

# Global warming: Awareness for mitigation

Proposals for alternative sources of sustainable clean renewable energy including solar, wind, nuclear and bio-mass are in consideration. Wealthy nations' consumer based economy has driven their citizens to much luxury and endless consumption.

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**T**HE impact of a changing climate on society and the environment should be a high priority issue for world leaders to deal with. In 1975, US scientist Wallace Broecker introduced for the first time the term "Global Warming" to the public arena in the title of a scientific paper. The global warming caused by human activities is a grave global concern now.

The purpose of this writing is to build awareness among mass people including government, private sector operators and civil society to give an update of the recent understanding of climate change by human activities. This article is largely based on the structural and scientific determination set out by the SYNTHESIS REPORT: CLIMATE CHANGE/Global risks, Challenges & Decisions/COPENHAGEN 2009 conducted by International Alliance of Research Universities

**Climatic trends:** Global mean surface temperature rise, sea level rise, global ocean temperature rise, arctic sea ice melting, ocean acidification and extreme climatic events are the outcomes of human activities, among other factors. The IPCC concluded that there is over 90% probability that this global warming is primarily caused by human activities, the most important of these being the emission of greenhouse gases and the clearing of natural vegetation.

The climate is largely controlled by the flow of heat from sun entering and leaving the planet's atmosphere and the storage of heat in the various compartments of the Earth's system

ocean, land, atmosphere, snow/ice. The largest amount of heat stored at the Earth's surface is found in the ocean, which changes ocean temperature slowly but largely.

Increased melting of the large polar ice sheets contributes to the observed rise in sea level and the regional temperature. The new observations of the increasing loss of mass from glaciers, ice caps and the Greenland and Antarctic ice cover lead to predictions of global mean sea level rises of 1m (+0.5m), which is the ultimate threat for the existence of some coastal natives namely Bangladesh, Maldives etc.

This decreasing ice coverage is important for climate change on a larger scale as ice and snow reflect most of the radiation from the sun back into the atmosphere, while sea water absorbs most of the radiation reaching it from the sun and thus posing a potential threat to the marine ecosystem. For an ice free ocean absorbs more heat than an ice covered ocean, the loss of Arctic sea ice creates a "feedback" in the climate system that increases warming. Greenhouse gases, such as water vapour, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) in the atmosphere absorb the heat leaving the Earth's surface, thus retaining more heat near the Earth's surface.

**Social disruption:** Ecosystems are highly vulnerable of the impact dangerous climate change. Although there is not yet a global consensus on what level of climate change might be defined to be "dangerous", considerable scientific outcomes have developed for containing the rise in global temperature to a maximum of 2

degrees C above pre industrial levels, often referred as "the 2 degrees C guardrail". However recent scientific research alerts that even with temperature rise less than 2 degrees C, impacts can be significant and ecosystems rapidly decline with an increasing risk of social disruption through health impacts, water shortages and food insecurity.

The increasing number of extreme

across the universe must preserve existing forests and take initiatives to increase projection based green surface for future survival. Particularly increase of forest can play multiple roles to minimise carbon levels, increase oxygen for human absorption and specially a major role in coastal wind circulation and maintaining the natural balance.

**Equity dimensions:** Tackling climate

is inevitably required for stability of earth's ecosystem. Global leaders must realize the utmost importance of key preserving natural wealth.

**Meeting the challenge:** Linking climate change with broader sustainable consumption and production concerns is important. The scientific evidence find combustion of fossil fuels used in production and transportation process is influencing the climate. It is identified as a major risk for the well-being and continued development of human society. Proposals for alternative sources of sustainable clean renewable energy including solar, wind, nuclear and biomass are in consideration. Wealthy nations' consumer based economy has driven their citizens to much luxury and endless consumption. However as consumers, we must give priority to eco-kind products and avoid irresponsible disposals to ensure safety of the Earth's Eco system.

**Endangering water resources:** A recent study found (Amritsar/India) the region's ground water had shrunk by 26 cubic miles in six years, enough to fill Lake Mead, the largest man made reservoir in the US. Californian used about 9% of all water extracted from lakes, rivers and underground aquifers. But as the drought and environmental battles persist in California, some of the state's most productive farmers are receiving as little as 10% of their normal supplies, forcing growers to leave hundreds of thousands of acres unplanted and leave thousands of farmers workless.

However, Susan Hutson, an USGS hydrologist in Memphis states in a report released by the US Geological Survey (The Associated Press: Tuscan Arizona| 10.30.2009) "Even during a time of population growth & economic growth, we are all using less water. It's exciting to see we have responded to this crisis by really seeking a solution." So we must consider various measures regarding water resources management and its use as this natural resource is already getting short and polluted across the globe.

**Signs of hope:** The authorities in

Canada are building up one of the world's best natural defences against global warming, by banning logging, mining and oil drilling in an area twice the size of California. Canada is ensuring its boreal forests continue to soak up carbon. (Soaks up to 22% of the carbon stored on earth's land surface/Suzanne Goldenberg, US environmental correspondent, guardian.co.uk, 29 October)

Medina will be the first Islamic city to go green, the Grand Mufti of Egypt has announced, as part of a seven year plan to make the religion more environmentally friendly. Sheikh Ali Gomaa said it was a "religious duty" to go green. "It is a religious duty to safeguard our environment and advocate the importance of preserving it," he said. "Pollution and global warming pose an even greater threat than war and the fight to preserve the environment could be the most positive way of bringing humanity together. Environment-related issues ought to be a significant component of educational curricula. It is the duty of all religious scholars to acquaint themselves with the environmental crisis we are facing." (Louise Gray, Environment Correspondent 03 Nov 2009 Telegraph.co.uk)

**Nuclear energy, radio active waste and geopolitics:** Recent trends of advanced economic nations across the globe show they are turning their energy sector towards nuclear plants, with a projection based view to reducing dependency upon fossil fuel in the near future. But the conflicting interests of super powers to restrain nations such as Iran from linking weapons grade centrifuges to developing renewable fuel is really critical for the future of the alternative clean energy. On the other hand, radioactive waste management of nuclear plants is another serious concern for the environment. Ways to overcome such problems must now be forms for our own survival.

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weather events, such as heat waves, floods, and storms is leading to a growing toll of deaths and injuries from climate related natural disasters. The nexus between climate change, human health and water systems is particularly strong. For example, droughts and drying are leading to social instability, food insecurity and long term health problems in some regions. Climate change is already resulting in an increase in the frequency, intensity and duration of floods, droughts and heatwaves.

**Long term strategy:** Adoption of policies that promote energy efficiency and low carbon technologies are central to effective mitigation. All the nations

change should be seen as integral to the broader goals of enhancing socioeconomic development and equity throughout the world. We must stop blame gaming and increase conjoined efforts to build mutual respect towards global natural stability. Our immediate initiatives for mitigating the ongoing vulnerability of the ecosystems and checking from further damage is of immense importance.

**Inaction is inexcusable:** Social transformation requires decarbonised economies, repair of ecosystems and revitalisation of ecosystem service. We are decreasing natural wealth across the globe to increase man-made wealth. But it is natural wealth which



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