# Chapter 1

# Early Attempts

If you were born within the span of the last 40 years, chances are that you must have heard terms like pollution, environment conservation, ozone depletion and climate change for the Nth time now. However, the more the mass media badgers the public with these terms and the experts rant out jargon, the more people get confused about the basic issue.

To begin with, all the above terms are inter-related. One has led to the other and reigning in one will help contain the rest.

We in the 21st century are facing a problem of gigantic proportions. Many scientific studies and sustained data from reputed scientific institutes point towards one reality that "the global climate is changing and can have far reaching and catastrophic impact on our lifestyles". The crux of the matter is the atmospheric mix of gases, chiefly Nitrogen (78.08%), Oxygen (20.95%) and Carbondioxide (CO2) and water vapour (one percent), is undergoing a change. The main culprit is carbondioxide. Though miniscule in its presence as compared to oxygen and nitrogen, it along with water vapour and methane has the ability to soak up the sun's rays that are reflected back from the Earth. CO2 has shown a steady increase since the dawn of Industrial Age. As its percentage rises, the atmosphere's ability to trap more sun rays increases which leads to a rise in temperature.

However, it is not that the human race has suddenly woken up to this problem. Ever since the 19th century, scientists and environmentally conscious people were trying to figure out what makes our Earth habitable or inhabitable.

History suggests there were always a few good men and women who were looking far ahead in time and were ready to stick their neck out to tell the world — things weren't ok.

Let's begin with the greenhouse effect. A greenhouse is a contraption that is used in a plant nursery to cover young plants in pots by an almost dark heavy cover made of cloth or polythene. This artificially raises the temperature within the covered area and helps the plant grow quickly or the fruits to ripen faster than their natural cycle. This was used as an analogy by the French physicist Joseph Fourier in 1824 for the Earth's atmosphere. He broke the news that like a greenhouse, the atmosphere too absorbs heat from the sun's rays falling on the Earth and keeps the surface temperature up.

Working on his lead, Irish physicist John Tyndall further sharpened human understanding of the atmosphere by stating that carbon-dioxide (CO2) and water vapour were two chief components that made the Earth warm.

Thirty seven years after this discovery came the first warning signals. In 1896, a Swedish chemist named Svante Arrhenius became the first person to claim that CO2 emissions since the dawn of the Industrial Age enhanced the greenhouse effect of the atmosphere. This was the first time someone had directly put the blame on humans for acting in a manner that would jeopardise atmospheric processes in the future.

Radical and threatening though the disclosure may have been, it was far ahead of its time and the warning went unheeded in the age of expanding industrial base and new found mass materialism.

The twentieth century began with a bang, the industrial age kept conquering new frontiers and the coal-petroleum based technology ruled the roost. But just before the Second World War broke out, a British engineer, Guy Callendar (1938), suggested for the first time that fossil fuel (coal and petroleum) burning was responsible for the increased temperature in the earth's atmosphere. However, his suggestions and theory were lost in the din of the Second World War. The world fought a vicious battle for survival and supremacy for six years before peace returned in 1945.

Yet during the time of global conflict, people in every community had started questioning the merit of an uncontrolled energy guzzling lifestyle. The United States of America was already witnessing a muted but determined resistance against the rampant use of aerial spray of DDT (a pest and mosquito killing chemical).

**Peace ushers a new dawn**

Concern for the environment that had taken a back seat in the first half of the 20th century returned to centre stage once the world got



back to business as usual. Scientists started picking up the pieces and resumed their research to further confirm and consolidate their assertions about the changing pattern of global climate and human contribution in the entire process.

One such scientist was an American named Charles Keeling. While working in a lab at Mauna Loa in Hawaii, he made measurements about the presence of atmospheric CO2. In 1958 he found that the level of atmospheric CO2 (That he calculated in parts per million (ppm) of atmospheric molecules) in the pre Industrial Era was 280. However, by 1955 it had risen to 310 ppm and the graph he made (Keeling Curve) gave an indication about a sustained rise in the CO2 levels every decade. His curve has since become a crucial tracker in the measurement of CO2 concentration in the atmosphere. According to the curve, by 2015 the CO2 concentration in the atmosphere will reach a staggering 380 ppm, enough to change the world climate patterns as we know them today.

While Keeling was busy with his study, there was another scientist that had locked horns with the powerful pesticide industry in the US. Rachel Carson's book 'Silent Spring', published in 1962, talked about the ill effects of pesticides on the environment and especially on birds. This led to a public outcry and a local environment movement was born. After 10 years of sustained campaigning, DDT (a pesticide spray) was finally banned in the US.

Through the 1960s, the world in general and the developed nations in particular saw individual, collective and governmental actions to study the impact of humans on the environment. The US Congress funded a two year study in 1960 to find out the impact of cars on the environment. It also passed the Clean Water Bill. Close on the heels of these two developments came the formation of World Wide Fund for Nature. While these efforts to conserve and understand the environment were on, the world was shocked to witness many disasters too. Most notorious was the London smog of 1961 that claimed 750 lives. Environmental accidents and a determined effort to study the human role in them led to our enhanced understanding of issues that the society was dealing with vis-à-vis nature.

As the 1970s began the collective global understanding of environmental pollution reached a critical mass and the United

Nations responded by organising the first global meet on Environment in Sweden.

The Stockholm Summit was attended by 113 nations. While it had its share of bickering among brother nations, it was able to set lofty though hazy ideals for an environment friendly world. The Summit concluded —

> The vast benefits which the new technological order had produced were undeniable, but man's activities have created serious imbalances. Not only each society but the world as a whole must achieve a better balance among the major elements that determined the level and quality of life it could provide for its members-population and its distribution, available resources and their exploitation, and pressures placed on the life systems that sustained it...

While making these observations the Summit officials also expressed the opinion that the developing world's need to feed its population and the right to economic growth could not be undermined. However, it was also observed that the developing countries were in a uniquely tight position vis a vis development and conservation. They have to embark on an aggressive economic development agenda to bring their poor out of crushing poverty and yet be concerned about the long term environment goals.

The Summit draft stated —

> ...The concept of "no growth" could not be a viable policy for any society, but it was necessary to rethink the traditional concepts of the basic purposes of growth..... Developing countries could ill-afford to put uncertain future needs ahead of their immediate needs for food, shelter, work, education and health care. The problem was how to reconcile those legitimate immediate requirements with the interests of generations yet unborn. Environmental factors must be an integral part of development strategy; one of the most encouraging outcomes of the preparatory process had been the emergence of a new synthesis between development and environment....
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> The Stockholm Summit of 1972 set the trend. This meet was the first of its kind and would serve as a template for future talks and would also bring out the same issues and acrimony, mutual mistrust between the rich and the poor, mighty and the meek, again and again.

# Chapter 2

# Intergovernmental Panel on Climate Change

## Creation of the IPCC

"Anthropogenic climate change will persist for many centuries." With these words the first report of the Intergovernmental Panel on Climate Change (IPCC) made its mark on the global intellectual landscape. A product of two UN bodies - the World Meteorological Organisation (WMO) and the United Nations Environment Programme (UNEP) - the IPCC was constituted to assess the scientific, technical and socioeconomic information relevant for the understanding of the risk of human-induced climate change.

Set up in 1988, the first task assigned to the new organisation was to prepare a report that would be based on available scientific information to study all aspects relevant to climate change and its impacts and to formulate realistic response strategies.

As the two parent bodies were already working on the ground level collecting data and conducting research, the new body was given the task of collating the material and getting it peer reviewed. It also involved national governments for the constant review of the scientific and socio-economic studies that appeared from world wide sources.

The first report that appeared in 1990 named First Assessment Report (FAR) set the tone for further work conducted by the new UN body. In time the IPCC was to emerge as the first name and the last word in climate change reports. The 1990 report also served as the basis on which governments from around the world agreed to convene the United Nations Framework Convention on Climate Change.