REVIEWS

TRIVENI: Science, Democracy and Socialism

A. Rahman, Indian Institute of Advanced Study, Simla, 1977

Susantha Goonatilake

One of the hopes of development in the newly-independent countries was the use of science and technology for increases in production. The new millenium which seemed to be at hand in the rhetoric of thirty years ago when independence was either granted or proclaimed in many Asian countries had, as an implied central theme the widespread use of science and technology. One of the countries that emphasised — at the very highest political levels — from the earliest post-independence times, the need for sponsoring science and technology was India; (A contrast we should note in parenthesis, to the case of Sri Lanka which has yet to see the type of sponsorship which was given by Nehru 30 years ago in India). As a consequence India today is reputed to have the third largest scientific and technical manpower pool in the world, as well as possessing scientific and technological capabilities in almost every point in the science/technology spectrum. Yet, Indian per capita incomes and life expectancy of the population remain at a low level whilst a majority of the population is still illiterate.

Prof. Rahman's book is a foray into this territory of the interconnection of science on the one hand and society on the other. He subtitles his book Science, Democracy and Socialism implying this inter-connection and also indicating his value bias towards democracy and socialism. Prof. Rahman's study is largely on India but the lessons he draws have validity for many other Third World countries. Prof. Rahman is the Head of the Council for Scientific and Industrial Research which oversees science policy in India and this book is a collection of lectures given by him at the Indian Institute of Advanced Study at Simla.

His book deals with the roots of science in both the western tradition and the Indian one. In the former case he goes back to the times of the Greeks and the arguments forwarded by the Ionians and Epicureans on behalf of experimental and rational knowledge. On the Indian side he takes the example of the Carvaks and their devastating critique on the myths and superstitions of their time and he describes the Carvaks sponsorship of a materialist view of the world. He discusses the social context within which these two scientific-materialistic approaches grew and interacted in the two countries of the ancient world.

That was, as it were, the "scientific" world that was, in the East and West millenia ago. But modern science arose more recently within the crucible of Renaissance Europe and Rahman traces this rise within the breakdown of medieval society and the associated social movements. In this discussion he traces the impact of the growth of particular ideas and viewpoints within the context of the changing socio-economic structures brought about by emerging capitalism. With this background of the growth of early science in the West Rahman also describes the transformation of the scientific movement to almost a social movement in more recent times. Events subsequent to the First World War and the later conscious attempt to foster science by governments — the experience of the Soviet Union being the first such example — were crucial to this.

But the importance to the Third World is in the interaction of this science that grew within European parameters with the developing societies. In tracing the problems of contemporary India Prof. Rahman goes back historically and traces the growth of scientific viewpoints within the medieval period-after which period the European impact became significant. Although in India secular science and technology was overshadowed by religious philosophies he notes important technological developments during the medieval period like the development of the techniques of grafting in fruit culture, developments in textiles and architecture and several innovations in the 18th century giving rise to sophisticated armaments like the screw cannon and the multi-barrel gun.

The modern period of Indian science begins largely with the arrival of the British whereby Rahman notes a process of development occurred "to make the culture, economy and science and technology satellitic to the culture and economy of Britain". He identifies this artificial grafting as being the major problem of Indian science then and afterwards. The fact that the implanted science and technology grew up to solve problems of a different social and cultural milieu continued to deform the development of Indian science, (a number of the books that were used in teaching for example being quite often irrelevant). He identifies this externalisation of the value systems of science and technology away from India and the consequent isolation of the science and technology system from the society as being key aspects of the problem of science in India.

His view on science and technology, as it exists today in India, is that it is a relic of cultural domination by the West and further that a continued growth of "satellitic science, satellitic to the conceptual, theoretical and practical development of Europe and U.S.A." is maintained in India. In the name of transfer of technology he identifies the transfer of junk technologies at exorbitant cost to the

Third World and he asserts that "the experience of over three decades in India has clearly indicated that lack of development of indigenous R & D and import of know-how and technology, instead of helping in the rapid industrialisation, puts the clock back through increasing the dependence on advanced countries."

His prescription is for the growth of alternative technologies not in the sense of inferior technologies but sophisticated technological systems fitting into the local milieu. He identifies biological engineering and current trends in microbiology as being specific areas for development of alternative systems. He also calls for the freedom of expression of scientists "to raise and discuss issues without fear of reprisal by limited, narrow sectoral interests" which he identifies as of particular significance for scientists working in industry and government agencies.

Triveni is an important work in the growing literature of science and technology in the Third World. Rahman's approach is global and historical and reminiscent of what Bernal did for the study of science and technology in the West in the 1930's and of what Kosambi did a few decades ago for the study of Indian history. The book is not without its faults. The style is somewhat jerky and one wishes that adequate reference was also given to other work (though small in number) that has been done in this genre. One also notes the underlying definition of an almost mechanistic view of science which does not take into account the non-mechanistic nature of reality being presented, say, in today's particle physics. It also does not pose questions about how far alternative sciences have been developed, in say countries such as the Soviet Union; for that matter whether countries such as the Soviet Union are in fact developing sciences as imitative as those in the Third World. However, these omissions should not cloud the fact that Prof. Rahman's book would remain, in the years to come, an important and even a necessary introduction to the problems of science and developing societies.

How the Other Half Dies
The Real Reasons for World Hunger

Susan George. Penguin Bks. Ltd. 1976

Ivan Ribeiro

During the last two years, grain stockpiling attained the level of the 1960s. These stocks, which are not considered by the main producing countries as reserves but rather as surpluses, have caused a significant fall in the level of international prices. As a result, the farmers in some of those countries started to reduce their production, arguing that the prices are not remunerative; and the Carter Administration is inclined, among other measures, to return to the policy of "land freeze" adopted until 1973. The reader is certainly aware of the meaning of this policy: to adopt a set of incentives and subsidies to restrict the area sown by grain.

Meanwhile, according to FAO's estimates, there were about 500 million hungry and undernourished people in 1970, and this number is expected to increase by nearly two-thirds by 1985. The comprehension of this paradoxical situation (grain surplus and deliberate reduction of production versus people starving) and the study of the ways to resolve it can be considered crucial to our time. Within this context, Susan George's book can be considered a valuable contribution.

The author argues that "the food crisis has too long been presented as the result of nameless forces and, so to speak, in the passive voice. Such and such happens, this or that occurs, but there are no living, visible actors on the stage. "George intends to identify who (or what) is acting and to name the names clearly, having as premise that "famine, hunger and poverty are not inevitable, but are caused by identiable forces within the province of rational human control".

Beyond the reach

With this aim, the author has assembled a remarkable amount of information and carried out a penetrating analysis of the activities of some of the institutions that are supposed to deal with poverty and hunger in the world, namely the United Nations and some of its agencies and the World Bank. The author was also concerned with the multinationals dedicated to agribusiness and to other subjects connected to the problem of hunger as, for example, the population myth, technology and the green revolution.

George's analysis of the World Bank is interesting and stimulating. On the basis of a very good documentation, she analyses whether the Bank can be considered as a developer. She demonstrates that the "bankable" approach still prevails as the basic element to determine the effectiveness of a project and shows that the projects, as a rule, still remain enclaves, whose effects are beyond the reach of, and not necessarily related to, the country as a whole and to the rural poor in particular. The way the Bank deals with the problem of agrarian reform and its possible role in improving the living conditions of the peasants is a special point of the author's focus

Quoting some Bank documents, George shows how its recognition of the fundamental role agrarian reform can play in reducing poverty and hunger in rural areas is not accompanied by concrete support and incentive. On the contrary, she maintains that it has happened that when a country expanded a process of agrarian reform on the basis of a law passed in Parliament (Chile during the Popular Unity Government), the Bank decided to withdraw all financial help to that country.

As regards FAO, George studied basically two aspects of its activities, the Industrial Co-operative Programme (ICP) and the Investment Centre (mainly the FAO Bankers Programme). Her conclusions are very interesting. According to her, FAO, within the whole UN system, is unique in its integration of both multinational industry and commercial banks into its official structure. After disclosing some positive and negative aspects of ICP, she asks whether this FAO activity is really necessary when there is another department in the Organization (the Agricultural Services Division) capable of providing assistance to developing countries in search of food industries. Concerning the FAO Bankers Programme (which includes fifteen major Western banks), she criticizes the prevalent "bankable" approach and the excessive placement of loans to food-exporting activities, disregarding production for the local population.

The Real roots

George ends her book with two chapters entitled respectively "What can they do" and "What can I do". In the former by 'they' she means those ill-defined groups in positions of power who are supposed to be able to alter the status quo), the importance of alternative food sources, immediate food aid, the quick implementation of a World Food Security System, the creation of an early warning system and investment in agricultural development (but not following the "bankable" approach and not without actual income equalization effects) is stressed. Finally the importance of land reform in the context of planned action against dependence in the developing countries is pointed out. In the next chapter, attention is called to the need of organizing people at all possible levels, with the aim of studying the actual reasons and causes of hunger in the world and, simultaneously, carrying out concrete actions destined to overcome it.

These are, in synthesis, the basic topics dealt with in this well-documented, courageous and helpful book. It would not be exaggerating to say that it will certainly help the reader to improve his knowledge of the real roots of the misery and starvation that affect hundreds of millions of people in developing countries.

However, it is necessary to mention that the book was written in a very personal and excessively colloquial style that some how reduces its effectiveness. George sometimes presents her reasoning in a very linear way, hampering a better understanding of the issues under consideration.

Notwithstanding these few minor shortcomings, this is an important book and should be read by everybody concerned with starvation in the world.