

DEVELOPING COUNTRY PERSPECTIVES ON CLIMATE CHANGE  
AND SOME THOUGHTS ON IMPLEMENTATION STRATEGIES

By Tariq Mustafa

When Robert asked me to speak on this subject he showed perspicacity and sensitivity to hear the point of view of others, but he did not show the same perspicacity in selecting me to do the job since I hardly have any credentials in the subject (To tell the truth, perhaps he had little choice)

What I intend is to give you an informed layman's view point of what the scene looks like as viewed from the developing countries and trust that you will find the inputs of some interest and may be of use in the deliberations of this conference.

I will try to cover the following three areas in this talk.

1. First would be a quick expose of the scene as I see it. In fact you already got a foretaste of it in the remarks made by Mr. Sehdev Kumar of Canada, originally from India, in his interventions in the earlier part of the Conference.
2. In the second part I would like to touch on how one can expect to implement the phenomenal and deep seated Changes which the Climate change Challenge calls for if we are to seriously expect to reverse the adverse trends and ameliorate the rapid deterioration, because the changes required are least likely to be implemented willingly by most existing Governments, if one is to go by the experience to date.
3. Third part will deal with the foundational paradigm shift that is called for in our value system if we are to realistically expect a sustainable program to be put in action to bring about the deep shift in our attitudes and to free ourselves from the habits and practices acquired over ages from our existing cultures etc. and place it on strong moral foundations.

Concerning the first part, the views expressed by Mr. Sahdev and to some extent by Dr Raman are quite close to what is held in that part of the world which is that the whole mess of excess of green house gases, resource depletion, climbing consumption etc etc is the creation of the Western Civilization with the developing world having little part to play in it except being on the receiving end and now they are being asked to not just share the burden but in fact bear the brunt of it. Even in the population explosion of the past few centuries, the feeling is expressed, that the Europeans brazenly not only multiplied exponentially but displaced and massacred the indigenous peoples and settled on their lands. It has been said that if the descendants of all the European emigrants to their colonies were to be brought back to Europe it will become the densest populated area of the world and the target of ire by the environmentalists of all hues if they were to honestly look at the problem.

Now when the developing countries have finally found their freedom, and are in charge of their destinies, and are embarked on a program to provide a decent standard of living to their people they are being asked to go slow with green house emissions and in the process to incur additional expenditure in the name of controlling climate change.

Talking of facts and hard evidence it is pointed out as an example that after the start of colonization by the Europeans, within the hundred years of 1750 when Lord Clive defeated Sirajudaula the Nawab of Bengal in India, to around 1850 when the British Crown took over the administration of India away from the East India Company, the sub-continent of India-Pakistan fell from being arguably the richest part of the world to one of its poorest. Its fine textile industry was destroyed for ever to make room for the cheap textiles produced by the coarse power looms of Manchester and land revenue collected from the fertile Indus-Gangetic plain was one of the major factors in financing the Industrial revolution in England well ahead of the rest of Europe. Additionally reports of English visitors to Mughal India in the early 18<sup>th</sup> century, when the Mughal rule was already in decline mention that the educational and cultural level of the average courtier even in the Provincial courts of the Mughal Empire was higher than the level of the average courtier in the court of Saint James. Two centuries of colonial rule brought the literacy rate down to around 25%.

What happened to the Aztec and Mayas and the Red Indians of North America is very well known to this audience and need not be repeated here. Flourishing civilizations were looted and uprooted. In a nut shell the developing countries view is that whoever was responsible for making the mess should at least be made to clean up the mess and we should be allowed to get on with our lives i.e. we should be allowed to follow the route followed by the polluters, in fact we should be helped to do so. These are the feelings expressed by the educated elite who though being a small minority in these lands are at the helm of affairs. They are quite well aware of the ecological issues and participate fully in the ongoing discourse such as RIO and its follow up. On the other hand the majority of the people mostly uneducated are blissfully unaware of these issues and are trudging along with business as usual of making their two ends meet which is more than a full time job, except to go home at night and indulge in the universal activity of making babies to secure their uncertain future.

However the people are very alive to the changes in natural phenomenon which affect their livelihood-the coastal people can see the sea encroaching and the waters rising forcing them to shift their homes, the glacier melt cannot go unnoticed as the waters gather in unstable lakes, the change in draught patterns and the shift in precipitation. While they do not understand the underlying science they do feel the change coming and are very uneasy about the future.

Having stated their view, for the record, it is also realized that in view of the vast challenges facing all of humanity, we need to “forgive though not forget” the happenings of the past--an apt phrase written on the portal of a Chinese Museum in Nanching or Nanchang in memory of the atrocities committed in that city by the Japanese just prior to WW2. It is time for us all to look to the future and not remain wedded to past historical or cultural animosities. Let bygones

be bygone. It is time to move on, especially when we do not have much of it. However this would call for a radical change in our attitudes, calling for a paradigm shift from the recent doctrine of pre-emption and regime change, to policies optimized for living in a Global Common and suited to coexistence on a “Space Ship Earth” mentality.

As for form is concerned, most of these countries, I believe, including Pakistan for example have a Ministry of Climate Change for many years now, a National Environmental Policy is already in position under which all major National Projects whether in the public or private sector require a fairly comprehensive environmental impact statement to be filed and defended. A number of NGO’s are also active on the scene. While plans have been prepared for tackling the long term issues such as the one’s being aired here work on the same is hindered by insufficient fund allocations.

It is well realized that Pakistan is one of the countries high on the list of suffering adverse effects due to Climate change especially global warming. Pakistan is greatly dependant on the great river Indus and its tributaries which rise in the high Karakorum mountains and after irrigating the vast Indus plain of Pakistan empty themselves in the Arabian Sea near Karachi. With the glaciers receding, the diminishing water flow of the Indus system is posing a great threat to the fragile agricultural base of Pakistan.

Sharing of the Indus waters was a major issue between India and Pakistan after the partition of 1947 and the dispute was coming to an ugly head in the 50’s when finally the Indus Basin Water Treaty was hammered out with the crucial assistance of World Bank, under which it was agreed that waters from the three western rivers will go to Pakistan and from the two eastern rivers to India and huge diversion canals were built to transfer water from one river to another and a couple of large storage dams i.e. the Mangla and Tarbela dams were constructed to regulate the system. This was a mammoth undertaking of the size of the Tennessee Valley authority and does not often hit the news because of its fairly successful and smooth operation through the last 50 odd years.

While achieving its immediate aims of fixing a problem successfully no one realized its likely effects on the environment which were drastic. With increased seepage from these big canals, which were not lined to save money, water seepage into the soil increased and within 20 years Pakistan was suffering from the twin menaces of water logging and salinity due to rise in the water table. We are indebted to Dr Roger Revelle, science Advisor to Pres. Kennedy who came up with a neat solution of vertical drainage which saved Pakistani Agriculture from an imminent collapse. It is a different matter again that Dr Revelle’s solution created its own problems of requiring large amounts of electric power needed for these massive drainage pumps from which we still have not recovered fully.

However, Climate change effects on the Himalayan Glaciers are now again disturbing the smooth operation of the system which is bound to lead to increased tension between the two

countries, by now nuclear armed neighbors. India has already started construction of new dams in the area in violation of the treaty, according to Pakistan.

#### AGENCY FOR IMPLEMENTATION

The question which arises and has been noticeable by its absence in discussions in this conference is as to just how such a mammoth and vastly complex and lengthy undertaking involving all the countries and people of the world will physically be implemented. Who will take charge of it, who will supervise the detailed technical planning and where will the required funds and resources come from? Of course a forum such as IRAS can hardly be expected to provide such answers, but some thought must be given to this question, even if we touch only its outlines.

In my opinion this task, which involves all countries and all peoples of the world, must be undertaken cooperatively and preferably with the willing involvement of all. It is going to be a stupendous challenge and the enormity of the task cannot be underestimated. It will involve much more than Technical Fixes. Credibility and confidence in the "System" will have to be created. It will call for deep changes in "Attitudes" acquired over centuries, as has been alluded to a number of times during the deliberations of this conference.

There have been numerous references in this Conference to the need for "Change" from the business as usual approach, but no definite proposals have been tabled or any direction for such a change seems to have emerged. I venture to suggest, looking at the depth and enormity and complexity of the problem that a paradigm shift in our attitudes is called for. Globalization, whether one likes it or not has been forced upon us by the onward "March of technology". The world is fast becoming ONE COMMON, but our political relations and our social systems are mired in old thinking totally unsuited to the global common future which is well nigh upon us. Sometimes one wonders whether a hostile threat from Mars or somewhere from outer space is needed to shake us from our slumber and to galvanize the human community. Perhaps only then we will be prepared to make the changes in attitudes and adjustments and sacrifices needed to meet the new reality. I venture to suggest that this is no longer a fictional scenario but something that we have to learn to cope with, without waiting for an imaginary threat to emerge from space.

Effort has been made to identify some of the salient features of the changes in our mental software that are called for: -

1. We have to learn to act as citizens of ONE WORLD. The days of loyalty to country, language, race, tribe or any other groupings are grossly outdated and must be abandoned. We must outgrow teachings such as my country – Right or Wrong. Nationalism may have served a purpose in the past (though I do not know what that was) Ecological problems know no such barriers and do not respect national boundaries.

The Jeffersonian statement in the US Constitution stating that it is a self evident truth that all men are born equal, should not just remain nice political rhetoric but must become a reality and the foundation of our future conduct, otherwise it is safe to say that nothing sustainable can be constructed.

While talk of “Diversity” is politically correct and theoretically attractive, it is not in harmony with the Reality of Globalization and One World. The new world order perforce will need and call for one set of laws, one code of conduct, at least for the public sphere. Without quickly recognizing this compulsion and moving towards this goal it is apprehended that we will find ourselves bogged down in interminable discussions and debates if not outright conflict. At the least it will cause unacceptable delays and interruptions in the stupendous undertaking which is called for to meet the challenges being discussed. To illustrate this point consider the fact that while diversity in driving laws on the road is quite feasible between different countries for example USA (on the Right) and UK (on the Left), because they are separated by distinct boundaries. But can this diversity of choice be taken into the air for control of air traffic or on the seas for marine traffic? The answer is clearly NO since the spaces there are common. Similarly for all common spaces such as for Commons of the Globalized Earth only one set of laws and rules will have to apply. Insisting on diversity will be impractical and in the language of “Mr. Spock of Star Trek fame” quite Illogical.

#### UNITED NATIONS

In my humble opinion UN is the only mechanism on our horizons which comes anywhere near to meeting the bill even if it be only half way. However the UN Charter will have to be drastically reviewed and revised. From becoming a debating Society for bargaining national interests it has to be changed into an International body for responding to the needs of tomorrows emerging challenges. It will have to become much more peoples oriented and steer itself away from and out of the clutches of big powers. With all its warts and weaknesses UN is still by far the best agency to spear head the environmental action program.

It will certainly need strengthening and basic reforms not just at the bureaucratic level but in its very structure and functioning. From a debating society representing national interests it will need to shift into a true representative of the human population of the world and a watch dog of its interests.

1. UN must be provided with its own sources of funding instead of depending solely upon contributions from its member nations, often literally begging from the main players, who often demand fulfillment of their own agendas. This could be started by placing at the disposal of UN new tax avenues such as outer space especially the synchronous orbit where most of the Communication Satellites are located, the Moon and the planets, and the seas beyond the current maritime limits including Arctic and the Antarctic. Not only will such steps generate revenue for the world body but will

eliminate much potential source of conflict amongst countries who are trying to lay claims to these untapped resources.

2. There is a need to reduce the dominant role played by the Security Council, especially the veto privileges of the big Five, US, Russia, UK, France, and China based on the power structure of post WW2 world which is becoming increasingly irrelevant today and will become an anachronism for our future world, it is hoped.
3. Strengthen the role of the Secretary General and the UN Agencies vis a vis the Security Council by perhaps giving the Secretary Gen'l an Advisory Council of Sages consisting of a few dozen eminent committed Internationalists such as Rev Desmond Tutu, Dalai Lama, former President Carter, Prince Hassan of Jordan, the Agha Khan, Gro Harlem Bruntlundt etc.
4. Mobilize the world opinion perhaps through innovative use of the possibilities opened up by Internet and the social media to bring the common people into the decision chain and reduce the role of intermediary groups and governments. If all this smells of moving towards a world government, then so be it, so much for the better.

Next I venture to suggest that certain lessons can be learnt from the field of Engineering which can help in finding solutions to the problems aired in the Conference. The special feature about Engineering, which is not necessarily shared by other subjects, is that Engineers are taught to look at holistic solutions. They have to make their products and projects work whether it is a Dam, an airplane or a computer. Proposing a hypothesis/theory however elegant it may be, will not do. For Engineers nothing can be left in the middle, their contraption must at least work or they are doomed. Thus Engineers, with due respects to others, unlike most others have their feet on the ground. It is known for a fact that after changes in China brought about by Deng Hsiao Ping more than half of the members of the Chinese Cabinet have been engineers, which is something unique in world Governments (or Is this just a coincidence?)

#### Engineering Lessons

1. Avoid overshoots which are often followed by oscillations and occasionally catastrophic failures or steep declines. Study the role and need for negative feedback to bring about stability in a system to avoid overshoots. This has relevance to the graphs displayed in the slides relating to the "Limits to Growth" report of 1972 exhibited by some speakers.
2. When natural systems develop large differentials, nature corrects the situation through storms and earthquakes to relieve the pent up stresses. Similarly in social systems if steep differentials appear such as the N-S disparities or the high income differentials between the Haves and the Have not's and if they are not taken care of equitably then one should be prepared to face revolutions and wars, classic example being the French Revolution. Thus vast inequities and income disparities, such as between the North and South and those within most countries, notably India and USA have to be reduced if not eliminated, if the possibilities of violent upheavals are to be avoided.
3. How does one put a price on the value of an object, a commodity or a person?

An Economist, we are told, does it on the basis of supply and demand considerations. On this yardstick humans will fetch a pretty low value since while there is a reasonable demand for human beings their supply is awfully cheap and plentiful. It needs little labor and nature has made the work not only easy but extremely pleasurable. Thus is it any surprise that human life has little or almost no value in our world of today, most probably because Economics rules the roost. Now let us see how Engineers would value a product. They see how much Materials, Energy and Labor go into its production. Applying this to value a human blows your mind. Cosmologists tell us that we are children of the stars, literally and not just poetically. Without the heavy elements which only get produced in the rare super-novae explosions of second generation stars life could not have arisen. Also the time taken was in billions of years, stupendous amounts of energy were involved. It is enough to show that in terms of an Engineer human beings cannot be valued. Each one of us is worth more than the trillions we saw displayed in the Economic.Vortex.com graphs. It is submitted that once we learn our value in these terms we will surely learn to value not only other humans equally but all life. Here then is another argument to move away from the current Wall Street paradigm

Earlier in the Conference many close issues were identified and flagged for finding possible solutions. An example was the proliferation of Deer population in the DC area which was threatening to destroy a National Park and sharp shooters were being assigned to kill the deers and the animal right groups were up in arms to stop such a move which they felt was not warranted.

Such issues will always keep cropping up in dynamic systems, where hard decisions are called for and idealistic solutions will not work. This is nothing new to Engineers who perforce learn to compromise in most of their product engineering. For example safety demands good safety factors and features to be built into aircraft which inherently are unstable systems. However care has to be exercised in keeping the weight of the aircraft as low as possible to make it fly and carry an economic payload. This calls for a delicate compromise between building in safety features and trying at the same time not to add too much to the dead weight of the aircraft structure. The Engineers thus learn to balance such conflicting demands in order to come out with practical solutions which will work in practice and are based on a balanced pragmatic approach staying away from extremism of all types.

Environmental solutions can benefit from following such an approach to balance conflicting requirements of the type discussed in earlier sessions. Following is an attempt.

1. Land Issues of Aldo Leopold referred to by Dr Turner. What if a middle way is to be adopted? Let Private ownership of land be allowed but instead of acting as an absolute owner we were to introduce the concept of a Trustee, who while free to benefit from the use of the land is bound to look after it also since the land would be held in trust for future generations.

2. Take retaliation as an example. It is human to try to retaliate when unfairly aggressed upon. So the Mosaic Law allowed an eye for an eye. Jesus on the other hand taught that one should offer the other cheek, which will be a better solution in the long run even if it be against human nature. A good middle way would be that an eye for an eye (but only one) be allowed to the aggrieved, but he is taught that if he can find it in himself then forgiveness is better. This will be more in line with human nature while pointing out the ideal to be sought.
3. Conflict and wars. On the one hand there is an idealistic call to ban all wars and on the other hand we teach that "All is allowed in Love and War" The desirable practical balance would be to take the position that while war may be permissible, but only in self defense, it must also be governed by laws and conventions designed to stop it at the earliest possible opportunity.
4. Killing of animals may be repugnant, but the middle way tells us that it may be allowed only for purposes of food but not allowed for purposes of idle sport like for example hunting for fun. A recent program on Discovery Channel described an experiment of a dozen or so people trying to live like a troop of pre-agricultural hunter gatherers for only fourteen days. They soon found that they were growing weak and dysfunctional, even after eating fish and fruits and perforce they had to go after meat from large animals such as deer or elk to meet their need of proteins, and when they finally managed to kill their first elk, most of them had a fit of remorse, so they sought forgiveness from the brother elk for taking its life, but announced that it had to be done as they had no other choice. Vegetarianism for general population only became feasible with the discovery and development of Agriculture.
5. Engineering also tells us that when dealing with a product such as an automobile it is best not to use home recipes but go by the recommendations of the manufacturer who knows best what the requirements for maintaining their equipment are. For example it would be foolish to ignore the manufacturers recommended oil change every 5000 Kms and decide to change the oil at 1000 or for that matter 10,000 Kms. Most of the time the designer would know better and yet it is strange that when it comes to living our lives we happily ignore the Creator factor and insist on doing what our desires tell us to do knowing full well that this cannot be the optimum course.
6. Are we part of Nature like all other beings, such as animals, plants, trees, or rocks or is Man something special? The balanced answer is that yes we are part of Nature but we also are something special because we are the only part of nature which has been given the facility of CHOICE. This freedom of CHOICE is the acme of Evolution and whether coming from Nature or Creator, it is the distinguishing feature of mankind from all the rest. Thus for me the answer to the question raised in the Conference as to whether the role of Humans should be an active one is a resounding YES. In fact we will be failing in our responsibility not to accept this role of almost being a Co-Creator.

All the above leads to the inevitable **conclusion** that the stupendous challenges posed to humanity by the impending threats of population explosion exacerbated by climate change due to increased GHG's and depleting resources will call for a long term intensive cooperative effort on the part of all the nations and peoples of the world. Technical fixes alone will certainly not be enough. It will require a paradigm shift in our basic attitudes towards each other based on stronger moral dimensions involving universalism and justice for all, stressing cooperation more than competition, calling for willingness to sacrifice self for common good and recognition that all mankind is one brotherhood having strong bonds with other living beings and nature in all its forms. Human beings, blessed with freedom to Choose, are Co creators and carry the onerous responsibility of maintaining balance and sustainability on this globalised mother earth for the future generations.

(Talk delivered by Tariq Mustafa on Friday 3<sup>rd</sup> Aug 2012 at the 58<sup>th</sup> Annual conference of IRAS held at Silver Bay, Lake George, New York State.)