# The Chinese Model For Science And Technology

Of the alternate development strategies, the Chinese model of self-reliance has evoked wide interest and has lessons for developing countries, because of its ability to manage the country's development process. Starting with the premise that man is the most precious and valuable resource that can be mobilised for development, the Chinese have adopted a strategy of local and decentralised development. Instead of buying or importing technologies from the industrialised countries, like the Japanese did, the Chinese encouraged the growth of an indigenous technology through a policy of self-reliance. Science was made use of to improve the standards of living of the masses, increase agricultural and industrial output and modernise Chinese society.

By integrating social, economic and political goals the Chinese have been able to make use of science and technology in the development process. They held the view that to achieve growth objectives, it was essential to make the rural sector prosperous by developing the local unit and making it self-reliant. Thus local resources, local initiative and local man-power were utilised to industrialise and increase agricultural production. This gave rise to the use of labour intensive construction and "intermediate" technology. To attain these objectives measures were taken to alter the pattern of distribution, and to ensure that goods and services, financial and welfare measures reached the majority in the rural areas. This effectively prevented science and technology priorities being allocated for the benefit of the urban elites.

Attempts were made to eliminate the rural urban dichotomy, the development of industry at the expense of agriculture, and to change the attitude towards manual work vis-a-vis mental work. These policies were aimed at developing technologies using the abundantly available local man-power in increasing agricultural output and ensured that the rural population reaped the benefits of increased prosperity.

These growth objectives created a change in the pattern of effective demand from urban and upper class consumption to a demand pattern based on the needs of the rural sector. This factor, together with the establishment of an institutional framework capable of supplying the necessary framework to meet this change in the demand structure ensured that science and technology was harnessed for production and for the benefit of the masses, and did not languish in academic portals nor was used for capital-intensive industrial technology.

Reliance was placed on the ability of the masses to create more welfare undertakings for their benefit. Investment in health and education, leading to developments in medical science, sanitary engineering and related technologies and training of man-power received priority as "investment in man" was considered a means for obtaining increased output, as well as an end in itself. Investment in the rural areas has thus enabled the rural population to make a significant contribution to the country's economic development.

The Chinese leadership started with the belief that economic development should start with investment in agriculture and agricultural processing. It has led to the development of local industries designed to exploit local resources and to the fostering of agricultural development by setting up agro-based industries thus linking the industries to the demands of an expanding agriculture. By setting up small-scale industries scattered throughout the country, powerful centres of industrial cultures are created, which narrows the gap between the urban and rural centres, contains rural migration (which retards agricultural development and puts greater strains on the economy), absorbs surplus labour and alleviates unemployment. The experience of Chinese industrial units have been so successful that it has led the Chinese leadership to believe that the surest and fastest way to develop large-scale industry is through small-scale intermediate technology. The Chinese have adopted their policy known as "walking on two legs".

China has an abundance of man-power of which over three-fourths live in the country. In adopting appropriate technologies, they have been conscious of this fact and developed labour-intensive technologies. To make this vast resource productive they have been exposed to flexible educational programmes and greater educational opportunities, and have mobilised them by mass campaigns. Campaigns were conducted to give the masses an awareness of the need to "raise total output by inventing ad hoc techniques for the full exploitation of resources not usable in the more productive (Capital-intensive) industrial sector". Thus they attempt to give a basic knowledge of science and technology at grass roots levels, utilize local resources and labour in the context of "self-reliance", encourage new ways to solve local problems and with the experience gained evolve new techniques. Mao's view is that the fastest route to economic growth is that which most effectively harnesses human talent and resources.

Can the Chinese model be adopted in other developing countries? It is difficult to transfer this model per se for several reasons. Firstly the political, economical and social structures of developing countries have no similarity to that of China. Most developing countries invest in capital intensive industries, and try to expand industry at the expense of agriculture which inhibits the development of the rural areas. Thus, until there is investment in rural areas which will change the pattern of demand and make the rural sector a market for domestic manufactures it is difficult to envisage the transfer of this Chinese model. Moreover, most other developing countries do not have such an abundant supply of labour, nor do they have the political structure that is necessary for it to function satisfactorily. In addition the Chinese have a tradition of adopting science and technology to suit their conditions and also a community responsibility towards its working.