

TOWARDS A FOSSIL FUEL FREE SOCIETY

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[Global warming is a product of capitalist system or more generally that of industrial era. One cannot solve a problem with the same mindset that caused it (Einstein). This mindset, a product Industrial Revolution believed, among other things, in conquest of nature. There have been critics of capitalism, both within the Industrial Revolution mindset as well as outside. While the Marxist tradition is the most important among the former, and remains important in organising the oppressed people, it doesn't provide a vision of a fossil fuel free society. For that it is better to turn to the pacifist-anarchist tradition of Thoreau, Tolstoy, Kropotkin, Gandhi, Albert Howard Fukuoka, Schumacher and Patrick Geddes. Finally the article gives a brief description of a possible future fossil fuel free society.]

That the main cause of global warming is burning fossil fuel is known to all. The release of Green House Gases (GHG) is so big that it far exceeds the earth's capacity to absorb them.

This consumption of fossil fuel is not evenly distributed across the globe or among the people within a country. An average American puts out 20 tons of CO₂ emission per year compared to an average Indian who puts out a mere one ton. And of course these averages hide the fact that most of the carbon output is contributed by the 20% rich people of these countries and the poor consume far less energy. Thus there are extreme inequalities in GHG output within and across countries.

This level of release of GHG is relatively a new phenomenon. For tens of thousands of years, humanity has existed, slowly changing the natural environment and ecology to meet people's needs. However today's human activities that lead to increase in greenhouse gases are very specific. They do not pertain to the tribal or communal village life that humanity led in the past and which even today billions of poor people are leading. They are the direct consequences of coal based steam technology that saw the creation of the Industrial Revolution and mass manufacturing. In the 20th century oil replaced as well as supplemented to coal and is causing further pollution and global warming.

Why does capitalism need continuous increase in energy consumption? The logic of capitalism is production for sale and profit and not necessarily for need. It implies that to increase profit they should go on producing more and more, create artificial needs and demands through advertisement etc. And that requires consumption of energy.

Thus today's global warming is a specific historical phenomenon. It is only with the ascendancy of industrial-based capitalism in the period of one hundred and fifty years that global warming has occurred in a dramatic manner and increased to a point that threatens to alter the earth's climate and ecology irreversibly.

If global warming is caused by burning fossil fuel then the alternative must be a fossil fuel free society. How one would go about it? As Albert Einstein once said, 'You cannot solve a problem with the same mindset that caused it.'

The mindset that caused global warming, is capitalism or more specifically industrialism. This mindset is a product of Industrial Revolution, which among

other things believed in conquest of nature. So any solution offered within this system will fail. Because the essential change that is required is to roll back the energy consumption to at least pre-1975 level (when it crossed the earth's carrying capacity) and preferably even earlier, say 1930 (to compensate and to have a sustainable level). None of the solutions offered include this. Thus all technological fixes like wind, solar, geothermal, conquest of space etc. will fail. It has been shown empirically that these solutions cannot generate anywhere near the energies consumed today. There cannot be a solution within the capitalist system.

From the very beginning there have been critics of capitalism, both within the Industrial Revolution mindset as well as well outside of it. Among the former the most important of course is the Marxist tradition. Although both Marx and Engels had many deep insights about the ecological damage done by capitalism, they were not opposed to industrialism and progress as such. While their view may not help people for an alternative vision, their view on who will carry out the change, namely the proletariat, cannot be rejected. It is the victims who have a maximum stake in change and therefore the victims of global warming, the poor and oppressed of the world, through their organisations like trade unions, peasant associations and a wide variety of people's organisations will play a crucial role in bringing out the transformation.

For the vision of a fossil fuel free society one will have to look at other traditions. These visionaries were not some wooly people living in a dream world, moving around with long beards and living an undisciplined life without care. They were highly reputed professionals well established in the main stream and through their practice found a critique of their fields and established new and alternative disciplines. Their vision does not actually use the words fossil fuel free society. It is a wider vision of an alternative society, which among other things, will be based on low energy consumption.

Such a tradition would include Thoreau (*Walden*), Tolstoy (*The Kingdom of God is Within You*), Kropotkin (*Fields, Factories and Workshops*), Gandhi (*Hind Swaraj*), Albert Howard (*An Agricultural Testament*), and Masanobu Fukuoka (*One Straw Revolution*), Schumacher (*Small is Beautiful*) and Patrick Geddes (*Patrick Geddes in India*). Their books mentioned in brackets above are extremely important path breaking works. In the appendix a brief description of these books and the authors is given.

Mainstream critics call this tradition as romanticism and in fact, Tolstoy did say, 'How can there be romance with electricity!' But probably a more accurate description of this tradition is Pacifist anarchism though, probably except Kropotkin none of them called themselves an anarchist! Anarchism has large number of different variations and it is difficult to define it. However in general :

1. They are anti-state. The State has never good to poor and never will. At best they were for minimal, small state, wielding low political power.
2. They believed in freedom and cooperation and mutual aid rather than competition. A free association of free people is their motto. They believed in small communities federated with other similar communities.
3. As a rule they believed in Respect for Nature and not in Conquest of Nature. Their approach was deeply ecological.

Thoreau, Kropotkin and Tolstoy laid the foundation of a powerful critic of capitalist and industrial society and were the principal visionaries for an alternative anarchist society. Each represented a different perspective. Thoreau emphasised the importance of self-reliance, solitude, contemplation, and closeness to nature in transcending the crass existence that is supposedly the lot of most humans. Kropotkin's emphasis is on local organisation, local production obviating the need for central government. Kropotkin's vision is also on agriculture and rural life. Tolstoy speaks of the principle of nonresistance <<http://en.wikipedia.org/wiki/Nonresistance>> when confronted by violence and he advocated non-violence <<http://en.wikipedia.org/wiki/Non-violence>> as a solution to nationalist woes.

However it was Gandhi who translated many of these concepts into action first in South Africa and later in India. His influence spread far and wide. Martin Luther King and Nelson Mandela are some of the important examples of this. Gandhi was well aware of writings of Thoreau, Kropotkin and Tolstoy and even corresponded with Tolstoy. He blended his own unique vision in the booklet *Hind Swaraj*. Swaraj is a kind of Individualist Anarchism <<http://en.wikipedia.org/Individualist Anarchism>>. It warrants a Stateless society as according to Gandhi the overall impact of the State on the people is harmful. He called the State a "soulless machine" which, ultimately, does the greatest harm to mankind. "It is Swaraj when we learn to rule ourselves." The booklet is a severe condemnation of modern civilization. He was equally critical of modern technology and its craze for labour saving machinery, the impetus behind which is not the philanthropy to save labour but greed. He advocated self-sufficient villages based on rural industry. He had an integral and holistic view of agriculture, animal power, industry, education and health care. Today the problems arising from industrialisation and its reliance on fossil fuels have shown his ideas to be far sighted and possibly appropriate for the post-fossil fuel age.

Around the same time there were others who were also translating similar ideas in specific fields both in theory and practice. Thus in agriculture it was Sir Albert Howard, the father of organic farming movement. Masanobu Fukuoka of Natural Farming fame and Patrick Geddes in town planning. E F Schumacher gave a critique of economics and GNP and developed concepts of human level small and appropriate technologies.

THE VISION

If one takes all these authors together they offer a powerful critique of industrialism and capitalism and provide an alternate vision. Kropotkin, Gandhi, Howard and Fukuoka also offer a very concrete way of how to go about it. One common thread that runs through all of them is a strong ethical attitude. Kropotkin was called an atheist saint. Gandhi is famous for his 'The earth can provide for everyone's needs but not for their greed' and so on. Needless to say, that they had countless followers both among working people as well as among professionals, social scientists and artists.

So why did they not succeed or why did capitalism triumph in spite of them? A short answer is that they were ahead of their times. The material basis of capitalism, a concentrated source of energy like coal and oil appeared

inexhaustible. The trade union movement was able to wrest some benefits for itself in the heart of the empire. Today several crises of capitalism have come together, feeding each other. These are global warming, peak oil, food production peaking, inter-imperialist contradictions escalating and anti-imperialist struggle both at organised level as well as large small scale movements all over the world. The era of industrialism is coming to an end.

The collapse of the capitalist system does not automatically bring a new society. For example in Myanmar (formerly Burma) Burma Shell took its last drop of oil more than sixty years ago leaving an empty Shelf behind! But even today Burma is in wilderness. Nearer home capital flew from West Bengal in the 60s and 70s. The Left Front, instead of following Cuba's example which it admires, is bent on bringing capitalism back at any cost!

Today people face three main tasks. First is to articulate clearly the vision for a fossil fuel free society in its entirety. Then to engage with trade unions and other mass organisations to evolve a concrete programme. Because unless the ideas are gripped by the masses, they will not, as Mao has said, become a material force. The programme should give a concrete activity at the organised level as well as an ethical base for an individual and a small group to live and act.

Some Basic Principles

1. Human beings are a part of nature. They have to live with it and not conquer it.
2. Within human society there should be equity.
3. Opposition to all political power, particularly that of state and government. At best a minimal small state.
4. Small self-managed societies based on the principle of free association of free people.
5. The technological base of such society will mainly be biological processes like organic farming, and use of animals, leather and wood as main raw materials.
6. The main agenda for humanity for the next thirty years or so will be to restore the earth from the degradation caused by capitalism.
7. There should be a holistic approach to health, education, culture and sciences. They should be integrated with the main agenda of the society while maintaining a creative diversity of approaches.

What People May Have

1. Smaller states/republics with ecological/bio-geographic and linguistic (dialect) boundaries, such as Telengana, Vidarbha, Malwa, Bundelkhand, Awadh, Bhojpur etc. There may be nearly 100 such republics in the Indian subcontinent.
2. These will be federated regionally, which are also large bio-geographic regions, such as Deccan, Western Ghats, Gangetic Plains, and North-East India etc. These may be further federated within even larger land masses such as South Asia.
3. Urban Centres : Each of these republics will have a few large and small urban centres, ranging in population from 5 lakh to 10,000. These will be centres of learning, research and culture. They will also have a small industrial activity mainly based on recycling and maintenance. One of the main activities will be separating at source and recycling urban solid waste. The bulk of which, being biodegradable will be made into compost and feed into urban vegetable and

fruit production centres. Thus the cities will be garden cities producing their own vegetables and fruits.

4. Bulk of the population will of course be rural. These will be mainly self-sufficient natural/organic farmers with a few village industries integrated with farming. These would be animal husbandry, leather, carpentry, smithy, weaving and tailoring and the barber. School, library and cultural centres will be a facility for all children and adults. They will be geared to the immediate agenda of restoring earth.
5. There will be a major world-wide conservation project to save the flora and fauna that has been on the verge of extinction. This will be done principally through restoration of habitat by releasing more land to forests.

IMPLICATION FOR THE PRESENT SOCIETY

Many things people take today as given will be not there. Many of these things are demanded by many individuals and mass movement, but taken together, they will be difficult to accept and also there is always a lot of resistance to change.

1. To begin with there is a demand for smaller, less powerful states and opposition to mega state with powerful army, weapons and economy. This also implies opposition to armament industry including nuclear weapons.
2. Similarly, with fossil fuel depleting, automobile industry will have to come down because there is really no effective solutions for the automobiles. Instead public transport of buses, trams and railways will be more important. This will be coupled with bicycles, cycle rickshaws, horse and donkey carts etc. One great benefit will be that air pollution will come down drastically.
3. Hopefully alcoholism, use of narcotics and tobacco will become negligible because part of the reason for large scale addiction is alienation in a capitalist society.
4. With better and healthier food, cleaner environment and less stressful life the health care industry, which is the second largest industry, will reduce drastically.
5. With organic farming and reduced availability of petro-chemicals the chemical fertiliser and pesticide industry will also become very small. Bio-fertilisers and bio-pesticides will become more important. On the whole less of these will be required.
6. Commercial agriculture will be reduced and more land will be released for forestry and commons. Cotton will be the main non-food products and sugarcane production will decrease.
7. Petrochemical industry as a whole will be reduced considerably and communities will be rid of the menace of plastic bags all over the urban scene.
8. The need for power industry will reduce because armament and large governments consume lot of irrational power. The reduced power need can be met with a mix of coal, and oil as of today. However they can be coupled with decentralised power sources such as solar, wind and mini-hydel projects. Large mega power projects which are dangerous to ecosystem and are very heavily polluting will gradually vanish.
9. The demand for iron and steel industry will also come down. A lot of recycling of existing but no longer useful iron and steel equipment and machinery will become important.

10. The demand for minerals will also decrease. No major new mining projects will come and some of the existing mines will be exhausted and close down. Mining water through deep tube wells will come down drastically.
11. Higher education and research will be aimed at restoring the earth. Thus there will be lot of good research in soil fertility, bio-pesticides, forestry, river systems, ecology, air streams etc. Fundamental research too will be there.

RESISTANCE TO CHANGE

Normally resistance to change among ordinary people diminishes with time, non-availability and with new generation. However this does not happen with people in power. They oppose it with power. What it means is that powerful classes and nations will continue in their old ways. The scramble for depleting resources of oil and minerals will continue to lead to small and big wars. It can also lead to a world war kind of situation which, this time around, with nuclear, chemical and biological weapons can destroy almost all living beings. So people cannot slacken in their existing movements of anti-war, anti-nuclear weapons and energy, opposition to mega dams and polluting power and other industries. Nor should they forget the daily struggle of billions of people just to survive. During the transition period these struggles will be even more painful. People will face job losses, malnutrition, hunger, illnesses, suicides and so on. What they need to do is to strengthen all these struggles and mass organisations like trade unions, peasant associations and other civil society organisations and engage with them with ideas of a fossil fuel free society.

Appendix : The Visionaries

Walden by Henry David Thoreau

<[http://en.wikipedia.org/wiki/ Henry David Thoreau](http://en.wikipedia.org/wiki/Henry_David_Thoreau)>(1817-1862) published in 1854, emphasises the importance of self-reliance, solitude, contemplation, and closeness to nature in transcending the crass existence that is supposedly the lot of most humans. *Walden* is neither a novel<<http://www.bookrags.com/Novel>>nor a true autobiography, but a **social critique** of the Western World, with each chapter heralding some aspect of humanity that needed to be either renounced or praised.

Fields Factories and Work-shops is a landmark anarchist text by **Peter Kropotkin** <[http://en.wikipedia.org/wiki/Peter Kropotkin](http://en.wikipedia.org/wiki/Peter_Kropotkin)>(1842-1921), and arguably one of the most influential and positive statements of the anarchist political position. His inspiration has reached into the 20th and 21st centuries as a lasting vision of a more harmonious way of living, of a new world. To a large degree Kropotkin's emphasis is on local organisation, local production obviating the need for central government. Kropotkin's vision is also on agriculture and rural life making it a contrasting perspective to the largely industrial thinking of communists and socialists. His focus on local production leads to his view that a country should manufacture its own goods and grow its own food, making import and export unnecessary. To these ends he advocated irrigation and to boosting local food production ability. Critics say he is rather optimistic in the work, however the problems arising from industrialisation and its reliance on fossil fuels has shown his ideas to be far sighted and possibly appropriate for the post-fossil fuel age.

The Kingdom of God Is Within You, the non-fiction<<http://en.wikipedia.org/wiki/Non-fiction>>magnum opus<http://en.wikipedia.org/wiki/Magnum_pus> of **Leo Tolstoy**<http://en.wikipedia.org/wiki/Leo_Tolstoy> (1828-1910), is the culmination of thirty years of Tolstoy's Christian<<http://en.wikipedia.org/wiki/Christian>>thinking, and lays out a new organisation for society based on a literal Christian interpretation. Tolstoy takes the viewpoint that "Thou shalt not murder" and that therefore all governments who wage war are directly affronting the Christian principles that should guide all life. In the book Tolstoy speaks of the principle of nonresistance.<<http://en.wikipedia.org/wiki/Nonresistance>>when confronted by violence, as taught by Jesus<<http://en.wikipedia.org/wiki/Jesus>>.He advocated non-violence <<http://en.wikipedia.org/wiki/Non-violence>>as a solution to nationalist woes and as a means for seeing the hypocrisy of the church. These words had profound influence on Mahatma Gandhi <http://en.wikipedia.org/wiki/Mahatma_Gandhi>. He wrote in his autobiography *The Story of My Experiments with Truth* <http://en.wikipedia.org/wiki/The_Story_of_My_Experiments_with_Truth> that this book "overwhelmed" him and "left an abiding impression." Gandhi listed Tolstoy's book, as one of the most important modern influences in his life.

For Indians **Gandhi (1869-1948)** and his booklet **Hind Swaraj** immediately come to mind. It is a manifesto which is at once a critique of English civilisation (industrial society) and a programme for rebuilding India. The booklet is a severe condemnation of modern civilisation. He was equally critical of modern technology and its craze for labour saving machinery, the impetus behind which is not the philanthropy to save labour but greed. He advocated self-sufficient villages based on rural industry. He had an integral and holistic view of agriculture, animal power, industry, education and health care. Today the problems arising from industrialisation and its reliance on fossil fuels have shown his ideas to be far sighted and possibly appropriate for the post-fossil fuel age.

Swaraj is a kind of Individualist Anarchism <http://en.wikipedia.org/wiki/Individualist_Anarchism>. It warrants a Stateless society as according to Gandhi the overall impact of the State on the people is harmful. He called the State a "soulless machine" which, ultimately, does the greatest harm to mankind. Adopting Swaraj means implementing a system whereby state machinery is virtually nil, and the real power directly resides in the hands of people. Gandhi said, "Power resides in the people, they can use it at any time." This philosophy rests inside an individual who has to learn to be master of his own self<http://en.wikipedia.org/wiki/Self_%28spirituality%29>and spreads upwards to the level of his community which must be dependent only on itself. "It is Swaraj when we learn to rule ourselves."

Gandhi was undaunted by the task of implementing such utopian <<http://en.wikipedia.org/wiki/Utopian>>vision in India. He believed that by transforming enough individuals and communities society at large would change. He said, "It may be taunted with the retort that this is all Utopian and, therefore not worth a single thought. Let India live for the true picture, though never

realizable in its completeness. We must have a proper picture of what we want before we can have something approaching it."

An Agricultural Testament by Sir Albert Howard

<http://en.wikipedia.org/wiki/Sir_Albert_Howard> (1873-1947), <<http://en.wikipedia.org/wiki/Publishing>> in 1970 <<http://en.wikipedia.org/wiki/1940>>, is credited by some with launching the organic farming <http://en.wikipedia.org/wiki/Organic_farming> agricultural <<http://en.wikipedia.org/wiki/Agriculture>> movement <http://en.wikipedia.org/wiki/Cultural_movement>. It focuses on the nature and management of soil fertility <http://en.wikipedia.org/wiki/Fertility_of_soil>, and notably explores composting <<http://en.wikipedia.org/wiki/Composting>>.

At a time when modern, chemical <<http://en.wikipedia.org/wiki/Chemical>>-based industrialized <<http://en.wikipedia.org/wiki/Industrialization>> agriculture was just beginning to radically alter food production, it advocated natural processes rather than man-made inputs as the superior approach to farming. In 1924, he set up the Indore Institute of Plant Industry at Indore, Central India. Here he developed the concepts of Nature's Farming. He argued that since natural ecosystems are stable over long periods of time, in farming too we should imitate as far as possible, the local natural ecosystem. He observed four principles in nature: 1. Mixed cropping is the rule; 2. The soil is always protected from the direct action of sun, rain and wind; 3. The forest manures itself; 4. Crops and livestock look after themselves. Gandhi was aware of his work and visited him in Indore. He rewrote his pamphlet on composting and published it in the *Harijan*. One of his co-workers Mira Ben devoted her life in spreading composting methods in villages based on Howard's methods.

Masanobu Fukuoka, born (1913 <<http://en.wikipedia.org/wiki/1913>>-), author of the 'One Straw Revolution' <http://en.wikipedia.org/wiki/The_One-straw_Revolution>, The Road Back to Nature <[http://en.wikipedia.org/w/index.php?title=The_Road_Back_to_Nature & action=edit](http://en.wikipedia.org/w/index.php?title=The_Road_Back_to_Nature&action=edit)> and The Natural Way Of Farming <[http://en.wikipedia.org/w/index.php?title=The_Natural_Way_of_Farming & action=edit](http://en.wikipedia.org/w/index.php?title=The_Natural_Way_of_Farming&action=edit)>, is one of the pioneers of no-till

<http://en.wikipedia.org/wiki/No-till_farming> grain <<http://en.wikipedia.org/wiki/Central>> cultivation. Fukuoka practises a system of farming he refers to as "natural farming." Although some of his practices are specific to Japan, the governing philosophy of his method has successfully been applied around the world. In India <<http://en.wikipedia.org/wiki/India>>, natural farming is often referred to as "Rishi Kheti". The essence of Fukuoka's method is to reproduce natural conditions as closely as possible. "Natural farming is not just for growing crops, it is for the cultivation and perfection of human beings."

Small Is Beautiful by **E F Schumacher** <http://en.wikipedia.org/wiki/E._F._Schumacher> (1911-1977), originally published in 1973

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<http://en.wikipedia.org/wiki/Essay> that brought Schumacher's ideas to a wider audience, at a critical time in history. Schumacher's work coincided with the growth of ecological <http://en.wikipedia.org/wiki/Ecology> concerns and with the birth of environmentalism <http://en.wikipedia.org/wiki/Environmentalism> and he became a hero to many in the environmental movement http://en.wikipedia.org/wiki/Environmental_movement. In the first chapter of 'Small Is Beautiful', "The problem of Production", Schumacher points out that the economy <http://en.wikipedia.org/wiki/Economy> is unsustainable. The natural resources http://en.wikipedia.org/wiki/Natural_resources (especially fossil fuels http://en.wikipedia.org/wiki/Fossil_fuel), are treated as expendable income <http://en.wikipedia.org/wiki/Income>, when in fact they should be treated as capital http://en.wikipedia.org/wiki/Capital_%28economics%29. Since they are not renewable and thus subject to eventual depletion. He further points out that similarly, the capacity of nature to resist pollution <http://en.wikipedia.org/wiki/Pollution> is limited as well. Schumacher's philosophy is a philosophy of enoughness, appreciating both human needs and limitations, and appropriate use of technology. It grew out of his study of village based economics, which he later termed Buddhist Economics. He faults conventional economic thinking for failing to consider the most appropriate scale for an activity, blasts notions that growth is good, and that bigger is better, and questions the appropriateness of using mass production in developing countries, promoting instead production by the masses. Schumacher was one of the first economists to question the appropriateness of using GNP to measure human well being, emphasizing that the aim ought to be to obtain the maximum amount of well being with the minimum amount of consumption.

Patrick Geddes in India is a collection of excerpts of writings of **Patrick Geddes (1854-1932)** while he was a Scottish town planner and was in India between 1915 and 1919. In Geddes' words Town-planning is not mere town planning, not even work planning. If it is to be successful it must be folk planning, Geddes advocates tree planting especially fruits yielding trees and vegetable gardens as integral to town planning. It insists that an enormous proportion of the diseases of children-and of men and women-would disappear if there were a substantial increase of fresh vegetables and fruits in their diet. Further, everyone knows that the most destructive of the diseases of India are diseases of the alimentary canal and that these diseases are communicated in two ways, by dust and by polluted water. These planting proposals would greatly diminish both the dispersal of dust and the pollution of water.

There are three central themes in Geddes work. First is 'Respect for Nature'. His approach is deeply ecological emphasizing a city's relationship to its water resources, the promotion of parks and trees, the importance of recycling, and the lessening of dependence on the resources of the hinterland. The second theme is 'Respect for Democracy'. He insisted that the residents of a city must help design plans made for them. The third theme is 'Respect for tradition, appreciation of all that is best in the old domestic architecture of Indian cities and of renewing this when it has fallen away'. □□□

