

Tribal Communities and Adaptation to Climate Change

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“No one can step into the same river twice.” so said Heraclitus, the famous Greek philosopher, more than four centuries before Jesus Christ was born to redeem the world. Even this day, it remains an indisputable fact - a reality. Heraclitus was proclaiming to the whole world, without giving room to ambiguity that everything in the Universe is in Flux. It means that everything is subjected to change. Perhaps, change alone will be an exception.

When everything is susceptible to change, when nothing in the universe is immune from change, when nothing is insulated against change, how can we expect the climate alone not to change at all? Millions of light years away stars undergo change and so near within us the cells undergo change. We all know these facts. However, blind to these facts, the so called civilized white man, the yellow man, the black man and the wheatish coloured man is losing his sleep over the manmade climate change.

Climate change is not at all a new phenomenon. It is millions of years old. Scientists who have taken the pain to examine and study fossils from 3.3 to 3 million years ago, known as the mid-Pliocene warm period has brought this fact to the daylight not so long ago. The research was conducted by the Pliocene Research, Interpretation and Synoptic Mapping (PRISM) group, led by the U.S. Geological Survey. The group has found that the mid-Pliocene period experienced the most extreme warming over the past 3.3 million years. At that period the global average temperatures were 2.5°C (4.5°F) greater than today. It is well within the range projected for the 21st century by the Intergovernmental Panel on Climate Change. The group warned that since CO₂ levels during the mid-Pliocene were only slightly higher than today's levels a slight increase in our current CO₂ level could have a large impact on temperature change. However, we have room for consolation that we were not responsible for the extreme warming in the mid-Pliocene period.

When we retrace our footsteps to the time when agriculture started 11000 years ago, the scenario undergoes a sea change. The responsibility of global warming and subsequent climatic change fall squarely on our ancestors' shoulders. Some of the scientists who have studied the history of climate change believe agricultural activities which paved way for civilization launched climate change. According to them, long before industrial revolution and long before intensive farming world over the pioneers of agriculture unleashed greenhouse gases that interfered with the climate.

Slash and burn cultivation in Europe and elsewhere let the carbon stored in the forests into the atmosphere in the form of carbon dioxide while millennia later, in eastern Asia converting vast grasslands for paddy production released methane that interfered with the climate in a considerable way. In support of this the scientists point out that the ice-core record shows that the level of carbon dioxide in the atmosphere increased about 7000 years ago and methane level began to increase about 5000 years ago. Archaeological and anthropological data show that early farmers used ten times as much land per person as modern farmers. It underlines the fact that humanity has been interfering with the climate since the beginning of civilization.

If humanity has been interfering with the climate for a long time and the intensity of climate change is felt over the decades, why humanity is so concerned and worried about it now in the 21st century? We need not to wrack our brains to find the reason. The reason is clear before our eyes as bright as the daylight. We are standing with one foot over the abyss-the abyss of self annihilation. We are so near to the dangerous point of no-return! Unless we do something now we will not be here to help ourselves, let alone others – our fellow travelers of the blue planet: the birds and beasts, the flora and fauna that sustained us so far.

It is the high carbon life style of the developed nations that has brought us to this situation. Carbon-based gases are the principal cause of the greenhouse effect, which leads to climate change. The excessive release of these gases, like carbon dioxide and methane, comes from human activities: the combustion of fossil fuels in industry and transportation, and emissions from livestock production and deforestation. Blinded by the life style of the developed nations, developing nations like India, China and Brazil, to name a few, followed suit and contributed their share to global warming. We cannot blame the western countries alone forgetting the role of developing countries like India in dragging the earth to get overheated. The unsustainable use of fossil fuels, deforestation so on and so forth have contributed considerably to build up greenhouses gases in the atmosphere. It is a fact which cannot be brushed under the carpet.

Even though it is the high carbon life style of the developed nations and the rich people of the developing nations that have created this dangerous situation, heavy price is paid by the low carbon people like the tribals and the poor. For the sins of the rich, the poor are punished!

This is not to say that the consequence of global warming and climate change is not felt by the developed nations at all. Natural disasters like tsunami, typhoon and flood make no distinction between the rich and poor, the developed nations and developing nations. My argument is that the tribals and the poor suffer more due to global warming and climate change.

Climate change is now an accepted fact as far as the modern high carbon lifestyle man is concerned. Not a day passes without a conference, seminar or workshop being conducted on the impact of climate change in some metropolitan city or town in the world. Thousands of tones of newsprints are used, destroying entire forests, to discuss about climate change and disseminate information about it. Climate change is now on everybody's lips. The clever ones are wracking their brains to make profit out of this catastrophe. They are chalking out plans to develop market for carbon and sell new technologies.

When climate change seems to be a new phenomenon to high carbon people, on the other hand to the low carbon people – the indigenous people – the tribals- the Adivasis –the forest people – it is not at all a new phenomenon. During their nomadic life in the past their ancestors have confronted the extremes of climate change. From excessive rainfall that flooded the entire area to rock-cracking drought. From extreme cold to extreme heat. Experiencing the extremes of climate change the tribals did not beat their breasts in despair and helplessness nor did they organise conferences and summits to tackle the issue. On the other hand, over millennia, the tribal people have developed a large arsenal of practices to survive and adapt to an increasingly dangerous climate.

No one can deny the fact tribal people depend on natural resources for their livelihood and at the same time they are among the world's most marginalized, impoverished and vulnerable

people. The saddest part is that it is the tribal people who have to bear the brunt of the catastrophe of climate change.

Since tribal people depend on natural resource base for their survival, that is to a certain extent unstable and unpredictable, they have the natural tendency to adapt to changing environment and changing climate. Tribal people keenly observe and react to climate change in a positive manner making use of their traditional knowledge and their ancestors' rich experiences. They use diversified adaptation strategies to survive in the changing climates. Let us take the example of tribal food security. Let us, as an example, examine how the tribal people of Wayanad, one of the backward districts in Kerala, ensure their food security in the time of climate change. The district experiences in some years heavy rain and flooding and in some years severe drought.

Drought or flood, in order to ensure food security, over the decades the tribal people have developed certain agricultural practices. They have developed varieties of paddy seeds that can withstand drought as well as flooding. They have developed paddy seeds that can produce rice plants which can withstand flooding for more than two weeks. They have also developed paddy seeds which can be sown and raised when there is no rain. They have paddy seeds that suit every agro-climatic condition. They also have developed farming practices to produce rice in any climatic conditions. To put it in a nutshell, they interpret climate change positively and develop strategies and implement it. All over the world tribal people survive drought and flooding, marrow freezing cold and searing heat, drawing lessons from traditional knowledge and the rich experiences of their ancestors. To the tribal people climate is a changing phenomenon. It will go on changing whether man like it or not. In order to survive in the changing climatic conditions man has to develop diversified adaptation strategies specifically suitable to every land and region. That is what the tribal people preach and practice.