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### Can the World Industrialization Project Be Sustained?

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Marx and Engels that they could see the inevitability of this development. It was their fate, and I think ours, to have been overly optimistic concerning the time frame over which international proletarian consciousness is formed.

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It is thought that the peculiar merit of Democracy lies in this: that it gives to every man a chance to pursue his own ends. The reverse is true. The merit lies in the assumption imposed upon every man that he shall serve his fellow men. This is by the law of his being his only chance for happiness.—John Jay Chapman, *Causes and Consequences*.

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**CAN THE WORLD INDUSTRIALIZATION PROJECT  
BE SUSTAINED?**

by ISIDOR WALLIMANN

The subject addressed here must be one of the most pressing and significant that humanity has been confronted with so far. Yet, only few attempts are underway and little effort is spent to analyze the dangers we face and to develop strategies designed to avert the looming catastrophe. I would like to maintain that world industrialization and urbanization and its associated social systems and techniques—such as the universal market system or centralized planning bureaucracies—cannot be sustained except for a relatively few privileged people and at the cost of increased mass death which may include the practice of genocide. The alternative, namely, to abandon the global industrialization project and to begin a move away from industrial society as it is known today, equally entails a risk of mass death on a tremendous scale.

What exactly is the nature of the problem that confronts us? What are the anticipated bottlenecks based upon which one could say that the “world industrialization project” will come to an end? What are the bottlenecks that could lead to mass death? In an attempt to address these questions, we turn first to a short discussion of the process of industrialization.

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Isidor Wallimann teaches sociology, economics, and social policy at the School of Social Work, in Basel Switzerland. This essay is based on the introductory lecture given at the Center for Applied Social Theory, University of Kansas, in Lawrence, Kansas, in September 1993.

### Industrialization and its Correlates

It is important to recall that the change from agricultural to modern, urban, and industrial societies has always been financed on the back of peasants both in the nineteenth century in the area that is now known as the center, and in the twentieth century in the area that is now known as the periphery. Whether or not this transfer of value away from the agricultural sector has been achieved by political and bureaucratic means or through the indirect and anonymous coercion of market systems, the truth remains that the surplus product of agriculture alone served to finance industrial production and made urban and industrial life possible. This is not to deny that agriculture simultaneously became more productive due, in part, to the very growth in the urban-based sciences and industrial production it had financed. However, much of this transformation has always been associated with immense hardship, be it for the many who remained in rural areas or for those who migrated as wage laborers to the growing cities.

The most common methods of transforming agricultural society have been, on the one hand, the market mechanism associated with capitalism and, on the other, the central planning approach relying primarily on authoritarian bureaucratic methods. The latter can again be divided into one that encourages urbanization (Eastern Europe) and one that tends to discourage large-scale rural-urban migration. Thus, China has promoted the selective industrialization of rural communities. Despite these differences, the socialist approaches have one thing in common which clearly distinguishes them from the capitalist industrialization technique: the belief that industrial society can be attained while guaranteeing a socio-cultural existence minimum to all. It was only from about 1795-1834, and only in England during the Speenhamland regulations, that the capitalist technique resorted to a kind of guaranteed minimum income policy. And even this phase can be seen primarily as a strategy to get

industrialization going, to soften the blows dealt by land enclosures, and to encourage enough individuals to permanently participate as wage laborers outside agriculture. Once industrialization had gained enough momentum, the Speenhamland regulations were abandoned, to make room for the poor laws, police and jails, utilitarianism and free markets, Manchester liberalism and social Darwinism, cyclically recurring economic crises, class struggle, and revolutionary activity.

By the time the modern welfare state developed, the capitalist system had entered its imperialist phase and had taken a firm grip on ever more distant agricultural populations whose surplus could be used both to expand the newly created industrial society in the center and to introduce large scale urban life and rudimentary industrial production in the periphery. While class struggle and other conflicts may have been instrumental in bringing it about, the welfare state, and the almost guaranteed existence minimum that we associate with it, particularly since the Second World War, has also been financed by surpluses appropriated and transferred from the periphery. Meanwhile, that half of the world's population still subject to industrialization under capitalism is far from having a guaranteed existence minimum and is at best only beginning to establish the first and most rudimentary social-insurance schemes. Additionally, as the worldwide transformation proceeds, thus providing alternatives for industrial producers in the center, the center's welfare state social guarantees are also eroding, despite such normative documents as the United Nations' Human Rights Convention or the European social charter, which in the face of the competing socialist alternative to capitalist development were once so strongly promoted by the already transformed and modernized capitalist center.

### Population Growth

All industrialization has been associated with significant population growth. The world's population roughly doubled

from 1750 to 1900 and again from 1900 to 1950. In 1800, it still took far more than a hundred years for the world population to double. Today, it takes only thirty-eight years. Some 1.7 billion people inhabited the planet in 1900. In 1990 it was 5.3 billion, and in the year 2025, there will be 8.5 billion. Only about a fifth of the total population lives in the fully industrialized part of the world (including Eastern Europe). About two-fifths live in India and China, with China having a slightly larger population than India. Altogether 60 percent of the world's population lives in Asia, about 9 percent in Latin America, and about 12 percent in Africa. The reasons for the ever faster population growth are well known. Although birth rates have shown a tendency to decline, they have not decreased fast enough to compensate for gains due to lower infant mortality and a general increase in life expectancy. These gains have not been made possible by high-tech medicine, but rather by relatively simple techniques such as an improved diet and better control over bacterial environments (hygiene, water supply, food storage, antibiotics). Presently, it is not expected that AIDS or illnesses such as cholera or tuberculosis, although spreading, will significantly alter the rate of population growth in the near future.

One of the correlates of industrialization has been that birth rates decrease with increased urbanization and a higher standard of living. Experience in fully industrialized countries has shown that population growth tends to stabilize at a low positive rate, while some countries even have a slightly negative growth rate. This experience leads to the notion that, if the entire world were industrialized, urbanized, and economically developed, population too would be stabilized. Of course, the crucial assumption made here is that it is possible to provide the entire world with the standard of living of industrial countries, irrespective of the nature of economic systems and ecological considerations.

Experience also shows that most campaigns to hasten the reduction of birth rates are successful only in societies with a sufficiently high standard of living. They can also be successful

in relatively poor societies with low standards of living if, and only if, social and economic justice is simultaneously given a very high priority. The more vulnerable people become economically, threatened by the **industrialization and urbanization** process, the more they are inclined to maintain birth rates that enhance population growth. This pattern is often seen as an example of irrational behavior. However, as is well known among development workers and agricultural specialists, when individuals and their families must live at the margins of existence, they tend to minimize risks and not to maximize profits and accumulation. By maintaining higher birth rates, they aim to spread severe existential risks to more individuals, which from their point of view is a very reasonable thing to do.

It is also true, however, that women often give birth to more children than they desire, or than are required for the family's survival and successful reproduction. Since this condition is usually induced by gender inequality, it follows that birth rates can also be reduced in part by strengthening the position of women in society. In sum, without sufficient equality on the micro and macro levels, there is little hope of reducing birth rates sufficiently for population growth to level off.

#### Migration and Employment

Since industrialization reduces the percentage of the population employed in agriculture, and since insufficient alternative employment is available in rural areas, people have migrated to cities. Presently, some 45 percent of the world's population lives in urban spaces. In fully industrialized countries it is about 70 percent, while it is only about 35 percent in those areas still undergoing industrialization. Latin America is an exception. About 70 percent of its population lives in cities.

The industrialized center has only about 7 percent of its population employed in the agricultural sector. The rest of the world (which accounts for about four fifths of the globe's

inhabitants) still employs about 60 percent of its population in agriculture. This corresponds to the situation in Europe and the United States in the middle of the nineteenth century, when Europe's industrialization was well under way. However, industrialization and urbanization then involved both a smaller population and extended over a larger time span than is true today. Therefore, new and old urban spaces contain considerably more people than nineteenth century cities, and we have not even begun to imagine what it means to bring—in addition to the ongoing population growth—only half of the now remaining agricultural population into other forms of usually urban-based economic activities.

The nineteenth century transformation of agricultural society channelled migrants into industrial work—to the extent that they found employment at all. The tertiary, mostly service sector, was developed later. Today just the opposite is true. The formal economy favors the expansion of services. In addition, the huge informal economic activity belongs itself more to the tertiary than to the secondary sector. This pattern seems to confirm the notion that we are far from growing into a true world industrial society. Displaced from agricultural occupations, people end up with few perspectives and no vision that can make them feel part of a new era, involving such things as the creation of nation states, industrial production, mobility, etc., which were characteristic of the nineteenth century. To the extent that they are taking part in the international division of labor, they mostly do so in dependency and with unequal terms of trade. And even though the standard of living in developing countries erodes further and poverty deepens, the population affected by industrialization and urbanization remains politically disenfranchised on an international level, that level on which industrialization policies and world economic decisions are being made.

#### Energy and Other Resources

Thus far, all industrialization and urbanization has been associated with an increased use of energy, directly and indi-

rectly replacing the human and animal energy used in the process of production and distribution, expanding the sphere of unnecessary consumption, and allowing for world markets and their corollary, the world division of labor. This expansion of world trade and the world division of labor is, of course, again a precondition for the world industrialization process to continue, which again calls for an increased use of energy.

World energy consumption, although increasing, remained relatively low until 1950. From 1950-1990, however, the use of energy increased seven-fold, far outpacing the population which approximately doubled during the same period. Most of this increase came from the use of fossil fuels, of which oil and gas constituted the largest share. The contribution of atomic and hydroelectric power to the world's energy supply is only about fifteen percent.

As GNP per capita grows, so does the use of energy. Therefore, one fifth of the world's population uses about four fifths of the world's energy, most of it in the form of industrial fuels. Traditional fuels (wood, peat, dung) supply about five percent of the world's energy and are almost entirely (85 percent) used in peripheral countries. At the present rate of use, it is estimated that the world has oil for another forty years, gas for another sixty, and coal for another six-hundred-and-sixty years. Coal supplies about a third of today's energy. The future supply of traditional fuels (particularly wood) depends on several factors like the need for drinking water, the need to reduce carbon dioxide levels, the amount of acid rain, the damage resulting from the destruction of ozone layers, etc.

It is not possible here to address the future supply of all resources like minerals, water, etc. It is important, however, to mention that the arable land available for the production of food and fibers tends to shrink. Any expansion will be possible only at the expense of forests or grasslands, jeopardizing other resources, particularly water, top soil, etc. Any increases in the agricultural output would, therefore, have to come from different growing techniques, pest controls, irri-

gation, the use of fertilizers, plant breeding and genetic engineering. During the last decade, the growth in total world grain production has decreased and, if measured per capita to correct for population growth, world grain production has tended to level off.

### Bottlenecks

Impending bottlenecks, as can be deduced from the discussion so far, center around population growth, land resources, energy, and environmental constraints. What is most crucial is that we have never found ourselves in a situation in which all four factors are so closely linked. Sure, we have had a growing population and population pressures before, but there has always been more land to be cultivated. Sure, we have had large populations to care for before, but more energy-intensive agricultural production and improvements in plant breeding have always been possible. Sure, we have had the need for more energy before, but there has always been some new oil field just a few feet below the ground. Sure, we have had all these pressures before. But have we experienced them as impenetrable limits, as absolute lacks of land and energy? Have we experienced them all at the same time and as impenetrable limits? Certainly not. Have we ever simultaneously experienced such severe land and energy limits and also faced the real danger of an ecological collapse? Again, certainly not.

Capitalism, which is now the world's dominant political and economic system, thrives on market expansion. However, how compatible is capitalism with the long term zero or negative growth environment of the future? It is incompatible! Not only does capitalism have great difficulty in handling such conditions, economically and politically, it has, for the same reasons, difficulty also in preparing for it. Thus, markets, if left to themselves, are incapable of factoring in long term scarcity. Has the price of oil, for example, signaled that oil will soon be very scarce? On the contrary, oil markets have, if anything, signaled an ever growing supply of oil. The same

could be said for land, lumber, and many other natural resources in limited supply.

The ability of the capitalist market system to guide us through the next decades of increasing scarcity and downscaling of industrial production is very limited indeed, and if lives are to be preserved, the primacy of politics over markets will have to be introduced again, *as was the case for practically all of human history except for its bourgeois phase*. In this context, it is ironical that, just at a time when political control over the economy is especially needed, Eastern Europe is—with huge losses in productive capacity and means of production and at tremendous social and economic restructuring costs—re-introducing the primacy of markets.

### Conclusions

To enter an age of ever increasing scarcity and downscaling is to enter an age of increased conflicts which contain a great potential for mass death and even genocide depending on the mechanisms by which scarcity is channelled to affect certain and not other groups and the mechanisms by which conflict is resolved, managed, or suppressed. If the analysis given here is correct or even plausible, and if the goal is to help humanity survive this tremendous challenge with no or minimal human loss, we must increasingly ask questions like the following:

1) How does the capitalist system tend to react when it approaches a zero or negative growth environment? What are the economic and political mechanisms by which scarcity is then distributed? What is the likelihood for fascism and other authoritarian political systems to arise in order to deal with scarcity while preserving class relations? What might be the cost to human lives if the distribution of scarcity were left to markets or to authoritarian and fascist politics?

2) What can be learned from the behavior of cooperatives and other mutual help type social organizations pertaining to the management of scarcity?



3) To what extent is the social and democratic control over the means of production a prerequisite for increased solidarity and a more equal distribution of scarcity (or surplus), since even a relatively perfect world-wide distribution of income alone would not come close to eliminating world poverty today, and would be even more impotent in keeping people alive under conditions of pronounced world wide scarcity?

4) To what extent can basic regional self-sufficiency, if coupled with a democratic access to the means of production, inhibit migration, decrease the birth rate and reduce the surplus that is transferred from the periphery to the center and deal with the impending bottlenecks?

5) What is the necessary kind and level of industrial production, and modern cultural and social life that *must* be retained in order to effectively and efficiently downscale while simultaneously meeting growing bottlenecks and needs?

6) What conflict resolution strategies can be pursued for conflicts in which all parties have something to lose?

These are but a few questions that must increasingly be addressed. Other important questions could be added. More so, the social science theory repertoire must, in anticipation of the issues ahead, also be reevaluated. Many classical and modern social science theories in use today have their origin in the late eighteenth and nineteenth centuries. Invariably, these theories are concerned with the dramatic social changes brought about by the opening, expansion, and differentiation of social and economic systems, and as a consequence, will soon prove to be grossly inadequate. As this analysis suggests, the severe bottlenecks that lie ahead will bring about an equally drastic social change due to scarcity, system closure, and due to the *downscaling* in industrial production, world markets, the world division of labor, urbanization, etc. This transformation of society will not just be a 180 degree reversal of the ongoing world industrialization, but one of another kind. I am convinced that this all encompassing, fast, and

drastic social change of the near future will ultimately also generate a new brand of "classical" social theory.

## INTERNATIONAL CONGRESS ON KERALA STUDIES

27-29 August 1994

Thiruvananthapuram, Kerala

The AKG Centre for Research and Studies is organizing a three day International Congress on Kerala Studies to bring together scholars from various disciplines as well as activists for mutually beneficial interaction. Parallel discussions on specific, selected themes will be organized in the following five broad subjects with eminent academicians as panel chairpersons:

**Kerala Economy**

(C.T. Kurien, MIDS, Madras)

**Society and Politics**

(K. Saradamani, IMG, Thiruvananthapuram)

**Kerala History**

(K.N. Panikkar, JNU, New Delhi)

**Culture and Language**

(Mohan Thampi, BHU, Varanasi)

**Geography and Natural Resources**

(M.S. Swaminathan, MSSFRSAD, Madras)

**Sri.K.R. Narayanan, Vice President of India, has agreed to inaugurate the Congress.**

Scholars on Kerala are invited to register for participation by 31 March 1994 with an abstract of their proposed paper. The last date for submission of a paper is 31 May 1994. Acceptance of papers for discussion/presentation/circulation will be subject to refereeing.

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