

## **Poverty Eradication – A Primary Component of Any Effective Strategy for Climate Stabilization**

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Despite growing scientific evidence that our present patterns of consumption and production are leading to massive disruption of the planet's life support systems, particularly of our climate and our living resources, most governments continue to drive into the future with only the rearview mirror to guide them. International treaties have been negotiated to slow down this headlong race to self-destruction, but the foot on the accelerator pedal continues to press harder than the one on the brake; the biggest polluters are still the biggest defaulters.

Given the long lag times between cause (emission of greenhouse gases) and effect (changes in atmospheric temperatures), the global climate is in for modification no matter how soon the economies of the world reduce their use of fossil fuels and cutting of forests. The legacy of some 150 years of profligate energy and material use will see to that. Much of this change, which will in turn lead to changes in rainfall, sea levels, frequency of natural disasters and other unpleasant phenomena is widely considered to be unfavourable, if not outright harmful.

While it is imperative that our scientists, environmentalists and diplomats work day and night to rectify this state of affairs, and bring about global agreements and national policies that will reduce the future causes of global change, it is also now necessary to evolve ways that go beyond the simplistic knee jerk solutions currently being sought by those who have an interest in continuing the status quo.

It is a characteristic of complex societal or natural problems, especially those that have long lag times between cause and effect, that the solutions that can actually produce the desired results are not necessarily the obvious ones. The most effective solutions may even be sufficiently counter-intuitive to evoke considerable derision from the experts. So it is with climate change. Assuming that the atmospheric processes that cause climate change have time scales of decades or even centuries, the responses needed must be in tune with those time scales.

We need action now for immediate results – not only to satisfy the public that their governments and corporations are indeed responding, but also because every ton of carbon not emitted is a ton of grief saved somewhere down the road. But even more urgently, we need action *now* for real long-term results, where the impact will be even greater. The carbon emissions that need to be controlled most urgently are those of the global economy fifty years from now, a world inevitably more democratized and equitable than ours today, and one therefore in which everyone will have the right to demand a much higher level of total energy use for.

*Counter-intuitive though it might appear, the most effective way to reduce the long term impact of human activity on the climate is to accelerate, as quickly as possible, energy use (or at least the services that energy makes possible) among the poor on this planet.*

The two primary numbers that will determine the state of the climate in, say, the year 2050 are the global human population and the per capita energy (particularly fossil fuel) consumption at that time.

The population growth rate in a society is not, however, an independent variable: it is closely related to the level of energy services available to members of that society. Human fertility has a strong inverse correlation with the state of economic development at any given time. The better the living conditions and opportunities available to people, the lower, generally, the family size. The Human Development Index (HDI) of UNDP is a widely accepted measure of the quality of life. And the UN data shows that HDI is highly correlated with availability of energy services. Thus, as the Chart 1 below shows, an excellent way for a society to bring down human fertility is to improve access to energy services – where possible by using energy more efficiently and where necessary by accessing additional primary energy.

A rough idea of the impact on population growth of improved access to energy services (and therefore of a higher HDI) in the 3<sup>rd</sup> World can be obtained from the population projections shown in Chart 2. The various curves show the population growth trajectories that can be expected over the next fifty years. These estimates result from using UN population projections with a simple model for how the HDI influences human fertility. The numbers indicate that the global population we could expect varies drastically with the energy use patterns we introduce today into the low-income countries. As Table 1 shows, the total annual carbon emissions would in, say, 2050 be much lower if the immediate energy needs of the poor are met today.

Thus, though it might appear to be paradox, bringing the energy services available to the poor (through improved efficiencies, use of renewables and other alternatives, not only by pouring in more raw energy) to a reasonable level is the most important intervention needed to reduce climate change. It could reduce the world's population in the year 2050 from a potential of around 10 billion by as much as 30%, and consequently result in a huge reduction of Carbon emission.

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