Draft Climate Manifesto

Global warming**,** the phenomenon of increasing average air temperatures near the surface of Earth since the beginning of industrial revolution around 250 years back . It has been estimated that, at the beginning of the industrial age in the mid-18th century, carbon dioxide concentrations in the atmosphere were roughly 280 parts per million (ppm). By the middle of 2014, carbon dioxide concentrations had briefly reached 400 ppm, since Jun 2016 the CO2 concentration has reached 400 ppm. If fossil fuels continue to be burned at current rates, they are projected to reach 560 ppm by the mid-21st century—essentially, a doubling of carbon dioxide concentrations in 300 years.

Since the beginning of Industrial age, our progress was energy driven. To begin with Coal, a fossil fuel, was used to fulfil our energy demands. At that time we were not aware of the adverse effects of Green House Gasses (GHGs) like, CO2, Methane, Nitrous Oxide on our environment.250 years back, our population was much less, we had ample forest cover to absorb the GHGs . Then came crude oil , which gave us Petrol, Diesel, LPG, CNG & other fuels to drive our economy at fast pace. The rising population required larger space so the forests started dwindling. In last sixty years we have seen the economy growing at much faster rate. This required more energy, thus more fossil fuels got burned. Also large forest land was sacrificed for infrastructure development. This resulted in rise in air pollution along with less oxygen generation. As per the National Aeronautical & Space Agency ( NASA ) report the dirty energy generated today world over is equal to energy generated by exploding 400,000 Hiroshima type bombs daily for 365 days. Due to depleting forest cover 90 % of this energy is now absorbed by Ocean Waters. Remember Oceans occupy 75 % of Earth’s surface. Resulting in rise in ocean water temperatures. Rise in ocean temperatures has adversely affected our climate. Especially rise in frequency & intensity of extreme climatic events.

Climate Change. As the ocean water temperatures started rising it gave rise to Extreme Climatic Events across the world. The frequency & intensity of such events started rising. The events are

1. Shift in Monsoon
2. Rise in Temperatures
3. Droughts
4. Hail Storms
5. Hurricanes
6. Deficit Monsoon, etc

Adverse effect on Natural Resources-

1.Trees- Tree cover all over the world is depleting at faster rates. In fact, it is estimated that humans and other causes, such as wildfires and pest outbreaks, are responsible for the loss of 15.3 billion trees each year — 5 billion of those may grow back each year, so the net loss is more like 10 billion annually. The U.S. had 319 million people in 2014, but 228 billion trees. That’s 716 trees per person. Brazil had 301 billion trees (1,494 per person), Canada 318 billion (8,953 per person), and China 139 billion (102 trees per person). Among highly populous countries, India (population, 1.267 billion) had a tree population of only 35 billion, leading to just 28 trees per person. We should note that Trees not only absorb GHG like CO2, but also help reduce ambient temp of the area, help increase rainwater percolation to raise falling ground water level, provides rise in native birds & animals living on trees, help improve soil humidity, thus trees are life line for all living beings on the planet Earth. Also trees generate Oxygen required for all beings. Rampant tree cuttings for economic growth is reducing absorption of Green House Gasses like CO2 and increasing global warming thus local ambient temperatures are on rise.

2. Water-Primary source of water on our planet is Rain Water. 75 % of planet’s surface is covered by around 97 % of water, known as Ocean water. Of 3 % of balance water, only 1 % fresh water is available on the planet. Of this only 4 % is India’s share for 18 % of world population. There are three water users Agriculture sector consumes around 70 % of fresh water, Industry consumes around 22% & balance 10% is for Domestic use. Most of the surface water in India is polluted due to ingress of domestic sewage, industrial effluence, agriculture run offs & other garbage along with human bodies. Due to rapid urbanisation the rain water percolation rate in most of cities is reduced from 35 % to around 10 %. This along with deforestation is depleting ground water. Rapidly rising population is further increasing urbanisation & also more demand for clean water. Due to water shortage to meet demands of all the users stress is more on unsustainable over extraction of ground water. More than 80 % of our rural drinking water schemes are ground water based. Also 65 % of urban water demands are based on ground water. Similarly farm sector is also dependant on ground water. In the absence of effective ground water recharge & despite recharge policies ground water table is depleting rapidly. With extreme climatic events & reduced forest cover ground water table is likely to exhaust. India extracts around 25 % of groundwater, while USA & China together extract around 19 % of ground water. India cannot sustain such over extraction of groundwater. Following are the main reasons of water pollution,

### a. Urbanisation:

Rapid urbanisation in India during the recent decades has given rise to a number of environmental problems such as water supply, wastewater generation and its collection, treatment and disposal.

### b. Industries:

Most Indian rivers and other sources of fresh water are polluted by industrial wastes or effluents. All these industrial wastes are toxic to life forms that consume this water. The total wastewater generated from all major industrial sources is 83,048 MId which includes 66,700 Mid of cooling water generated from thermal power plants.

3.Air- Due to burning of fossil fuels & rampant tree cutting air is getting highly polluted, adversely affecting human health. Let us see the factors causing air pollution,

**Vehicle Emissions**

Vehicle emissions are one of the main source of fossil fuel emissions and air pollution. Pollution emitting from vehicles including trucks, jeeps, cars, trains, airplanes cause immense amount of pollution. One litre of Petrol 0r Diesel when burnt generates around 2.5 kg of CO2 along with other harmful gasses like SO2.

**Agricultural activities**

The Indian state of Punjab has two growing seasons—one from May to September and another from November to April. In November, Punjab farmers typically sow crops such as wheat and vegetables; but before they do that, farmers often set fire to fields to clear them for planting. This increases air pollution in Delhi and NCR area.  Ammonia is a very common by product from agriculture related activities and is one of the most hazardous gases in the atmosphere. Use of insecticides, pesticides and fertilizers in agricultural activities has grown quite a lot.

**Dust and Wildfires**

In India large areas of open land and construction area that have little to no vegetation, and are particularly dry due to a lack of precipitation, wind can naturally create dust storms. This particulate matter, when added to the air, can have a natural warming effect and can also be a health hazard for living creatures.
The actual forest cover of India is 19.27% of the geographic area, corresponding to 63.3 million ha.  Out of the 63 million ha of forests an area of around 3.73 million ha can be presumed to be affected by fires annually. Wild fire’s cause air pollution by releasing particulate matter into the air. These particles can become lodged in your respiratory system, causing irritation to tissues.

**Power Plants**

India is the world's second largest coal burner after China, generating 210 GW of electricity a year, mostly from coal. But it is likely to become the largest if plans to generate a further 160 GW annually are approved. Fossil fuel emissions contain the major greenhouse gases, including carbon dioxide, methane, nitrous oxide and fluorinated gases.

**Deforestation**

Deforestation affects the atmosphere in several ways. Forests act as sinks for carbon dioxide through a process called carbon sequestration.

**Waste**

Landfills are also known to generate methane, which is not only a major greenhouse gas, but also an asphyxiate and highly flammable and potentially hazardous if a landfills grow unchecked.

**Electronic waste**

About 80% of e-waste from developed countries is illegally exported to developing countries especially China, India and Pakistan because of the lower labor costs and lack of governmental regulations. Large number of people in India are involved in unscientific dismantling, crude chemical leaching of printed circuit boards, burning of wires/waste electrical and electronic components, grinding of residues, washing of metal rich residue (milled black powder).

Economic Losses Due To Climate Change- Extreme weather events are costing India $9-10 billion annually and climate change is projected to impact agricultural productivity with increasing severity from 2020 to the end of the century. India suffered a whopping USD 79.5 billion economic loss due to climate-related disasters in the last 20 years, according to a UN report which highlights the impact of extreme weather events on the global economy. Also the loss of nearly 75 billion hours of labour in 2017 due to rising temperatures, an increase of 30 billion hours since 2000.Agricultutr sector experienced loss of 60 billion hours in 2017. Industry also suffered losses in 2017. All this affects growth of economy.

Fatalities Due to Pollutions--- Air pollution accounted for 6.5 million deaths in 2015, followed by 1.8 million deaths by water pollution & 0.8 million deaths due to work place related pollution.

Effect of Climate Change on Human Health--- rising global warming is adversely affecting human health, especially children, senior citizens, pregnant women, people below poverty line, people working in the open, farmers etc. Rising temperatures, floods, droughts, air & water pollution, lack of sanitation, poor solid waste management have given rise to variety of diseases, affecting large population both in urban as well as rural areas. Lack of adequate & accessible medical facilities is also responsible rising fatalities. Lack of awareness among all the citizens in rural & urban areas is also affecting human health.

Actions Required To Be Taken By Political Parties.

General elections are due in India in next few months. Citizens expect political parties include following points in their election manifesto as a commitment,

1. Awareness Program--- from central govt to village level govt body, awareness about causes for global warming, its adverse effect on local & global climate, should be spread through print, audio, radio, TV & film media. Also awareness should be spread through schools, colleges, community forums etc. This should be treated as a National Mission to fight impending rising danger which in near future likely to pose severe danger to our survival. Such programs must be transparent as well as the related info should be available right from villages, towns to metropolitan cities. The program must include adaptation & mitigation methods to be followed by all the citizens & stake holders.
2. Reduction in Carbon Emission--- main cause for global warming is burning of fossil fuels. In India around 70 % of power is generated using coal. Similarly transport sector uses fossil fuels like Diesel, Petro, Gasses etc. This sector is growing rapidly, in Pune around 800 new vehicles are registered every day as per RTA data. Following measures are expected on priority,
3. Solar Power generation on roof tops of all the buildings. Profit making sectors like Industry, commercial houses, Hospitality sector must meet majority of their energy demand using solar power on time bound program, say by 2024. This will help reduce demand on Power Plants considerably, thus reducing carbon emission. Incentives must be provided for housing societies / houses to use solar power to meet their energy needs.
4. Switching over from existing vehicles to e-vehicles on time bound program.
5. Aggressive tree plantation. Awareness program must be launched to explain need & benefits of trees to citizens. Every person requires 740 Kg of Oxygen per year. One fully grown tree generates 100 Kg of Oxygen per year. Thus every human being requires 8 trees for healthy year. Today most of cities in India have less than one tree per person , this increases air pollution as less trees means less absorption of GHGs especially CO2.
6. Waste Management--- Barely 35,600 a metric tonne of garbage of 1.43 lakh metric tonnes of garbage generated daily is only treated daily, rest untreated garbage is dumped in to open. There are about 84000 municipal bodies spread over 35 states in India. Three quarters of the municipal bodies collect 100 % door to door garbage daily. Maharashtra municipal bodies generate daily 22,570 metric tonne of garbage, which is maximum in the country.
7. Energy Audit--- Every infrastructure including houses, housing societies, commercial organisations, industry, schools & colleges, hospitality industry etc must carry out energy audit & make efforts to reduce energy consumption, switching over to LED bulbs, use of energy saving devices etc. Such initiatives alone cumulatively save huge amount of energy thus help reduce emission. In our housing society in Pune by adopting to simple energy saving methods we are saving daily 53 Kwh of energy, annually saving around 19,000 Kwh of energy . It does make difference.
8. Public Transport---Effective Public transport plays vital role in reducing number of private vehicles on the roads. Most of our cities have very pathetic public transport. E technology based public transport will further reduce carbon emission.
9. Tree Plantations— Trees play vital role in maintaining ecosystem. In most of the cities & villages trees are cut rampantly in the name of development. Tree plantations on World Environment Day every 5 Jun has just become ritual. millions of trees are planted every year , however survival rate is very poor. We all know that only trees can help reduce air pollution, if available in adequate numbers. They also generate oxygen for our survival. Minimum 8 trees per citizen should be grown everywhere with all stake holders’ participation.

All political parties should include these points in their party manifesto. World is running out of time. India is a developing nation & we must take necessary steps on war footing to fight this danger.