

TO THE RESCUE

Peak Oil, Dying Cities and Cities of Tomorrow

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[Peak oil means when the production of petroleum products has reached a peak and hence-forth it will only fall. This has already happened. It heralds the collapse of industrial societies. Cities are energy consumers, not producers. With the fossil fuel era coming to a close, and no viable alternative energy source visible on the horizon, cities as they exist today are unsustainable and dying. Their future depends on whether they can reinvent themselves radically—reduce their energy consumption drastically to come closer to that of their hinterlands, and distribute energy equitably to all their residents. Cuba and transition towns in North nations have already begun to go down this road. Many similar initiatives are occurring in urban India also.]

Although widescale use of petroleum and its product has a history of only about 100 years it has become central to the very existence and functioning of modern societies. The recent oil price rise in India and reaction to it bears ample witness to this. Transport and power are central to modern societies. More-over there is always an annual increase in its demand, popularly known as growth. Any decline in its supply threatens the very fabric of this society. 'Peak oil' does exactly this and endangers the collapse of the system.

What exactly is 'Peak Oil'— which is likely to lead to the end of the industrial era? At the present rate of consumption, all available oil will be used up within this century. But peak oil is not about when the world runs out of oil, but rather, when the production of oil starts to decline, and this has already happened. While expert opinions differ, most of them seem to agree that it is already there (2005–2008) and people are witnessing the effects in the global crash of capitalism!

Peak Oil crisis starts with rise in petroleum prices. For some time the figure of USD 100/- per barrel of crude has been considered to be the turning point. On November 21, 2007 oil price hit USD 99. In 2008 it reached USD 147, ushering in an economic crisis; a recession in North America, Europe and Japan. This economic crisis, as it is known, is leading to a worldwide collapse of the system. Since then capitalism is beset with one after another global crises. After the housing crisis, there was the financial meltdown, then the debt crisis in Greece, Ireland, Italy, Spain and Portugal. More recently the mass movements in West Asia have once again sent the oil prices soaring upwards. Today with the prospect of Greece leaving the EU, Europe is heading towards a deeper crisis. Due to global recession the demand for oil and therefore its price tends to fall. Still it will never go back to old prices. It is hovering around USD 100.

The empire is imploding and collapsing. Whether the collapse comes in a couple years or a decade is not predictable. There are too many fast changing variables, the most important being the people's struggle against it and the vision of an alternative society. But irrespective of

the date, the world has to face either chaos or prepare for a transition to a society based on lower energy and equity. Such a society will have different forms in different parts of the world depending upon their history.

DYING CITIES

Cities play a central role in the functioning of the system. They are seats of power, business, trade, industry, education and culture. Historically the cities existed because they siphoned large quantities of energy surpluses from their hinterlands. Today the primary energy source in the cities is fossil fuels. However, with the fossil fuel era coming to a close, and no viable alternative energy source visible on the horizon, the cities as they exist today are unsustainable and extremely vulnerable to collapse. Every big city is showing signs of this collapse.

European imperialism gave Europe an enormous amount of surplus energy siphoned off from Asian and African colonies. A part of this surplus energy was used to transform medieval cities into fossil fuel age cities. Roads were widened for automobile use. Cities expanded laterally eating up farmland; and vertically to dizzying heights as cement concrete had the strength to do that. Massive bridges allowed wide rivers to be crossed easily, and aeroplanes have reduced travel time between cities on different continents to less than a day.

There are two types of cities in the modern Industrial age. The first type is located largely in Europe, North America and Australasia, where the transition from Medieval Age cities that are based on animate energy and biomass to Industrial age cities that are based on fossil fuels is largely complete. Typical examples of cities are: Berlin, San Francisco, Stockholm, Melbourne and Tokyo. The second type of cities is in the developing countries in Asia, Africa and South America, where the transition is still in progress - the metro and mega cities. In India Mumbai, Kolkata and Delhi are the mega cities (population of one crore) and there are 30 odd cities with population of more than a million. In these cities the transition is not complete and the medieval and modern coexist.

Thus the cities in today's world, particularly in the developed world and in metro and mega cities of developing nations are becoming unsustainable. In the last hundred years they restructured themselves to suit to fossil fuel transport and economy - wider streets, suburbs and fossil fuel based energy. With the oil crisis they are falling apart and dying. Their future depends on whether they can reinvent themselves radically-reduce their energy consumption drastically to come closer to that of their hinterlands, and distribute energy equitably across all their residents.

Given the impending energy crisis, cities will not have the necessary energy surplus to sustain themselves. They will not disappear overnight, but will perforce shrink. If such a shrink is not to be chaotic, it is better to plan their shrink from now. Some of the fundamental issues for cities will be:

1. Cities should plan their shrink so that they do not to exceed a population of 500,000.

2. Cities should distribute energy evenly across all its residents to avoid the risk of conflict between various sections of its residents.
3. The difference in the per capita energy consumption of city and rural people should be narrowed significantly.
4. Cities must plan to configure themselves on the future energy source, i.e., solar energy.
5. Cities in developing countries will never have the resources (energy and financial) to complete the transition to becoming cities based on fossil fuels. It is best to abandon the attempt to make that transition right away and begin the transition to becoming solar cities. For example, plans to widen streets, to have a metro, build a new airport, bring more water from distant rivers etc. should be abandoned.

CITIES OF TOMORROW

Several hundred cities and rural communities all over the world are involved in local changes to meet such a situation. They have been known as ecological villages, transition towns and post carbon cities. In India too many urban initiatives are taking place.

This story, however, must begin with Cuba where many of the initiatives that are being discussed in the article took place about two decades ago.

CUBA

Cuba is where "Peak oil" hit in 1989-in an artificial manner-because there was no oil shortage then. The Soviet Union had begun to collapse and Cuba's petroleum imports dried up. US embargo against Cuba did not permit imports from other sources.(1)

Cuba's response is an inspiration to the rest of the world. First, a nation-wide call was given to increase food production by restructuring agriculture. It involved converting from conventional large-scale, high input monoculture systems to smaller scale, organic and semi-organic farming systems. The focus was on using low cost and environmentally safe inputs and relocating production closer to consumption centres to cut transport costs.

A spontaneous decentralized movement to set up urban farms was born. By 1994, more than 8,000 city farms were created in Havana alone. Front lawns of municipal buildings were dug up to grow vegetables. Offices and schools cultivated their own food. Many of the gardeners were retired men. Women played a larger role in agriculture in cities than they did in rural areas. By 1998, an estimated 541,000 tons of food were produced in Havana. Food quality improved as people had access to a greater variety of fresh fruits and vegetables. Some neighbourhoods produced as much as 30% of their food.

The growth of urban agriculture was largely due to the State's initiative. New planning laws placed the highest priority on food production. Licenses were granted to convert unused urban land into farms, and resources were- made available to aspiring urban farmers. This helped in

converting hundreds of vacant urban spaces into food producing plots. Another successful device was the opening of farmers markets that allowed direct sale of farm produce by farmers to consumers. Deregulation of prices combined with high demand for fresh farm produce in the cities allowed urban farmers to generate two to three times the income of rural farmers.

When oil supply stopped in 1990, transportation in Cuba grounded to a near halt. No cars ran; public conveyance collapsed; and the streets were empty. People walked. In the early-1990s, Cuba imported 2,00,000 bicycles from China. Trucks were converted to buses by simply welding steps at the back and adding a skeletal frame of rods and a canopy. The concept was refined into the 'Camellone' (The Camel), Cuba's mass transit bus. Built on a long chassis vehicle, it could accommodate 250 persons. For shorter distances cycles and auto rickshaws were used. In smaller towns, horse drawn or even mule drawn 'cabs' were used. Car-pooling and ride sharing became common. Designated government officials in yellow uniforms had the right to pull over even government vehicles and seat people in need of transport.

TRANSITION TOWNS

Transition Town is a more recent phenomenon. It is a grassroots network of communities that are working to build resilience in response to peak oil, climate destruction, and economic instability. Transition Town is a brand for these environmental and social movements founded (in part) upon the principles of permaculture, based originally on Bill Mollison's seminal *Permaculture*, a *Designers Manual* published in 1988. The Transition Towns brand of permaculture uses David Holmgren's 2003 book, *Permaculture : Principles and Pathways Beyond Sustainability*. These techniques were included in a student project overseen by permaculture teacher Rob Hopkins at the Kinsale Further Education College in Ireland. Two of his students, Louise Rooney and Catherine Dunne, set about developing the transition towns concept and took the far-reaching step of presenting it to Kinsale Town Council, resulting in the historic decision by councillors to adopt the plan and work towards energy independence. The term transition town was coined by Louise Rooney and Catherine Dunne. The Transition Towns movement is an example of socioeconomic localisation.

The idea was adapted and expanded through 2005, 2006 and beyond in Hopkins' hometown of Totnes where he is now based. The initiative spread quickly, and as of May 2010, there are over 400 communities recognized as official Transition Towns in the United Kingdom, Ireland, Canada, Australia, New Zealand, the United States, Italy, and Chile. The term transition towns has morphed into transition initiatives to reflect the range and type of communities involved - e.g. villages (Kinsale), neighbourhoods of cities (Portobello, Edinburgh), through council districts (Penwich) to cities and city boroughs (Brixton).

Central to the transition town movement is the idea that a life without oil could in fact be far more enjoyable and fulfilling than the present: "by shifting our mind-set we can actually recognise the coming post-cheap oil era as an opportunity rather than a threat, and design the future low carbon age to be thriving, resilient and abundant-somewhere much better to live

than our current alienated consumer culture based on greed, war and the myth of perpetual growth.”

An essential aspect of transition in many places is that the outer work of transition needs to be matched by inner transition. That is in order to move down the energy descent pathways effectively we need to rebuild relations with ourselves, with each other and with the “natural” worlds. That requires focusing on the heart and soul of transition.

A key concept within transition is the idea of a community-visioned, community-designed and community-implemented plan to proactively transition the community away from fossil fuels. The term “community” in this context includes all the key players-local people, local institutions, local agencies and the local council.

As of 2010, transition initiatives are generally including the global financial crisis as a third aspect beside peak oil and climate change. Initially, this has been linked to the creation of a series of local currencies in transition towns including the Totens pound, the Lewes pound, as well as the Brixton pound in London.(2)

URBAN INDIA

India has an urban population of 300 million, greater than the population of USA, or for that matter, greater than any country except China. This urban Indian population lives in a total of 400 urban agglomerates. Of this urban population, more than half (180 million) lives in 35 cities that have a population greater than a million. The three metros/mega cities, Mumbai, Kolkata and Delhi have more than 10 million residents. Hyderabad and Bengaluru, have more than 5 million.

It will be easier to tackle the problems of 120 million people who live in 365 urban agglomerates of less than a million, and many of the success stories will first come from them. On the other hand, many groups and individuals in bigger cities are more aware and have resources to start alternatives. They can help groups and residents in smaller towns.(3)

It is only in the metro and mega cities that restructuring to suit cheap fossil fuel has occurred in a significant way. Road widening, tarred roads, suburbia etc. has occurred in these cities. Here also it is not complete. Pockets of slums-as much as a third of the population living in them, which have small lanes continue to exist. So changes required to face a fossil fuel free societies are far easier in India and in other developing countries than in the developed countries. On the other hand public awareness on these issues is low and it is not able to influence the governments or even local bodies in terms of policies. So the changes that are occurring are on the basis of acute problems that people are facing due to the present crisis. These are: rain water harvesting, fuel (for cooking) and fuel efficient stoves, urban agriculture for perishable foods like vegetable and fruits which are becoming expensive due to transport costs, transport based on non-fossil fuels-bicycles, cycle rickshaws, horse, donkey, camel and

bullock carts. Solid waste management is probably the only area where city-wide policy intervention has been possible.

Right now rooftop rain water harvesting has been the most widely discussed topic. Many state governments have passed laws making it compulsory and have published booklets to help people how to do it. Organisations like CSE in Delhi train people in it and have also carried out prestigious projects. However in terms of implementation it is still slow, very slow. It is the most promising area of activity for creation of green jobs and green entrepreneurship. Rain water harvesting is not limited to rooftop alone. It involves tree planting in cities, restoring tank and ponds and in general what is called 'watershed management' which can apply to all the areas.

Fuel efficient stoves have been around since the 50s starting with Magan Chulha having a chimney and designed for 2 or 3 pots. There are others, which produce charcoal as a by-product or are based purely on charcoal as a fuel and finally there are solar box cookers. The problem is that they are a bit expensive and require knowledge and maintenance. People who can afford have other alternatives like gas or servants to cook for them. The real answer is to increase equality in society and have plentiful fuel wood by planting fuel wood trees. Charcoal produced from wood should become the main high density fuel for artisan / industrial use.

Urban garden movement too is catching up with relatively modern and affluent urban people who are becoming aware about health food. They mainly produce vegetables. There are e-groups, training programmes and books in most big cities. Several cities have started marketing local and organic products. Bangalore and Hyderabad have fairly well established shops which also couple network places for kitchen gardens. Poor people, on the other hand, do manage to grow whatever is possible. In smaller towns where there is a bit more space and people are more linked to rural hinterland, this happens much more.

Bicycles and cycle rickshaws are making a genuine comeback and a large number of towns are seeing not only revival, but also better equipment and better social organisations. On the other hand city planners are still governed by fossil fuel lobby and the convenience of private cars dominates. (4). However some towns do have cycle lanes. Nanded in Maharashtra has lanes for cycle in several streets.

In Vellore in Tamilnadu a zero waste management programme has been successfully carried out. Several municipalities all over the country are trying it out. This coupled with anti-plastic movement is slowly changing the face of urban India. (5), (6)

POLITICAL HURDLES

As it is obvious from above, in India there is lack of awareness and political will on these ideas. Why is it so? These ideas require local solutions and are based on strengthening of local politics and of local bodies. In Indian polity they have always been weak and Indian polity in the last 60 years have not strengthened them. In fact Indian polity has actually weakened them by breaking down communities and by populist electoral promises. Most Indian politics-from

extreme right to extreme left is about capturing central power and is not about grassroots democracy. These ideas require anarchist inputs—ideas of opposing power in any form, local direct democracy and local self-management. One could find them in the writing and works of anarchists in the urban movement.

HISTORICAL AND IDEOLOGICAL ROOTS

Many of the ideas discussed above have roots dating back to a hundred year, in the Anarchists movement. In urban planning, as Peter Hall says in 'Cities of Tomorrow', people must begin with Patrick Geddes.(7) Patrick Geddes was pioneer in people-centric urban planning and regional planning. 'Town planning is not mere place-planning, nor even work-planning. If it is to be successful it must be folk-planning.' It was he who introduced the 'Diagnostic Survey', 'Conservative Surgery' (as against demolition), planning for health and planning for open spaces and trees. He influenced town planners all over the world. Lewis Mumford and The Regional Planning Association of America and its journal 'The Survey' played an important part in spreading his ideas (8).

Patrick Geddes was in India during 1915-1919 and he carried out some 60 town planning exercises. Fortunately a book about him, 'Patrick Geddes in India' has been reprinted in India and enthusiastic readers have access to most of his ideas now.(9) Here is a simple quote from Patrick Geddes: 'Town planning ... should start by the development in youth of a civic consciousness, working up through a knowledge of the immediate locality and city to a larger and most general grasp of their problems. ... There is, therefore, a great need of public co-operation; of an ever-increasing body of active citizens who will no longer leave all matters to official authority but work with the municipal representatives.' □□□

References and Notes

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