STUDY ON GLOBAL WARMING AND RECOMMENDATION FOR SOCIETY TO PREVENT TEMPERATURE AND C02 LEVELS INCREMENT

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I. INTRODUCTION

C02 was formed over billions of years, as result of organic matter from dead plants and animals. This organic compost was transformed into coal, oil, and natural gases. Humans used theses fossil fuels to a fast developed and progress.
Global Warming is not an exclusive phenomenon from this time. Global warming is stated in the history from early time, as natural occurrences from nature. Scientist positions defends that there is a cycle nature that changes every 5000 years, as well mini ice ages during short periods, for example 5 years. In this past thesis, from last century, climate change is a natural response to this occurrences, that can not be controlled by human presence, change the ecosystem, and determinate challenges for all living earth beings the capacity to adaption.
Since the Industrial revolution that global warming has been left a huge finger trip in the carbon emissions. The C02 levels have been increasing as consequence of deforestation. The fossil fuels, for example coal, gas, oil, petrol, helped to developed society, however have increased the global warming more than ever, and damage the natural resources. During this time machines replaced the manual labour, for example wind, water, and wood, for fossil fuels. In that time the fossil fuels particularly the oil, were considered unlimited resources, however the American geophysics M. King Hubbert predicted in 1949, that fossil fuels will be need replaced for other energy sources.
Along the years the fossil fuels were having large support for governments spending, lobbies, subsided and on tax policy.

The industrial revolution brought as well the use of chemicals in agriculture, in order to make mass production of food. However there were a lot of consequences using pesticides and insecticides on species, land, and ecosystem. For example toxic effects on fish, birds, and damage on aquifers.
The global warming effects made Hugh impact and transformation in the year 2000, when temperatures raised exceptionally. At that time scientists, governments and organizations started to take seriously concerns about the consequences.
The Manua Loa Observatory in Hawaii reported for the first time in 2017, that C02 surpassed 410.05 parts per million presences in the atmosphere. Scientists from IPPC, have conclude as well, that the dominate cause for global warming are human activity.

II. A PATH FOR THE FUTURE

2.1. Society improvements and consideration in new technologies

The energy management i renewal energy is key for natural resources preservation. The coal industry is not only danger for environment, as well for public heath. New power plants are being banned in developed countries, and many are being shout down. In general the use has been dropped. Taking the example from Canada, that closed 16 fired power plants in 2012, the difference in the environment was visible. The smug days were reduced from 53 to only two.
The wind, sun, biomass, ethanol, biodiesel make an important transition to a divestment in fossil fuels, and investment in renewal power technologies in large-scale. The construction sector has as well challenges to build more environmental friendly and avoid concentration of carbon dioxide.
The methane emissions reductions is possible, converting organic waste into biogas. This process can be made using digesters. Germany is a leader in this sector, with eight thousand. In rural China, more than 100 millions people use small scale digestors.
This energy transition is not only the shift from the fossil fuels to wind and solar, as well stop with drilling and fracking that causes disruption of human lives. The cost from wind and solar are falling down and new investments are being made in countries around the world, For example in Africa and Latin America.
The way that the space is organized in the city for transport, as well correspond to a better and efficient way to manage and control the emissions. Twenty three percent of global emissions has origin in the transport sector.
The mass transit system has been implanted in many countries around the world, and defines strategies to manage transport in the cities. BRT is a example, is a

bus rapid transit where there is a separate passage for buses and the normal transport. As well the offer for options bring the possibility to a model shift from transport, where the emissions are reduced. Mass transport improves mobility, livability, and equity in cities.

The High-speed rail transport is as well responsible for decreasing the emissions, because is almost powered exclusively by electricity, and the energy source is more cleaner for the future. The normal trains in other side, are powered by diesel burning engines, that are more poluent. In this sense in order to reduce the emissions the companies are improving fuel efficient, whether diesel powered, or electric trains is increasing. Including hybrid diesel-electric engines and batteries, and better locomotives.

The ship industry that carries goods for example iron ore, rice produces three percent of global greenhouses emissions. The percentage can grow even from 20 to 250 percent in 2050. The industry is being redesign in different levels, for example making shipping safer and cleaner. For providing efficient the vessels tend to be larger and longer, and passages trough the water for reducing fuel use. Mantaince and operation innovations lead to provide efficiency. The use of biomimetic coating allow to keep hulls for smoother sailing. Reducing the ships operation speed, reduce the fuel consummation up to thirty percent.

For improving the air quality and health form this industry in many cases the ports require that the ships switch to cleaner burning diesel fuel, and as well the docked ships plug in to onshore power, instead of fueled generators for power.

In order to improve the energy efficiency design index is establishing, new concepts in the new buildings. Another proposal from the sustainable shipping initiative in partnership with World Wide Fund and Forum for the future, are working together to create a completely sustainable shipping industry by 2040.

Experts from International Maritime organization, advice that delays in innovation in this industry, can cause seventeen percent of global carbon emissions in 2050. In this sense the companies witch goods are being transport can have the mission to make them responsible for environment, as well the rightship, and carbon war room organizations can be contributively for emissions reducing. This mean improvements to make the industry with a cleaner certification.

The car transport sector requires new standards for selling with efficient and clean proposes. The hybrid vehicles were a first transition for diesel cars, in the sense, they save in the use of fuel, and have a sophisticate technology as well, that can enable in the future the transition for 100% percent electrical.

The 100% electrical cars are four times more efficient than gas, they are powered by grid or distributed renewables including hydrogen-powered, and sixteen percent more efficient than traditional.

The electrical bikes (e-bikes) are very popular in china, they have the 95 percent of global e-bikes sales. This byclicles are convenient, healthy and affordable way to move around congested cities, curbing carbon emissions at the same time. The e-bikes have a small battery – powered motor that can add speed. The e-bike have more higher emission than walking or riding a normal bicycle, however less than cars, the electric and most off mass transit.

The ridesharing is a social invention, where people share their cars, mainly for going to work, and can at the same time save money, and share expenses. New technologies are appearing in the sector, for example, the smartphones allow people to share real-time information about where they are and where they are going, and the algorisms that match them with others, and maps with the best routes are frequently being approved.

The aviation sector is a high source of carbon dioxide and can be two and a half and four times much warming as the equivalent pollution release at the earths surface. This could be reduced with improvements in the engines. In order to reduce emissions the airline companies, are improving the fuels, using fleet upgrades, as well propulsions technologies, aerodynamic aircraft shapes, lightweight materials and improved operations practices can push efficiency and advances further. Although the costs can be higher, using biofuels is a great challenge to change reality in this sector. The airlines companies are in a transition condition for regulation started in 2016, when 191 nations agreed to curb aviation emissions in the Carbon Offset and Reduction Scheme for International Aviation, and pushing companies to reduce and accomplish emissions reduction till 2020.

The trucks are responsible Worldwide for eight percent of Global emissions. In this sense the appeal is to built better engines and aerodynamics, lighter weights, less rolling resistance for tires, hybridization an automatic engine shutdown. Adding as well fuel saving technologies, along with making new and existing trucks more efficient, and optimizing the best routes, is a good contribute for reducing emissions.

The telepresence transport is a way to reduce emissions in travelling. This technology opens a diverse way to communicate. This virtual interaction open new possibilities. For example using a mobile telepresence robot, a surgeon can advice on a rare procedure in real time, without travelling from Austin to Amman.

Forests for example the Amazonia, British Colombia, and Congo, are big repositories of biodiversity in the planet. The tropical forests are made to absorve carbon, support the water cycle, conserve soil, protect habitat, and provide sources and economic life for the surrenders. When deforestation occurs there is a

biological degradation, the soils erase, and the rain can no longer produce nitrification.

The deforestation of important areas like these examples, can not be made to propose of development and replacement for soya and biofuels (oil plant). The plantations made a significant difference when they are planted in areas that are not important to maintain the C02 levels. Stop the deforestation, and restore the forest, is a step to decrease the CO2 emissions.

The lands that were abandoned, degraded, or have suffered desertification, could face a transition to be restored. In this case returning to the native vegetation, the establishment of tree plantations, or the introduction of regenerative farming methods, are solutions to produce food. |In this sense allows natural processes to transform this spaces in healthy ecosystem

Protecting and changing farming is as well, reducing the use of nitrogen and pesticides and built and implement processes, organic methods, and techniques, that can reduce the emissions.

Multistarta Agroforesty is a new process to restore the soils and land around forest. This system help to prevent erosion and flooding, recharge ground water, support biodiversity by providing habitat and corridors between fragmented ecosystem, and absorbers and stores significant amounts of carbon. This system has large introduction in tropics, where are 250 millions acres, majority from cocoa plants.

The fertilizers used in farming are as well responsible for the increment of emissions, loss of fertility, water infiltration, and loss of production over time. the In this case, the solution for a better use of fertilizers, like the nitrogen, is a correct management of the nutrients. In this sense farmers are to be challenge with their education, in order to make a efficient application of regulations and limits that can be applied.

Tree intercropping is as well a challenge for farming, in the sense that the agriculture system is not extractive or hostile to live organisms, instead depends of discovering, innovating and practicing methods of agriculture, that feed a growing population, and provide improvements in soils, fertility, habitat, diversity and fresh water. Tree intercropping has many variations. For example the alley cropping is a system in which trees or hedges are planted in closely spaced rows to fertilize the crops grown between. Other variations of intercropping are as well, strip cropping boundary systems, shade systems, forest farming, forest gardening, mycoforestry, silvopasture, and pasture cropping.

Conversation agriculture is sustained in efforts to keep the soil together, as a valuable, living ecosystem that enables food production, and can help climate change. Utilizing this method farms seed directly into the soil. They leave crop residues after harvesting or grow in order to protect the soil using the traditional crop rotation. In the other hand the regenerative framing, is using the synthetic fertilizers and pesticides, and the crop rotation, rotate eight or nine different crops.

The microorganisms that live on the soil for example, organic matter, are as well important to bring nutrients into the ecosystem, and to the plants roots. The compost material is a valuable fertilizer. Avoid the methane creation on the land fill and allow retention of water and nutrients and aid soil carbon sequestration.

The plant material can be transformed in Energy. They are transformed in methane, and after converted to ethanol, biodiesel or hydrogenated vegetable oil for fuel. There are two different types. The perennials and annuls. Both result in different kind of bioenergy that we call biomass. The annuals plants, result in a cycle. While the perennials can be with more positive result, for the environment, because they are harvest in a process. When they are cultivated in a right way, they are more environmental friendly. For example contributively for the emissions reduction, preventing erosion, stable yields, and less vulnerable to pest.

Bamboo is a recognized plant, and is made of grass, composed minerals, suitable to resist degradation in a long term, and reduce carbon emissions. In this sense they can produce more pulp and be replace poluent materials for example cotton, plastics, steel, aluminium. However his management requires attention; the places where they are cultivated and the growth process, in order to avoid damage in ecosystems.

Using farmland irrigation systems, bring many positive factors in the ecosystem around. Is associated with energy demands and carbon emissions decreasing, crop yields improve, the cost of cultivation drop, and soil erosion declines.

The costal wetlands are very important to maintain the ecosystems balanced. They are habitat and sources for fish, migratory birds, a barrier defense against storm surges, flood waters, and natural filtration systems. Their function is shielding and buffering. According to the journal Nature, 2.4-4.6 percent of the world carbons emissions are captured and sequestered by living organism in the ocean. And the United Nations estimates that half of that sequestration take place in the blue-carbon wetlands[1]. When this ecosystems are destroyed or degraded there is the opposite effect, and there are release high volumes of carbon.

Cement is a source for construction and symbolizes strength in infrastructure, as well produce green gas emissions. Is the second substance more used after water. Before being reading, the cement require a decarbonization process, that is responsible for 60% of cement industry's emissions. In order to invert the values, is necessary to change the components of cement, for example the use of fly ash, that was used

in the Empire State Building and Paris Metro construction. The fly ash can reduce 5 percent of the emissions.

The way that cities are made, and built characterize as well the amount of C02 that is produce to the atmosphere. In this sense, is necessary that cities could be responsible to regenerate the environment and provide well being for his citizens. The net zero building are the constructions that will place in some cities in the world, by the year 2020 in California, and 2040 Cambridge and Massachutes.

The net zero building requires the use of natural energy source. Using the light day, encouraging the walk between floors, instead of using elevators. The walls, windows, and cellings have the maxim insulation power, in order to retain heat in the winter, and maintain coolness in the summer. Windows that can receive sun in the winter, and be shadow in the summer time. The electrochromic glasses for example, can exchange the temperature. The air condition based on natural ventilation for example termites, mounds, and below thermal mass.

The way that we cook at homes, as well influences the amount of carbon that we produce at home, and represents annually 2 to 5 percent of annual green greenhouses gas emissions worldwide. When we burn fuels during the cooking process, we are emitting carbon dioxide, methane, and black carbon. Black carbon, is the second largest driver for climate change, after carbon dioxide. In this sense improving the cook stoves technologies is a important step in emissions reduction. This news cookers will allow to reduce the production of biomass, the impact of black carbon production, and force the gases and smoke back into the stove's flame.

Actually the third of all plastics end up in ecosystems, while just 5 percent are successfully recycled, the rest are landfill or burned. If this process continues, in 2050 plastic can have more weigh than fish. Bioplastic is a replacement technology that can reduce emissions and is derived partially from biomass. Although bioplastic cannot be composted, unless separated from other plastics, and few will compost in the garden bin.

In one side there is the house hold and industrial recycling solutions including, plastic, glass, and other materials like rubber, textiles, and e-waste, and in the other side paper products and organic wastes are treated in separate waste management solutions. The increment by 65% of the recyclable waste worldwide, requires that the household could avoid 2.8 gigatons of carbon dioxide emission by 2050.The efforts in this area is to define the recycling rates for municipalities, and follow the 3Rs.In this way the waste can be managed with out warming the World.

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There is a new rethink in the industrial waste, that is change the modus operanti from take the resources needed, make them into things, discard by the product, and consign goods to waste, to a new way of thinking. In this way first is drawing on nature wisdom, circular business models look at old products, and scrap materials as valuable sources for new materials. This will allow companies send their waste for recycling, or be recyclers themselves. The recommendation from the US Materials Market Place launched in 2015, is a step to developed the enhancing the exchange of recycle and reusable goods. Companies can identify opportunities, connections with parties, and brokering transitions between others. Technology as well can be as a dynamic transformer, for innovative conversion, to increase recycle rates, and exchanging brand products with recycled ones.

The refrigeration systems that existed before 1987 on the supermarkets, and air-condition damaged the ozone layer. They had been replaced since there for system less poluent of ozone layer, they had high levels of chorofluoro carbos (CFS) and hydrochoroflurocarbons (HCFcs). The ozone Layer is essential for absorving the sun's ultraviolet radiation. The replacement retained the potential for ozone damage, and reduced the concentration gases of CFS, however the capacity to warm the atmosphere present in (HCFCs) is one thousand to nine thousand times grater than carbon dioxide. Recently in 2016 there was made a agreement to reduce the gases with (HCFCs), by an amendment to Montreal Protocol. In 2019 the HFCS refrigeration will phase out, and will start a transition for natural refrigeration such propane and ammonia. The transition will take please first in 2019 with developed countries, and after will expand to low income countries till 2024 and 2028.

Buildings are responsible, for one third of global energy use and one- fifth of global greenhouse gas emissions. When the buildings are made to be ecology friendly, they there are as well savings in energy, and less amount of gas emissions to be produce. This kind of buildings are named as retrofitting, and are made in propose to improve insulation, upgraded management systems. The new buildings Bas (building automation system) will be function in an automatically way, in order to secure efficiency and reduce energy.

Inside the buildings the concern, is to build heat pumps and air-condition that are environmental friendly and can reduce the emissions. To be more efficiently these equipments are management by

smart thermostats. Providing the right insulation inside the buildings means that the heat always move from warmer areas to cooler areas, until a temperature equilibrium is reached. In this sense the use of energy could be reduced, and correctly managed.

The municipalities have a Great challenge in the water management and avoiding water losses. When this happen is highly costly to make the Mantainence , and as well there are amounts' of carbon that are release. Saving water is keeping earth resources for the future. This systems can be made to be more resilient, with advanced sensors software that can detect leak and pressure management.

The methane in this cities correspond as well to a particular condition to manage. The gas and their components are disposable in landfills. The challenge is that instead of being kept there, could be recovered in a different source of energy, and be used.

III. RESULTS AND DISCUSSION

3.1. Perspective for Change

The energy transition is on of the biggest challenges our society have, to make the planet safe and sustainable, for life and for the natural resources. The fossils energy had a significante impact transforming, progressing, and developing, the world, however as a strong impact on natural resources, and is necessary to have a transition for a maximum capacity in renewal energy, essential to prevent degradation on life and health, associated with global warming and C02 levels.

The levels of green houses need to stabilized in the 450ppm, and then to reduce the levels as fast as we can, in order to avoid natural occurrences. Until the total replacement of fossil fuels could be placed, for renewal sources of energy, is essential to invest in carbon and high poluent gases reusement, capture and storage technology to be placed according to safe regulations.

3.2 Managing the future

The recommendations taken from above, is developing a global plan to urgently reduce the emissions and focus clearly in what the science says. Expecifically avoiding going above two 2 degrees centigrade, and collectively change the loss of natural forest and replace it.

Changing the course of global warming, is as well a social responsibility from each human being, and taking the right choices to protect the environment, biodiversity, and the natural world with out forgetting as well, the ability to adapt ourselves for the circumstances that we can not change.

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On the 28th February 2018, I visited the "Universidad National Autonoma de Mexico", in order to find, answers about the Temperature and C02 levels increment.

Have spoken with the Sociologist Jose Clemente Cueva, and responsible for the climate change program in this institution. In this program opened in 2015, is congregate the intention to reduce carbon, with 140 criteria's. Mexico has a good position in the environmental image in South America. Is the second country to have a program in climate change, and in the past in 1979 present the first proposals for the Climate Change in UN.

In his opinion the Climate Change is a recent concern, that should be started sooner, and there are issues with action that sometimes can not be addressed in practice. The investment in projects is as well depend from central decision. In his opinion the climate change is a result of a inconscient process, because in the past the resources were considered that had not end, and people were not educate for having environment conscious. The second is that the governments don't, follow and apply the jurisprudential for the environment.

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