

# **SUSTAINABLE DEVELOPMENT -A GANDHIAN APPROACH<sup>1</sup>**

by

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Ladies and Gentlemen,

I would like to thank Jamnalal Bajaj Foundation for giving me this prestigious award. It is an honor that I accept with gratitude and humility. I would also like to thank my present and past staff at NARI who have helped me in the work that the Foundation has honored.

Jamnalal Bajaj was a very close associate of Gandhiji. To my mind Gandhiji's ideas are more relevant today than ever before, specially his philosophy of self-reliance and decentralization. I feel his philosophy can show us the way for achieving sustainable development and help make India a stronger country.

The basis of all life is energy. Quality of life is related to energy consumption. All of us who live in a developing country like India aspire to a certain quality of life as practiced in the western countries. Sometimes, I wonder whether the wasteful western quality of life is better and desirable. For example US alone is contributing about 23 percent of global pollution. However pressures to attain it have been exerted by increased global electronic communications. With insufficient energy resources in India (per capita energy consumption of India is 6% that of U.S.A.), a U.S. or European type quality of life is untenable. There are guestimates that by the year 2025 with the increased rate of automobile consumption in India and China, major portion

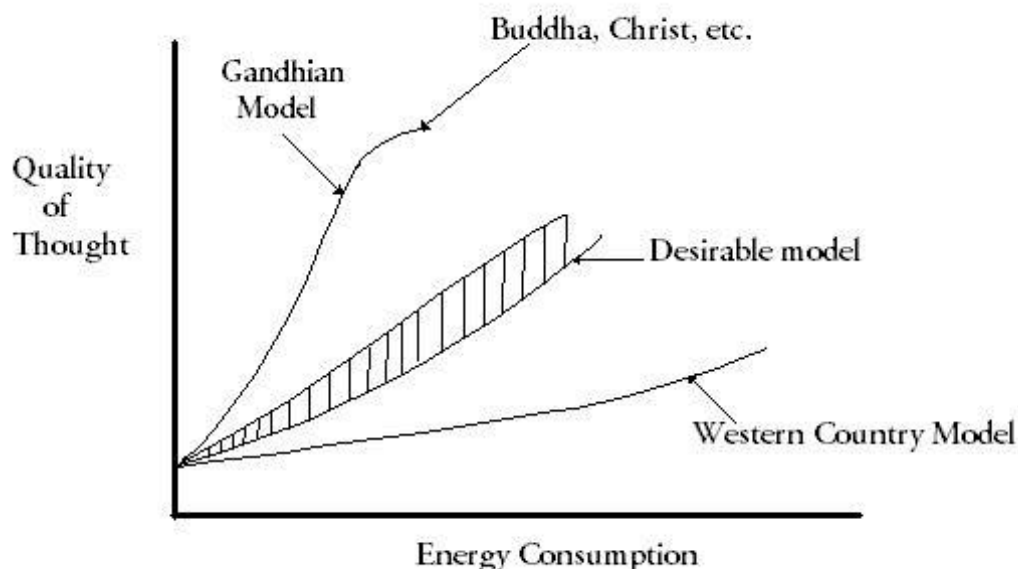
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<sup>1</sup> Acceptance speech for Jamnalal Bajaj Award, November 6, 2001 at Mumbai.

of world petroleum products will go to these countries. Presently there are estimates that this year we will import about Rs. 70,000 crores worth of petroleum products. Besides creating energy crisis and balance of payment problems in our countries, this will play havoc with world environment and create conditions for world conflict.

When there is a huge gap between demand and supply of energy, there are possibilities of conflict and social strife. In coming years this gap will increase, leading to worsening social situation in cities of India. The riots of 1984, 1992 etc. can be traced to the low quality of life in ghettos of big cities. The spark could be from any cause. The slow-down in Indian economy is creating large-scale unemployment and could create frightening scenarios of social instability if timely correction is not made.

Quality of life in any country is a function of its cumulative energy consumption  $E$  and its present per capita energy consumption  $E_{pc}$ . Cumulative  $E$  reflects the energy that was spent in development of its infrastructure. For historical reasons  $E$  was not available to developing countries. Hence it is difficult to reach U.S. or European quality of life even if  $E_{pc}$  somehow by magic becomes available. Since the life style in western countries is unattainable, we should try to develop an alternative life style in India. I think a life style based on the maxim of “simple living and high thinking” is a possible choice. Thus our ancient philosophical thought should be used to temper our greed for resources and energy. A possible model is shown in the figure below :



The Gandhian energy model is difficult to achieve but we can strive for it. I also believe that all the societies in the world will eventually evolve according to this model.

Hallmark of evolution of a system is its **size reduction; increase in energy usage efficiency; increase in complexity** and its **punctuated equilibrium with its surroundings**. All these also lead to sustainable systems. Societies are like **Prigogine's dissipative structures** and evolve depending on the quality and quantity of energy passing through them. Sustainability demands that future sources of energy should be in distributed form. Following this approach we can think that the future of all societies will be **decentralized, high technology-dependent and rural-based**. India is already a decentralized and rural-based society. Rather than going the way of a megacity-based development model it is better to arrest this trend by introducing high

technology systems in rural areas and make them sustainable. Probably this was the dream village of Gandhiji. These rural areas connected via the internet will form the basis of decentralized society.

Intelligent and smart machines with strong man/machine interaction may power the future production systems of rural India. Gandhiji's vision was similar except he wanted the system to depend on human labour only. There are already such smart machines available where human muscle power is used to get high quality output (for example to charge batteries for home lighting or play radios or charge cell phones via very efficient small generators). The inputs to these smart machines will be materials, energy and human intervention. Such smart and small scale manufacturing systems - also called **desktop manufacturing units**, will probably become available in another 10-15 years' time and may form the backbone of multipurpose factories in rural areas.

Sustainability is like a chair. Its 4 legs can be thought of as **4 E's**: a) Energy; b) Economics; c) Environment; and d) Equity. All the four legs have to be equal for comfortable sitting and interconnected to provide stability. The base has to be of the right size. Too big a base will make the chair sag. Too small will make it unstable.

For a sustainable Indian Society, **Taluka seems to form a right size**. Its size lies between a small village and a megacity. All the above concepts can be incorporated in a Taluka model. Hence the focus should be on Taluka as a developmental unit. With Taluka level decentralized energy sources in place (they could either be based on biomass or any other renewable energy) there are possibilities of this model forming a basis of decentralized high technology societies.

**NARI's** work in Phaltan Taluka has shown that it has enough biomass (as a by-product of food production) to produce from it, all its energy needs of electricity, liquid and gaseous fuels via high technological conversion systems. Besides, it can provide 30,000 jobs and give the Taluka a net income of Rs. 200-300 crores/year thereby helping stop the exodus of rural population to urban areas. Thus the 3500 odd talukas in the country have the potential of creating tremendous wealth. The Taluka model can therefore form the basis of food and energy security for the country. The Government can help by setting up a Taluka Development Corporation and should create conditions so that **private sector can participate extensively in this venture.**

This model can create substantial wealth for the inhabitants of a Taluka, which will lead to decentralization of economic and political power. This is the best bet against economic deprivation, corruption and unaccountable ruling elite. **Development and democracy work best in decentralized power structure – a message that was constantly preached by Gandhiji.**

There seems to be a gloom in Indian society. Recent events in U.S. have exacerbated it. Yet we have most of the things in our country – our excellently trained people, land, resources and materials. Probably what we lack is leadership. I feel if we all pull ourselves together and try to solve our unique problems in our own decentralized Gandhian way then we can produce a sustainable society for 1/5th of mankind and show the world a new way.

Thank you.