric ozone depletion, biodiversity loss, worldwide land degradation, freshwater depletion, disruption of the elemental cycles of nitrogen and sulfur, and the global dissemination of persistent organic pollutants — have great consequences for the sustainability of ecological systems, for food production, for human economic activities and, via those and other pathways, for human population health." The study elicits current planetary crisis and identified unprecedented expansion of human activities as the major contributing factor causing global warming, climate change and the depletion of the ozone layers. The health consequences of these activities are well-articulated and they warn that humans should begin to shift away from these destructive activities to

more sustainable activities where humans will collaborate with the environment in order for the planet not to become extinct.

4. What it Takes to Achieve the Environmental Success

Whenever the international community speaks with one voice on issues that are threatening human existence, the outcome of such international cohesion will deliver the desired result (MacBride, 2003). It takes concerted political and collective wills to do this (Starkey, 2005). The International community had demonstrated that it can achieve a lot when it confronts common problem and addresses it with dispatch (Kanbur et al, 1999).

The intervention of the United Nations collectively has been applauded thus "it's a victory for diplomacy and for science and for the fact that we were able to work together." Furthermore, that "these early signs indicate one of the strongest success stories of international cooperation in the face of an environmental threat." No one wants the earth to liquidate, it is therefore imperative that everything should be done to protect the planet and the living things in it from being extinct (Rich, 1994). It is also imperative that the sustainable intervention made in 1987 should continue to thrive regarding environmental issues. The same effort put into the improvement of the ozone layer should be adopted to curb climate change surge (Gelbspan, 2005) in order to prevent the planet's climate system from reaching a catastrophic tipping point.

According to the Economic Voice Report of 2014 where it asserted that there are solutions to the unprecedented climate crisis if both government and private sector commit to concrete action to eliminate and curb greenhouse gases and that "Such a global commitment would mitigate more than 100 billion metric tonnes of CO₂-equivalent by 2050." This assertion is made against the backdrop that "the political response to climate change to date has been wholly inadequate ...the international community now stands at a crossroads – in one direction lies political apathy, unstoppable climate change and massive disruption to life as we know it and in the other is affirmative action to rein in greenhouse gas emissions and an opportunity to bring the planet back from the brink" (Economic Voice Report, 2014).

5. Sustaining the Achievement

The feat that had been achieved by the international community regarding the gradual improvement on the ozone layer should be sustained, improved and strengthened (Weiss and Jacobson, 2000). This should be the next line of action by the international community. Undoubtedly, both the developed and developing economies collaborated and worked together in order to achieve this success and it is expected that they should now explore avenues to improve the gains they have made. Therefore, the ban of the substances causing the depletion of the ozone layer should be strengthened by tightening and closing loopholes through intensive monitoring, implementation and enforcement (OzonAction Programme, 2003). The international community should continue to enforce the law on the culprits and perpetrators of the depletion of the ozone layer in order to sustain the ban (Ramlogan, 2008). At the same time, the use of alternative substances that are not harmful to the ozone layer should continue to be strongly encouraged (Zaelke, 2006). Banning alone will not provide absolute result. The combination of imposed bans and provision of technological innovative assistance through ground-breaking research on the alternatives will result in better achievement towards the outright recovery of the ozone layer (Mosley, 2010).

6. Encouraging Emissions Reduction by Strengthening Interventions

The good news of improvement on the ozone layer is a vital lesson to the efforts on tackling climate change (Andersen and Sarma, 2012). The international community got it right through collective cohesive efforts to fight and combat the depletion of the ozone layer (Morin, 2014). This same effort can be emulated in fighting and curbing global climate change. Pursuant to this, the same political will and international support for the banning of substances causing the depletion of the ozone layer can also be applied to that of emissions reduction and curbing of global climate change (van Asselt and Biermann, 2007). In order to meet the standard set, climate negotiators and the international community need to enlist the support of all role players (Hoffmann, 2012). The industrialised countries should continue to cut emissions; the emerging industrialised countries should also do the same and start sourcing energy from the alternatives (Bond, 2012).

More importantly, the good news of the improvement in the ozone layer would not have been possible if countries have pulled out from the ban interventions. With regard to international effort to curb the surge of global climate change, some countries have pulled out from the agreement on emissions reduction and others are contemplating to pull out

(Barret, 2008). This has resulted in the inefficiency of the ban intervention for emissions reduction. Barret (2008) offers an acceptable opinion on what should be done to bring the member states of the international community in the joint effort to fight climate change and asserts thus "a new climate treaty arrangement must enforce both participation and compliance. This might be done by applying an enforcement mechanism, such as a trade restriction, to a new treaty styled after Kyoto. Potent trade restrictions, however, may lack credibility and legitimacy. An alternative approach recommended here is to break the problem up, with separate (but linked) agreements addressing individual gases and sectors, using the most appropriate means to enforce each component of the system. In bundling together all sectors and greenhouse gases in a single agreement, Kyoto has aimed to achieve cost-effectiveness at the expense of enforcement, which depends on the treaty's weakest enforcement link. The imperative must be to ensure that any future treaty arrangement can be enforced."

The attitude of pulling out is not good for solving a common problem (Jonassen, 2000). Therefore, by bringing all countries into the international fold where there is mutual understanding and inclusive cohesion that will foster benign environment, planetary environmental problems will be solved especially the problems of global climate change. It is worth the price to be paid in order to save the environment, atmosphere, ozone layer, human beings and the ecosystems (Schnurr and Holtz, 1998).

7. Conclusion

Whenever there is good news regarding the status of the environment, it gives the assurance that the environment is made more conducive to live in and humans will be healthier and happier. However, the reverse will be the case when the news of environmental calamities, disasters and catastrophe are frequent. It makes people sad and it creates an atmosphere of uncertainty and panic. What is being done to reduce the depletion of the ozone layer stable should be continued and further strengthened. There should be a continuous concerted effort to tackle and combat global climate change. A stable planet has many benefits both to human and the ecosystems. More importantly, it gives assurance that it will not be destroyed or extinct now and in the near future.

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