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Interface between Climate Change and Capitalism

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***Abstract*— Nearly two decades ago, the United Nations recognised the pace of climate change and the need to halt and reverse the climate change. There have been several environmental disasters acting as a call for attention to the rapid global warming causing climate change. The scientists and environmentalists around the world have been alerting all governments about the need to stabilise the carbon-dioxide levels and preserve natural resources. A few economic players have stressed on the need to switch to renewable sources of energy. Despite the recognition of the dire need to pursue environment conservation, the economies around the world have continued to be exceedingly capitalism-centric, converting natural resources into marketable products without paying heed to the environmental impact of utilisation of the depleting natural resources. The governments and businesses have created artificial capitalism markets in order to promote economic development by way of increasing consumption patterns, and Gross Domestic Product, consequently. Science has shown to the world that the rate at which carbon-dioxide and other toxic gases are being emitted into the atmosphere is ten times faster than during the End-Permian. However, if this capitalistic production and consumption patterns fail to change, they are paving way for a second End-Permian. This article discusses how the status quo of the capitalistic economies around the world are paving way for another global disaster occurring due to climate change.**

***Index Terms*— Climate Change, Capitalism, Global Warming, Environment, Environmental Restoration, Global Environmental Policy**

I. INTRODUCTION

The end of second decade in the 21st century is a pressing time to observe and pursue the agenda of climate change. More than two decades ago, the United Nations recognised that climate change is a concern of global nature, and there is a necessity to "*stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system*"[1], by way of enacting the United Nations Framework Convention on Climate Change (hereinafter referred as , "**UNFCCC**"); though does not contain any binding limits on emissions or enforcement mechanisms, it has outlined the international procedure to achieve the aforementioned agenda.

The UNFCCC currently has been ratified by 197 countries/ states/ regional economic integration organisations. Something that is perplexing is that, though this convention has been ratified by nearly the entire world, the member countries do not seem to be incorporating the necessary policy changes and measures to redress the issues related to climate change. The current status around the world with regard to state policies shows concentration in areas of economic development (also called, Gross Domestic Product or **GDP**) and/ or personal freedom and/ or the interface between economic development and personal freedom.

The reasons for discrepancies between ratification and implementation or reaction to this global agenda could be manifold. The authors of this paper are of the belief that this could happen for either of these two reasons, among several other reasons, *viz.,* the governing democracies in various states do not recognise the emergency of climate change issues or, the voting individuals are lacking awareness about the climate change phenomenon which threatens the planet. The latter could efficiently explain the obtuse choice of leaders in countries around the world.

In the first half of United States' President Donald Trump's regime, he announced America's withdrawal from the Paris Agreement on Climate Change Mitigation attributing it to his 'America First' policy. Though this withdrawal would only be in effect by the end of 2020 and the United States is expected to continue to maintain its commitments under the agenda, Donald Trump has been openly dubious of the report on climate change which has been compiled with the help of USA's government agencies and departments [2]. This is to state that 62 million of the world's population, who voted for Donald Trump in the 2016 Presidential Elections in the USA, are in support of Donald Trump's capitalist-centric and country-first policy agenda. One of the opinions is that the problem with climate change being a pressing issue lies in the challenge to agree on the basic facts that should form the ground rules of a political debate [3].

The status quo of most economies around the world is that of pseudo-capitalism, including India. It can be noted that the theory of capitalism (discussed in the following section) has been artificially tweaked by the governments and business actors to motivate an economy towards environmentally unsustainable higher-end economic activities, which involves an exploitation of dwindling or limited resources in order to achieve economic development. This pivot from the theory of capitalism to the artificially tweaked capitalism could be attributed to be one of the major contributors of climate change around the globe. Furthermore, since climate change is an ethical consideration rather than an economic one, the economies and governments are bound to ignore it owing to their profit-centric operational model.

The capitalistic economies and their activities are causing a direct and an adverse effect on the environment, causing global warming and climate change. The climate change consequently causes effect on health and environment which leads to the governments to spend money to treat the ill-effects of climate change. This vicious cycle would only be redressed if economies pivot their efforts towards environment restoration alongside sustainable usage of

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resources. In light of this, this study elucidates the concept of capitalism and the activities therein around the world and how these activities are directly contributing to climate change.

II. Modern Age Capitalism: A Catalyst to Climate Change

A capitalistic market is an economy where trade and economy is controlled by private players, who are the owners of resources and means of production, *viz.*, entrepreneurship, capital goods, natural resources and labour. These private players conduct trade in the economy with a profit-motive, and hence their efforts and motives are profit-centric. The theory of capitalism has been founded as a mean of efficiently allocating scarce resources, while encouraging human ingenuity and improving the quality of life of participants. This theory is based on the laws of supply and demand, which assume that every consumer rationally evaluates each purchase that they make using a cost-benefit analysis. If the benefits of purchasing an item outweigh the costs, then the consumer will buy the item; otherwise, they would not. The theory also presupposes that, consumer is the ultimate driver of demand for products, and suppliers will conduct production at the equilibrium demanded by the customer [4].

However, there are several flaws in this theory of capitalism which causes it to be called 'pseudo-capitalism'. Firstly, rational consumers would conduct a true cost-benefit analysis for each purchase they make. This means, a consumer would take into consideration various factors like the resources utilised for production, where the product would be disposed after use, the consequences of using it and etc… This would enable a rational consumer to understand the environmental impact of a product in terms of currency, which would incorporate the value of a stable climate, including various factors like biodiversity, natural life-supporting systems and natural resources. This would lead the consumer to a conclusion that, costs outweigh benefits of products, thereby the capitalist economy would function in synchrony with environmental impacts of the product therein. However, a typical consumer in a capitalistic economy is not driven by this cost-benefit analysis.

Secondly, the current capitalistic economies are a façade for governments and businesses to metamorphose vast amounts of natural resources into marketable products, which has generated vast amounts of wealth and prosperity. Further, the development of countries around the world is judged on the basis of their economic development (GDP) and, countries and businesses therein are in a constant race to achieve higher GDP by making more marketable products, which use more resources in turn. These pseudo-capitalistic markets have tendencies to use resources until it is exhausted, which is then easily substituted. This is because the economy is driven by artificially created consumer demand, which does not work on the needs of the consumers but by the appeal of the marketed products. In order to achieve higher levels of development, the producers would find an alternative to produce the product.

In a recent study [4], the correlation between capitalism and climate change has been stated as a result of each product having a by-product. The economy's ability to consume a large amount of resources has also resultantly produced a large amount of waste in the form of physical garbage, atmospheric pollution, and other forms of environmental degradation. Atmospheric pollution over a period of time resulted in global warming and climate change. A recent opinion states that the globe is at an ecological crunch point and that we do not have the economic tools to deal with it [5]. Furthermore, with the ever-growing population around the world, the consumption patterns and generation of wastes, as a consequence, are expected to increase by several times, thereby, increasing atmospheric pollution thereof. The United Nations states that the world's population is growing by 81 million people each year, with the exception of Europe whose population is decreasing insignificantly each year. A report states that the globe will have to host roughly 9 billion people by 2030, with Africa accounting for more than 40 percent of the absolute increase in the world population [6].

III. The Climate Change Phenomenon

Climate Change, according to the traditional definition, means a change in weather patterns which lasts for an extended period of time which ranges between decades to millions of years. One of the most recognised climate change phenomenon in the history of the earth is the 'End-Permian', also called the "Great Dying". This phenomenon erased about 90 percent of life in the ocean and 75 percent of living beings on land.

Though the exact cause of the "Great Dying" could not be attributed, as the event occurred nearly 250 million years ago, scientists have categorised the cause theories into two, *viz.*, catastrophic or gradual process theories. The most plausible theory is for the event to be a combination of causes, i.e., a sequence of catastrophes in increasing order of severity, which released large quantities of methane and carbon-dioxide into the atmosphere, which resulted in global warming. The possible severe anoxic event caused as a consequence of the global warming has wiped out almost all possible forms of creatures requiring oxygen on Earth.

There is a popular opinion among environmentalists that, the rate of climate change on Earth in the 20th and 21st centuries is 10 times faster than that of the End-Permian, that is to say, we are releasing carbon-dioxide into the atmosphere 10 times faster than it occurred at the Great Dying. A paleo-climatologist, Lee Kump has stated that the gases released into the atmosphere, which lead to the Great Dying, spanned out over a period of 20,000 years, which means that less than two petagrams of carbon per year were released into the atmosphere and the oceans. He states that, this figure is a mere fraction of the rate at which the burning of fossil fuels is delivering greenhouse gases into the air today, which is quantified at nine petagrams of carbon being pumped into the atmosphere each year [7]. In light of this, it would be a reasonable inference that minor consumption changes like switching to re-usable bags, minuscule number of households and cars around the globe, switching to renewable sources of energy have taken place.

Naomi Klein, in her book [8], states that the economies around the world ought to take a "Zero Year", which means a year away from focusing on economic development, to

concentrate on repatriation of the environment, in order to bring the climate change scale closer to neutral, if not positive. In this 'Zero Year', the agenda of all world democracies would be centric upon reversing climate change and preserving the environment for the future generations. However, this is a Utopian agenda for the current capitalism-centric and globally competing economies.

The evident climate change is an indicator of rapidly deteriorating environment and increasing global warming. Several noticeable changes have already occurred, like the shrinking of glaciers, breaking of ice on water bodies, shift in plant and animal ranges, extreme weather conditions, rising sea level, early or late seasonal changes like flowering of trees and etc… The Inter-governmental Panel on Climate Change (IPCC) has forecasted a temperature rise of 2.5 to 10 degrees Fahrenheit over the next century. They also predict that the net annual costs will increase overtime as global temperatures increase [9].

There exists a vicious cycle of environmental degradation and capitalism in the 21st century. The capitalistic activities around the world are directly and indirectly leading to global warming and climate change, and the consequent climate change is increasing the costs of governments and businesses to maintain health and resources in the States. The seemingly simple solution to this cycle would be environmental conservation; however, as discussed above, mere environmental conservation efforts would be futile at this day owing to the level of degradation. There need to be profound efforts for environmental restoration and reversal of climate change, which would then bring the world to the next step of 'environmental conservation', which would mean preserving the environment's status quo in order to provide same or similar environment to the future generations.

IV. Environmental Restoration

The issue of climate change and global warming is not that of a single or group of states. The entire planet, sooner or later, will face the adverse effects of climate change. This means that the solution for climate change must come from and at a global platform, and this solution shall be of the nature of disaster management. Therefore, redressing climate change is the need of the hour, and the solutions evolved are to be implemented urgently and by all.

The two categories of solutions to climate change are mitigation and adaptation. The former involves reducing the flow of heat-trapping greenhouses gases into the atmosphere. The plethora of solutions which fall within mitigation measures include an immediate shift from fossil fuel sourced energies to renewable sources of energy, extreme minimization of waste disposal, control of population outburst, mass plantation of greenery in order to stabilize carbon-dioxide levels and many more. The goal of mitigation measures is to reduce human interference with the climate system and "stabilizing the greenhouse gas levels within a period which sufficiently allow ecosystems to adapt naturally to climate change, ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner" [4].

Adaptation measures primarily aim at adjusting to actual or forecasted climate change. This means reducing living beings' vulnerability to adverse effects of climate change, like rising sea level, extreme weather conditions, food scarcity and etc… It also includes making opportune of several climatic changes; for instance, longer weather seasons could be made opportune of to get higher yield of seasonal crops.

There are studies to state that carbon-dioxide mitigation or even an impractical halt of all carbon-dioxide will not avert the impending climate disasters - including annual deaths from extreme heat, mass relocation of millions of people and the irretrievable loss of billions of animals and many rare species. The studies also state that, in the status quo of the regulatory environment, there is not much hope of mitigating climate disasters which are lined in the near-future. However, the hope is dependent on the possibility of adapting to a more comprehensive view about greenhouse gas emission problems, combined with new consumer, corporate, and legal strategies to move control efforts forward [10].

Nevertheless, the authors of this paper are of the hope that imposition of deterrent environmental or climate change taxes would act as a countervailing measure to the climate change caused in a capitalistic economy. This means that a business ought to be taxed according to its adverse contribution to climate change, which could include various factors like, the renewability of resources used for production, whether the end-product is biodegradable and to what extent, the lifetime of the end-product and etc… This is typically an environment impact assessment conducted for the end-goods in the production cycle. The cost of production of products adverse to the environment would be higher than the ones which are more environmentally friendly.

It is also observed in India and most states around the world that the production of waste seems to be on the rise. Furthermore, the residents fail to separate the biodegradable and non-biodegradable wastes, which increase the burden on municipal agencies, who perform a lacklustre choice of work with regard to waste separation. The authors of this paper propose the introduction of 'Waste Tax' at the municipal level, which would impose a weight-based fee for disposal of waste from households, industries and etc… The objective of this fee imposition is two-fold; first, the persons disposing the waste would be made conscious of the quantity of waste they are disposing, and second, they will make an attempt to reduce waste production and, also ensure biodegradable wastes are disposed in a proper manner at the base levels of consumption.

As discussed above, the GDP is a standard indicator of a nation's wealth or economic development, which could be the reason for the capital-centric economies around the world, aiming at maximising production technique by exploiting limited resources found in the environment. The seemingly large-scale solution to this would be introduction of an economic scale to measure environmental degradation or preservation, wherein the resultant figure would be read in consonance with the GDP of a nation to determine their development. This would result in States' governments focusing on production alongside environmental protection.

Further, a yearly assessment of tax-paying assessees should also be accompanied with the mandatory calculation of the carbon-footprint of the assessee. This would ensure that

governments as well as citizens are conscious of carbon emissions and its aftermath. This would ensure that, the direction of the assessee's consumption pattern move towards a more environmentally sustainable pattern and, would also create awareness among laymen regarding the adverse effects people are causing to the environment.

CONCLUSION

At the core of the issue of climate change, exists the fact that a capitalist economy and the players therein are neither capable of assessing the environmental impact of their activities conducted, nor are they capable of ascertaining the intrinsic value of natural resources. This is to say that, an economist would look at a natural resource's value in its ability to be converted to a marketable product and the value of such marketable product. This incapability can be solely attributed to the profit-driven businesses and economic development driven countries, wherein the total number of goods and services consumed each year is the indicator of the nation's wealth and economic development.

However, the pace at which climate is depreciating is ten times faster than when the ancient End-Permian occurred. The rate at which people around the world are deteriorating the environment, it is reasonable to state that we are paving way for a quicker version of the Great Dying in Earth's near future wiping out nearly all forms of living organisms. This is because, adaptability of living beings is slower than the pace at which the climate is changing.

It is exceedingly important that people and economies realise the immediate need for environmental restoration and understand the value of environment in a manner where they place the environment ahead of their economic wants. If the global population progresses in the present consumption pattern in their capital-centric economies, then, according to various scientific studies, it can be anticipated that the cost of mitigating and adapting to the rapid climate change will be more expensive in future.

The governments ought to pivot towards a sustainable way of economic development rather than in a crude manner, and the State around the globe need to reach consensus on a global arrangement to restore environment and reverse climate change. This can only come with the recognition that this is an issue for every individual on this planet, and not for a specific region, country or state.

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