Climate Change –

Don't Just Stand There: Get Wristed

***Dr Madhav Mehra**

"Climate change poses the largest single threat to humanity and its ecosystems.... Our addiction to oil is creating an ecological disaster of gigantic proportions", says Dr Madhav Mehra. He says time for rhetoric is over and suggests an 11 point programme called PROACTIVATE to regenerate environment.

Climate change poses the largest single threat to humanity and its ecosystems. While addressing the 6th International Conference on Corporate Governance in London back in May 2004. Ola Ullsten former Prime Minister of Sweeden said "Climate change is a bigger threat to the World than terrorism". Yet despite further evidence of our planet approaching the "tipping point" little progress has been made in tackling its causes.

There is a near 100 percent consensus amongst scientists that man-made effects on climate are real. Dissenters are losing credibility in the face of overwhelming evidence. Even a detractor like the President George Bush has admitted the hazards of US "addiction to oil". This addiction is creating a global warming disaster of gigantic proportion. Scientists from the Scripps Institution of Oceanography, in California, have been working several years with the Lawrence Livermore National Laboratory to analyse the effects of global warming on the oceans, using computer modeling; and millions of temperature and salinity measurements were taken at different depths over five decades. Previous studies into human activities and global warming had looked for evidence in the atmosphere – but according to project leader Tim Barnett that is the worse place to look. Ninety Percent of the energy from global warming goes into the oceans. The evidence is startling.

More than 20,000 cubic kilometers of freshwater have been added to the Northern Ocean over the past 40 years because the Arctic Greenland Ice sheets are melting. The annual melt season has gone up. The resulting change threatens to disturb ocean currents such as the Gulf Stream, which transfer heat from the tropics towards the Polar Regions. If that happened winter temperatures in Europe would fall by several degrees.

Using several models that project habitat changes, migration capabilities of various species, and related extinctions in 25 "hotspots", scientists predict that a quarter of the world's plant and vertebrate animal species would face extinction by including 450 million undernourished people, production losses due to climate change may drastically increase the number of undernourished people, severely hindering progress in combating poverty and food insecurity."

What precisely is the greenhouse effect? Human activity creates greenhouse gases which alter the climate. The three most significant greenhouse gases are water vapour, carbon dioxide and methane. These greenhouse gases are naturally present in the air. Without them we would freeze. But the more concentrated they are, the more we heat up the planet.

Pumping greenhouse gases into the atmosphere is like putting an extra blanket over the Earth. We are starting to heat up. And there are other changes. Higher temperatures are causing glaciers to melt and raise water levels of the oceans. Hotter atmosphere is more volatile, so that it is able to generate stronger storms and other extreme weather events.

Since 1800, the atmospheric concentration of carbon dioxide has risen from 270 to 380 parts per million - higher than at any time for 20 million years. Every tonne of carbon dioxide we add to the atmosphere increases the concentration, as the gas typically remains there for a century or more before being absorbed by the ocean or land vegetation. The main cause of the release of carbon dioxide is the destruction of forests and burning of fossil fuels like coal and oil.

Halting climate change will not be easy. It will require finding ways to cut pollution from fossil fuels to a fraction of its current size without affecting economic development. Good news is we have the technology and the countries who are the worst polluters are all rich and industrialized. What is lacking is the will.

A bizarre irony lurks behind the environment debate. It is not so much about protecting ecosystem but pandering to ego systems. After George Bush has rejected the Kyoto protocol, a new breed of authors has emerged whose basic task is to berate environmentalists. The likes of Bjorn Lomborg a statistician at the University of Aarhus in Denmark who has come out with a book "The Sceptical Environmentalist" eulogise accumulation of trash. As an economist of substance he makes an astonishingly ridiculous statement: "even if America's trash output continues to rise as it has done in the past, and even if the American population doubles by 2100, all the rubbish America produces through the entire 21st century will still take up only the area of a square, each of whose sides measures 28 km (18 miles). That is just one-12,000th of the area of the entire United States".

Lomborg is making the same mistake as the environmentalists whom he is lambasting. When dealing with the environment we cannot simply fast forward our projections in a linear fashion. The whole domain of environment is highly complex. Seemingly contradictory trends in the environment and society are not mutually exclusive. Environment can be degraded and standards can go up. The fact that humanity has made astonishing progress or the average life spans have increased phenomenally and the developed world of today is enjoying highest standards of living does not render the forecast of the environmentalists wrong. Both can be right. The ability to accelerate a car which is low on fuel does not prove that the tank is full. Each one of us is focusing on one piece of a very complex system. Each is seeing its piece correctly like the proverbial blind men touching the elephant. None is able to perceive the whole. Solution for a complex problem like environment cannot be found in a piece meal approach. Environmental problem cannot be resolved without understanding their interdependence and interconnectedness.

The tragedy is we accept environmental pollution as the inevitable consequence of growth. We do not realize that environment can be saved and earth's climate protected not at cost but profit. Our markets are terribly flawed as they do not tell correct prices. How is it that our pricing system tells us it is cheaper to destroy the earth than to conserve it? We have developed an economic system which is contrary to nature's biological processes. It is based primarily on extraction, depletion, waste generation and disposal and confuses capital liquidation with income. Is it normal to have an economic system that discounts the future and sells off the past?.

Wasting scarce natural resources to achieve immediate profits does not lead to value creation and wasting environment to achieve economic growth is neither economic nor growth.

It is admitted that business does not believe in altruism. Milton Friedman is right when he says the business of the business is to do business and the sole social responsibility of a company is to maximise profits for the shareholders. The fact is that with the value migration, it is the intangibles likes brand, reputation that have become wealth creators. Social good has become a competitive differentiator and a powerful vehicle to maximise shareholder value. Market capitalisation today is being increasingly determined by the public perception of corporate responsibility. Anita Roddick is purely a businesswoman who did not set up Body Shop to feed the world's poor or to upgrade the environment. She was early enough to be wise to piggy back her business in the environmental mode by coming out with the slogan: "we do not test our products on the animals". It paid rich dividends in making her the darling of millions of teenagers.

The ethical buying pressure of younger generation has turned the tables in favour of companies and products that protect environment and conserve natural resources. These consumers do not want animals to be killed indiscriminately for the purpose of satisfaction of a section of human beings or desecrate environment mindlessly. We need to tell companies today that there is money to be made in the protection of the environment. Environment is not something, which is a threat. It is an opportunity. Indeed as I said at the first Environmental conference in 1999. "Environment provides the biggest business opportunity of the 21st Century". If your company is not making money today you have to ask what can you do that can improve the environment. That in turn will also improve the health of your company as has been established by various studies worldwide.

Financial capital, as we understand today forms only a small part of the total world's capital. Far more significant is the intellectual capital, social capital, cultural capital and natural capital. For globalisation to succeed prices must tell the economic truth. Socialism collapsed because it concealed the economic truth. Capitalism will collapse if it conceals the ecological truth. It has been estimated that the value of biological services flowing from natural capital is around $36 trillion annually. Capitalising it on the basis of current return of capital gives a capitalised monetary value of world's natural capital at about $500 trillion. Compared to this, the world's gross product is merely $39 trillions.

Our environmental problems such as global warming stem from the fact that we do not have any monetary value associated with natural capital. We live in a strange world that has price tag on everything we can live without. But it has no price on things we cannot live without. There is no price tag on oxygen, rivers, green meadows, snow-peaked mountains, forests, grasslands, wetlands, trees, estuaries, oceans, coral reefs, gorges, rain forests and all the things that really matter.

We therefore propose an eleven point action plan which will combat climate change and regenerate environment. **These eleven points stem from the word PROACTIVATE.**

The first commandment of this action is **Price all natural capital**. Assigning monetary value to natural capital is however a complex & imprecise exercise. Nonetheless work has to begin. Paul Hawken in his book "Natural Captalism" quotes 'several assessments made of the biological services flowing directly from natural wealth. For instance in 1991-93, the scientists operating the Biosphere 2 experiment in Arizona (USA) discovered that even the investment of $200 million on it was inadequate to maintain life supporting levels of Oxygen for eight people living inside. The biosphere of our planet performs this task daily at no charge for 6 billion people.

Humans are also part of natural capital. The World Bank's 1995 wealth index found the sum total of value of human capital to be three times greater than all the financial & manufactured capital reflected on global balance sheets. Proper market system requires true costs to be calculated for use of natural and human capital. Responsible business decisions cannot be taken without accounting for the use of earth's living systems. We have to change our accounting system and start pricing the natural capital as a first step. Otherwise we are going to waste scarce natural resources for ever. Wasting environment to achieve economic growth is neither economic nor growth. Socialism collapsed because it did not allow the prices to tell the economic truth. Capitalism will collapse if it did not reveal the ecological truth.

Once we are conscious of the cost of the natural capital we will be tempted to try many savings on our own on a day today basis such as:-

- Turn the lights off when we leave a room.
- Replace incandescent bulbs with compact fluorescent lamps.
- Unplug stereos, radios, TVs, VCRs, and clocks while going on holidays
- Turn off the video game machines and computers before we leave the house.

- Turn the thermostat down by a degree or two.
- Buy recycled products which use less energy and resources to produce.
- Drive the car to achieve maximum fuel efficiency.
- Switch to eco-friendly vehicle
- Go for organic food and encourage organic farming.

The second commandment is about Radically increasing the productivity of natural resources especially efficiency of the energy usage. We should no longer be thinking in-terms productivity of humans. Technology shift has already taken care of it. It is the natural environment that is becoming scarcer. We should thin in terms wringing hundred times more benefit from the same energy inputs. We should think how we can leapfrog existing technologies and radically increase usage of natural resources instead of improving them incrementally. Using Nicholas Negro Ponte's expression "incrementalism is our worst enemy". Innovation in fuel technology can bring rich dividends but will be resisted by incumbents. One only has to refer to Jim Utterback, an MIT Professor, whose graphic account of pressures on electric companies brought by gas lighting companies in the 1880s, in his book "Mastering the Dynamics and Innovation" helps you understand how hard it is to resist vested interest. President Bush's approach to Kyoto and Lomborg's book is a classic example of the pressures of the fossil fuel lobby.

O in PROACTIVATE is for opting for minimalist life styles. Americans today use 80 tonnes of natural material per person per year. India uses only 6 tonnes per person per year. If 1000 million Indians start copying the western consumerism and start using the same 80 tonnes of natural capital there will be an ecological disaster of unthinkable proportions. Minimalist lifestyle are also becoming trendy and fashionable. 80% of the world population cannot fulfill its basic needs. Minimalist life style while saving environment ensures there is enough for everyone.

A is for adoption of zero waste and closed loop systems. Notwithstanding Lomborg waste has become one of the biggest problems of our times. Here is how Paul Hawken describes the wasteful economy of US in his book Natural Capitalism:

"Of the $9 trillion spent every year in the United States, at least $2 trillion annually is wasted. What is meant by "waste" in this context? Simply stated, it represents money spent where the buyer gets no value. An example of waste familiar to everyone is sitting in a traffic jam on a congested freeway.

Highway accidents cost society more than $150 billion per year, including health care costs, lost productivity, lost tax revenue, property damage, and police, judicial, and social services costs. According to the World Resources Institute, highway congestion costs $100 billion per year in lost productivity; that figure does not include gasoline, increased accidents, and maintenance costs.

Nearly $200 billion a year in energy costs is wasted because we do not employ the same efficiency practices as Japan in businesses, homes, and transportation.

In health care, $65 billion is spent annually on nonessential or even fraudulent tests and procedures (including 420,000 unneeded caesareans). By some estimates, $250 billion of inflated and unnecessary medical overhead is generated by the current insurance system. We spend $50 billion a year in health costs because of our dietary choices, and as much as $100 billion on costs related to the effects of polluted air. We spend $69 billion on obesity, $274 billion on heart disease and strokes, and $52 billion substance abuse. Health-care budgets are being increasingly burdened by such "old" diseases as staphylococcus and tuberculosis, now appearing in new drug-resistant forms thanks to shortcuts taken to save money in public health, prison, homeless shelters, and medical treatment.

Legal, accounting audit, bookkeeping, and record keeping expenditures that are required to comply with an unnecessarily complex and unenforceable tax code cost citizens at least $ 250 billion a year. What Americans fail to pay the IRS adds up to another $150 billion.

We pay criminals $40 billion a year for illegal drugs. Crime costs $450 billion a year. Another $300 billion is spent on law suits (how much of that amount is necessary can be gauged by the fact that the United States has 70 percent of the world's lawyers). Yet there is no waste in nature We need to learn from nature. I live on the edge of one of world's most beautiful gardens, Regents' Park. You never find any waste. One never sees a dead bird. It has a beautiful lake with thousands of swans, ducks and geese. It is always clean. How does it deal with the waste of thousands of birds? Nature works in a closed loop system. Why with all our technology we cannot do so? Today's businesses have become fiercely competitive. The margins are thinning. Turning waste to wealth is a great opportunity for wealth creation".

C is for capturing carbon dioxide from the air and soaking it up by planting forests. With new technology carbon dioxide can also by captured from concentrated waste streams like emissions from power plants and buried out of harm's way in geological formations.

T is for turning to renweables and decarbonisation. To combat climate change we have to reduce the rate of usage of fossil fuels, the source of 84% of America's and 75% of the world's energy. Fossil fuel powered automobiles are unmitigated ecological disasters. This means increasing investments, and popularising use of renewables such as solar technology, fuel cells and wind power etc. Solar cells have started becoming competitive for household electricity generation in villages unconnected by electric grids. Wind electricity generation promises to become the foundation of a new eco-economy. Advances in wind turbine technology have lowered the cost of wind power. Wind electricity can be harnessed to electrolyte water to produce hydrogen, the fuel for highly efficient fuel engines.

I is for investing in green technologies and green stock. This is simple commonsense because this is truly a high growth area. Renewables not only help "offset the risk of climate change" but also offer "greater growth projection than the fossil fuel. Investors are already clamping down on emitters of greenhouse gases and going for green-stock for long term security Group Planning at Royal Dutch/Shell considers it "highly probable" that over the next half a century, renewables could become so competitive that they will provide half the world's energy requirement.

V is vigorous pursuit of market mechanism for punishing. Eight Nobel Laureates and some twenty seven hundred fellow economists have concluded: Market oriented policies to protect the climate by saving energy can raise American living standards and even benefit the economy. But an economic columnist Robert J Samuelson noted in Newsweek: "It would be political suicide to do anything about climate change. … So clever politicians are learning to dance around the dilemma". He estimated that companies would not cut carbon emissions until they were levied a tax of $100 for each metric ton of carbon they emitted. It is time we thought of punishing polluters through free market solutions.

Ofcourse we have already seen how markets are lapping up CDM. Here is a recent carbon trading account. "On a Monday morning in May, six brokers, ties askew, were working the phones in the London offices at Natsource LLC, as prices flickered across their computer screens. These brokers don't trade stocks or bonds or gold or oil. What they trade is pollution. To be exact, they buy and sell the right to foul the air with carbon dioxide (CO2), a greenhouse gas that the US National Academy of Sciences says causes global warming."

Driven by the Kyoto Protocol on global warming and Wall Street's pursuit of profit, carbon trading has exploded. This controversial corner of the derivatives market – and the dangers it may pose to the environment and human health – are growing as never before. The market in European CO_2 Rights, which didn't exist four years ago, is forecast to reach $5 billion in 2005, according to the Amsterdam-based European Climate Exchange. Trading in the 10-year-lod U.S. markets for sulphur dioxide (SO_2), a primary

cause of acid rain, totals $7 billion annually. To put those figures in perspective, the entire US wheat crop of 2002 - 2003 was valued at $5.7 billion.

Carbon trading has enormous potential for developing countries like India. India is considered the largest beneficiary claiming 31% of the total world carbon trade through the CDM expected to rake in at least $5 - 10 billion.

A is for activating women groups & teenagers. It is now a well-established fact that women and teenagers are the two sections of society who can drive social change. So our effort should be to motivate and mobilise them to PROACTIVATE and then use them to effect change in others.

T is train yourself to eco-innovation. Eco-innovation is defined as doing things in a radically different way to save environment. We all have to so design our day today chores that it causes least environmental impact. For this we have to be guided by an eco-compass, whose six sides are: Minimise energy intensity; Minimise use of materialise dematerialize; Minimize toxic waste; Recycle, reuse, revalorize or simply extend the usage; Minimize use of scarce resource and Minimize transportation

E is the execution. No idea is going to work until someone executes it. As Aldous Huxley says the great purpose of knowledge is action. There is no better person to execute it than yourself. So begin the change with yourself. PROACTIVATE and save the climate. The alternative is to let our planet annihilate.

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****WEF is offering green wristbands to those pledging to PROACTIVATE**